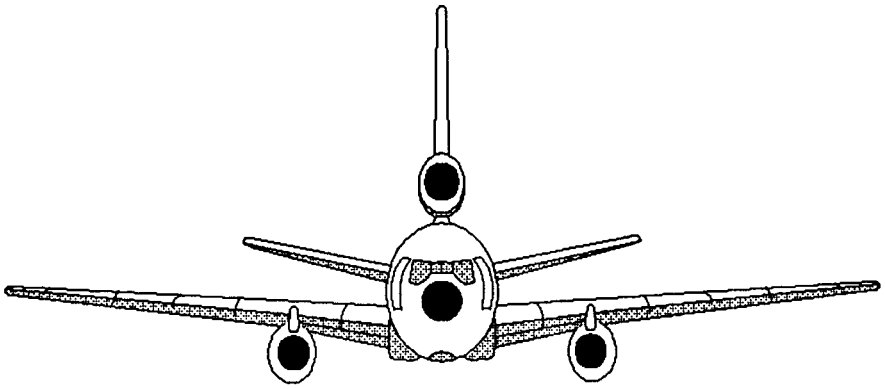
DCN 1120

AIR FORCE TEAM



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AIR FORCE TEAM READ FILE

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Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ALABAMA (Continued)																			
ARMY (Continued)																			
USARC Huntsville (Patton Rd)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jasper	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lincoln (Talladega)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Marion, AL	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Mobile (Wright)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Montgomery (Moniac)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Montgomery (Screws)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Opelika	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC OPP	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sheffield	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Troy	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tuscaloosa	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tuskegee	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC York, AL	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	502	502	0	0	192	255	17	5	63	30	93	62	0	15	7	142	15	4	144
AIR FORCE																			
Abston AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Birmingham Municipal Airport	16	16	0	0	0	16	0	0	6	7	4	0	0	1	4	0	0	1	4
Dannelly Field ANG	5	5	0	0	0	5	0	0	0	0	2	0	0	0	0	0	0	0	0
Gunter AFB	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
Hall AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Maxwell AFB	22	22	0	0	0	22	0	0	0	21	1	0	0	7	10	0	5	12	0

(Continued)

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State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ALABAMA (Continued)																			
AIR FORCE (Continued)																			
Montgomery AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	59	44	15	0	0	44	15	0	6	28	8	0	0	8	14	0	5	13	4
ALABAMA TOTALS	561	546	15	0	192	299	32	5	69	58	101	62	0	23	21	142	20	17	148
ALASKA																			
ARMY																			
Fort Greely	21	21	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Richardson	39	39	0	0	0	39	0	0	0	0	39	0	0	0	0	2	0	0	2
Fort Wainwright	50	50	0	0	1	8	13	28	0	3	2	5	0	3	1	3	2	[illegible]	
Gerstle River Test Site	5	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
ARMY TOTALS	115	115	0	0	1	73	13	28	0	3	41	5	0	3	1	4	2	8	3
DEPARTMENT OF NAVY																			
FLTSURSPTCMD DET 1 Amchitka	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
NAS Adak	95	95	0	0	0	66	25	4	25	0	30	25	0	0	0	76	1	2	74
NAVARCLAB Barrow	13	13	0	0	0	13	0	0	5	0	8	0	0	0	0	8	0	1	8
NOSC Special Areas Alaska	8	0	8	0	0	0	8	0	0	0	0	7	0	0	0	4	0	0	7
DEPARTMENT OF NAVY TOTALS	117	108	9	0	0	79	33	4	30	0	38	32	0	0	0	88	1	4	89
AIR FORCE																			
Alaskan Dewline	49	49	0	0	1	49	0	0	11	49	0	0	33	0	0	0	0	0	0
Anvil Mountain	1	0	1	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1
Bear Creek RRS	9	9	0	0	0	9	0	0	0	0	3	0	0	0	0	0	0	0	0
Bethel RRS	10	10	0	0	0	10	0	0	0	1	9	0	0	1	0	0	1	[illegible]	

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ALASKA (Continued)																			
AIR FORCE (Continued)																			
Big Mountain RRS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
Campion AFS	8	8	0	0	0	8	0	0	0	0	8	0	0	0	0	8	0	0	8
Canyon Creek	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Cape Lisburne AFS	6	6	0	0	0	6	0	0	6	0	6	0	0	0	0	6	0	0	6
Cape Newenham AFS	6	6	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0
Cape Romanzof AFS	12	12	0	0	0	12	0	0	0	12	0	0	0	0	0	0	0	0	0
Chena River	1	0	1	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1
Clear AFB	15	15	0	0	0	15	0	0	3	15	0	0	10	5	5	0	5	5	0
Cold Bay AFS	4	4	0	0	0	4	0	0	1	4	0	0	0	0	4	0	0	4	0
Duncan Canal RRS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
Eielson AFB	72	65	7	0	0	65	7	0	0	27	12	0	0	10	34	0	2	42	0
Elmendorf AFB	58	52	6	0	0	52	6	0	1	21	33	0	0	0	58	0	2	2	0
Fire Island	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
Fort Yukon AFS	5	5	0	0	0	5	0	0	0	0	5	0	0	0	0	5	0	0	5
Galena Airport	10	10	0	0	0	10	0	0	0	0	10	0	0	0	0	10	0	0	10
Gold King Creek Radio Relay Site	2	2	0	0	0	2	0	0	0	1	1	0	0	0	1	0	0	1	0
Granite Mountain RRS	2	2	0	0	0	2	0	0	0	2	0	0	0	0	2	0	0	2	0
Indian Mountain Research Site	20	20	0	0	0	20	0	0	0	0	20	0	0	0	0	20	0	0	20
Kalakaret Creek RRS	2	2	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0
King Salmon AFS	19	19	0	0	0	19	0	0	0	1	0	0	0	1	0	0	1	0	0
Kotzebue	7	7	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0
Kulis ANG Base	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
Murphy Dome AFS	8	8	0	0	0	8	0	0	0	0	8	0	0	0	0	8	0	0	8
Naknek Recreation Camps	3	3	0	0	0	3	0	0	0	3	0	0	0	3	0	0	3	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ALASKA (Continued)																			
AIR FORCE (Continued)																			
Nikolski Radio Relay Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Nome Tank Farm	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
North River Radio Relay Site	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Ocean Cape Radio Relay Site	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
Pillar Mountain RRS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1
Port Heiden Radio Relay Site	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
Shemya AFB	34	34	0	0	0	34	0	0	0	11	0	0	0	7	0	0	7	0	0
Smugglers Cove Radio Relay	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
Soldotna RRS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	[illegible]	[illegible]
Sparrevohn AFS	9	9	0	0	0	9	0	0	0	1	0	0	0	1	0	0	1	0	0
Tatalina AFS	13	13	0	0	0	13	0	0	11	0	13	0	0	0	0	13	0	0	13
Tin City AFS	10	10	0	0	0	10	0	0	5	1	0	0	0	1	0	0	1	0	0
Unalakaleet RRS	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	411	396	15	0	1	394	17	0	44	164	133	2	43	29	110	73	23	63	73
DEFENSE LOGISTICS AGENCY																			
DFSP Anchorage	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2
DFSP Fairbanks	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2
DFSP Whittier	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1
DEFENSE LOGISTICS AGENCY TOTALS	5	5	0	0	0	5	0	0	0	0	5	0	0	0	0	5	0	0	5
ALASKA TOTALS	648	624	24	0	2	551	63	32	74	167	217	39	43	32	111	170	26	75	170

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ARIZONA																			
ARMY																			
Fort Huachuca	62	62	0	0	0	61	0	0	0	0	0	0	0	0	0	0	0	0	0
Navajo Army Depot	47	47	0	0	0	47	0	0	0	0	0	0	0	0	0	0	0	1	0
NG Buckeye	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Florence	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Papago Park Military Reservation	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
USARC Douglas	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Phoenix	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Phoenix 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tucson	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yuma Proving Ground	43	43	0	0	0	43	0	0	0	0	0	1	0	0	0	0	0	0	1
ARMY TOTALS	174	174	0	0	19	154	0	0	0	1	0	1	0	0	1	0	0	2	1
DEPARTMENT OF NAVY																			
MCAS Yuma	18	18	0	0	0	18	0	0	1	0	17	0	0	0	0	17	0	0	17
NOSC Sentinel	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	19	19	0	0	0	18	0	1	1	0	17	0	0	0	0	17	0	0	17
AIR FORCE																			
AFP No. 44, Tucson	13	13	0	0	0	13	0	0	0	12	1	0	0	0	0	0	0	0	0
AJO AFS	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Alcoa AGS	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Davis Monthan AFB	52	52	0	0	1	51	0	0	22	5	6	0	0	4	1	0	3	1	0
Luke AFB	31	31	0	0	7	31	0	0	6	8	0	0	0	1	1	0	0	1	1
Phoenix/Humboldt	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sky Harbor IAP (Phoenix ANG)	5	5	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ARIZONA (Continued)																			
AIR FORCE (Continued)																			
Tucson IAP (Arizona ANG)	13	2	0	11	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0
Williams AFB	16	16	0	0	0	16	0	0	2	4	6	0	1	1	2	0	0	2	0
AIR FORCE TOTALS	134	121	2	11	9	114	7	0	30	32	18	0	1	9	4	0	3	7	1
ARIZONA TOTALS	327	314	2	11	28	286	7	1	31	33	35	1	1	9	5	17	3	9	19
ARKANSAS																			
ARMY																			
AFRC North Little Rock (Pike)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Chaffee	34	34	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	
Pine Bluff Arsenal	66	66	0	0	0	58	0	0	0	31	0	0	0	29	0	0	23	0	0
USARC Arkadelphia	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Blytheville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Camden	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Conway	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC El Dorado (02)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC El Dorado (Garrett)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fayetteville	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Chaffee (1368)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Chaffee (241)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Chaffee (2465)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Chaffee (ECS 15)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Chaffee (NCO Academy)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Smith	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Harrison	9	9	0	0	8	0	0	1	0	0	0	0	0	0	0	0	0	0	

(Continued)

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		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ARKANSAS (Continued)																			
ARMY (Continued)																			
USARC Hot Springs	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jonesboro	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Little Rock (ASF 19)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Little Rock (Finkbeiner)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Little Rock (Terry)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Monticello	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Nashville, AR	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pine Bluff	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Russellville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Texarkana 01	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Texarkana 02	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC West Memphis	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	217	217	0	0	116	92	0	1	0	31	0	0	0	29	0	0	23	0	0
AIR FORCE																			
Eaker AFB	10	10	0	0	0	10	0	0	1	2	7	0	0	0	0	0	0	0	0
Fort Smith MAP	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hot Springs Field	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Little Rock AFB	53	53	0	0	0	53	0	0	0	20	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	65	64	0	1	0	63	0	0	1	22	7	0	0	0	0	0	0	0	0
ARKANSAS TOTALS	282	281	0	1	116	155	0	1	1	53	7	0	0	29	0	0	23	0	0
CALIFORNIA																			
ARMY																			
AFRC Concord	7	7	0	0	6	0	0	1	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
CALIFORNIA (Continued)																			
ARMY (Continued)																			
AFRC Fresno	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Los Alamitos (ASF 28A)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Camp Roberts	38	38	0	0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	0
East Fort Baker	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Cronkite	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Hunter Liggett	21	21	0	0	0	21	0	0	0	0	0	21	0	0	0	0	0	0	0
Fort Irwin	36	36	0	0	0	36	0	0	0	0	0	16	0	0	0	0	0	0	0
Fort MacArthur	18	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Ord	166	166	0	0	0	166	0	0	0	0	3	9	0	0	4	3	0	4	3
H.F. Radio Receiver, Santa Rosa	3	3	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0
Hamilton Army Air Field	17	17	0	0	0	0	0	17	0	1	0	0	0	0	1	0	0	1	0
NG Camp Elliott	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Chinese Camp	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Oakland Army Base	7	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
Presidio of Monterey	14	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0
Presidio of San Francisco	35	35	0	0	0	35	0	0	0	0	0	31	0	0	0	0	0	0	0
Rio Vista RES Training Area	2	2	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0
Riverbank AAP	11	11	0	0	0	11	0	0	0	5	6	0	5	0	3	3	0	3	3
Sacramento AD	15	15	0	0	0	15	0	0	0	0	8	1	0	1	3	3	1	1	5
SAT COM	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Sierra Army Depot	35	35	0	0	0	35	0	0	16	0	11	8	0	0	0	3	0	0	3
Sloughouse	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bakersfield	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bell (AMSA 15)	22	22	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
CALIFORNIA (Continued)																			
ARMY (Continued)																			
USARC Camp Pendleton	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Chico	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Clovis	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC El Monte	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fort Ord (AMSA 14)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Fresno (AMSA 14-G)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Long Beach	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Los Alamitos (ECS 16)	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Los Angeles 01	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Los Angeles 02	4	4	0	0	4	0	2	0	0	0	0	0	0	0	0	0	0	[illegible]	
USARC Modesto	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Mountain View	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Norco	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Pasadena, CA	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC San Bernardino (AMSA 19G)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC San Diego	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC San Jose (AMSA 12)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC San Pablo	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Santa Ana	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Santa Barbara	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Santa Rosa	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Stanton (Garden Grove)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Sunnyvale	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Upland	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
CALIFORNIA (Continued)																			
ARMY (Continued)																			
USARC Vallejo	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Van Nuys	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Van Nuys Maintenance Shop	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	619	619	0	0	193	403	3	22	16	6	28	88	5	1	11	12	1	9	14
DEPARTMENT OF NAVY																			
CBC Port Hueneme	23	23	0	0	0	17	6	0	8	0	3	12	0	0	0	15	1	0	15
DoD Housing Facility, Novato	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FASOTRAGRUPACDET Warner Springs	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1
MCAGCC 29 Palms	28	28	0	0	0	28	0	0	0	0	28	0	0	0	0	28	0	0	28
MCAS El Toro	23	22	1	0	0	22	0	1	0	0	22	1	0	0	0	23	0	0	23
MCAS Tustin	16	15	1	0	0	6	9	0	4	1	1	9	0	0	1	10	1	0	11
MCB Camp Pendleton	26	26	0	0	0	26	0	0	0	0	26	0	0	0	0	26	1	0	26
MCLB Barstow	38	38	0	0	0	38	0	0	0	0	38	0	0	0	0	38	0	2	38
MCMWTC Bridgeport	9	9	0	0	0	9	0	0	0	0	9	0	0	0	0	9	1	0	9
MCRD San Diego	2	2	0	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2
NAF El Centro	17	17	0	0	0	2	15	0	2	0	0	15	0	0	0	15	0	1	15
NALF Crows Landing	7	7	0	0	0	2	4	0	2	0	0	4	0	0	0	4	1	0	4
NALF San Clemente Island	15	15	0	0	0	7	8	0	7	0	0	8	0	0	0	8	0	0	8
NAS Alameda	20	20	0	0	0	20	0	0	0	0	20	0	0	0	0	20	0	0	20
NAS Lemoore	17	17	0	0	0	17	0	0	0	0	17	0	0	0	0	17	1	0	18
NAS Miramar	16	10	6	0	0	10	0	6	3	0	6	7	0	0	0	13	1	0	13
NAS Moffett Field	26	26	0	0	0	0	23	3	0	0	0	22	0	0	0	21	0	3	25
NAS Moffett Field Outlying Areas	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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	Total # of Sites	Number of Sites																		
		PA				SI				RI/FS				RD			RA			
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F	
CALIFORNIA (Continued)																				
DEPARTMENT OF NAVY (Continued)																				
NAS North Island	12	12	0	0	0	7	5	0	1	0	6	5	0	0	0	11	0	4	1	
NAVFAC Big Sur	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0		
NAVFAC Centerville Beach	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0		
NAVHOSP Long Beach	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
NAVMEDCOMNWREG Oakland	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0		
NAVPETOFF San Pedro	8	8	0	0	0	3	5	0	0	0	3	5	0	0	0	8	0	0		
NAVPETRES Tupman	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0		
NAVPHIBASE Coronado	5	5	0	0	0	0	5	0	0	0	0	5	0	0	0	5	0	0		
NCS Stockton	6	6	0	0	0	6	0	0	1	0	5	0	0	0	0	5	0	[illegible]		
NESEC San Diego	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0		
NIROP Pomona	3	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0		
NIROP Sunnyvale	16	16	0	0	0	16	0	0	3	8	5	0	0	0	0	10	0	0		
NOSC Morris Dam Facility Azusa	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0		
NOSC San Diego	9	9	0	0	0	5	4	0	5	0	0	0	0	0	0	0	0	0		
NPGS Monterey	2	2	0	0	0	1	1	0	0	0	0	2	0	0	0	2	0	0		
NRTF Dixon	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0		
NS Long Beach	7	7	0	0	0	0	7	0	0	0	0	7	0	0	0	0	0	0		
NS Long Beach Navy Family Housing	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
NS San Diego	12	8	4	0	0	1	7	4	1	0	0	10	0	0	0	10	0	1		
NS T.I. Hunter's Point Annex	26	25	1	0	0	25	0	1	2	0	23	0	0	0	0	22	8	3		
NS Treasure Island	26	26	0	0	0	22	4	0	1	0	20	4	0	0	0	24	0	0		
NSB San Diego	4	4	0	0	0	1	3	0	1	0	0	2	0	0	0	0	0	0		
NSC Oakland	17	8	9	0	0	7	1	9	4	0	0	8	0	0	0	8	[illegible]			

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
CALIFORNIA (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
NSC Oakland, Alameda Annex	2	2	0	0	0	2	0	0	1	0	1	0	0	0	0	1	0	0	1
NSC Oakland, Fuel Depot, Richmond	4	4	0	0	0	0	4	0	0	0	0	4	0	0	0	4	0	0	4
NSC San Diego	7	7	0	0	0	4	3	0	4	0	0	3	0	0	0	3	0	0	3
NSGA Skaggs Island	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSY Long Beach	7	7	0	0	0	0	7	0	0	0	0	7	0	0	0	0	1	0	0
NSY Mare Island	30	27	0	3	0	26	1	3	1	0	23	3	0	0	0	18	0	3	18
NTC San Diego	3	3	0	0	0	1	2	0	1	0	0	2	0	0	0	2	0	0	2
NUWES SOCAL DET San Diego	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NWC China Lake	45	45	0	0	0	45	0	0	28	0	17	0	0	0	0	16	0	1	16
NWS Concord	30	30	0	0	0	30	0	0	7	7	16	0	0	0	7	16	0	0	23
NWS Seal Beach	68	68	0	0	0	18	27	23	14	0	4	24	0	0	0	28	0	0	28
NWS Seal Beach Corona DET	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
NWS Seal Beach Fallbrook Annex	10	10	0	0	0	4	6	0	4	0	0	5	0	0	0	5	0	0	5
OLF Imperial Beach	5	5	0	0	0	1	4	0	1	0	0	4	0	0	0	4	0	0	4
PMTC Point Mugu	18	18	0	0	0	9	9	0	3	0	6	9	0	0	0	15	0	0	15
Salton Sea Test Range	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Singer Education Div., Imperial Beach	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SWNAVFACENGCOM San Diego	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WESTNAVFACENGCOM San Bruno	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	**690**	**657**	**30**	**3**	**12**	**440**	**178**	**50**	**109**	**16**	**301**	**191**	**0**	**0**	**8**	**468**	**16**	**18**	**484**

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
CALIFORNIA (Continued)																			
AIR FORCE																			
AFP No. 19, San Diego	6	6	0	0	0	6	0	0	1	1	4	0	0	0	5	0	0	5	0
AFP No. 42, Palmdale	27	27	0	0	0	27	0	0	0	24	3	0	0	0	0	0	0	0	0
AFP No. 70, Folsom	12	1	11	0	0	1	11	0	0	0	1	0	0	0	0	0	0	0	0
Beale AFB	24	24	0	0	0	24	0	0	1	2	1	0	3	2	0	0	1	1	0
Castle AFB	33	33	0	0	0	33	0	0	0	6	15	0	4	6	0	0	6	0	0
Costa Mesa AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Crescent City AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Edwards AFB	40	0	40	0	0	0	40	0	0	0	40	0	0	0	0	0	0	0	0
Fresno ANG	4	4	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	[illegible]	[illegible]
George AFB	67	67	0	0	0	67	0	0	0	10	0	0	0	4	0	0	4	[illegible]	[illegible]
Hayward MAP	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Los Angeles AFS	33	33	0	0	0	33	0	0	0	22	2	0	0	19	0	0	10	9	0
March AFB	42	42	0	0	0	42	0	0	2	12	4	0	0	4	8	0	0	0	0
Mather AFB	69	69	0	0	0	69	0	0	10	30	5	0	8	0	0	0	0	0	0
McClellan AFB	177	157	20	0	0	157	20	0	9	0	144	0	2	0	144	0	0	144	0
Mt. Disappointment	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Mt. Laguna AFS	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Mt. Marte (ANG)	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Mr. Martell RRS	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
North Highlands AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Norton AFB	22	22	0	0	5	22	0	0	1	19	3	0	0	0	0	0	0	0	0
Onizuka AFS	5	5	0	0	0	5	0	0	5	0	4	1	0	0	0	0	0	0	0
Ontario IAP	6	5	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
Paso Robles AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]
San Diego AGS	2	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
CALIFORNIA (Continued)																			
AIR FORCE (Continued)																			
San Francisco (WRCE)	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
San Pedro Hill AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sepulveda AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Travis AFB	27	27	0	0	1	27	0	0	2	5	5	0	0	0	0	0	0	0	0
Vandenberg AFB	49	49	0	0	0	49	0	0	21	3	1	0	1	2	1	0	2	0	1
AIR FORCE TOTALS	678	580	98	0	9	565	102	2	53	134	237	1	18	37	158	0	23	159	1
DEFENSE LOGISTICS AGENCY																			
DDTC Tracy	32	32	0	0	0	32	0	0	18	2	12	0	0	2	1	11	2	1	11
DFSP Estero Bay	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1
DFSP Norwalk	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2
DFSP Ozol	2	2	0	0	0	2	0	0	0	2	0	0	0	1	1	0	1	1	0
DFSP San Pedro	2	2	0	0	0	2	0	0	0	2	0	0	0	0	0	2	0	0	2
Sharpe Army Depot	38	38	0	0	0	38	0	0	0	1	37	0	1	0	2	35	2	0	35
DEFENSE LOGISTICS AGENCY TOTALS	77	77	0	0	0	77	0	0	18	7	52	0	1	3	4	51	5	2	51
CALIFORNIA TOTALS	2,064	1,933	128	3	214	1,485	283	74	196	163	618	280	24	41	181	531	45	188	550
COLORADO																			
ARMY																			
AFRC Boulder	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Fort Carson	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fitzsimmons Army Med Center	25	25	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Carson	48	48	0	0	0	48	0	0	0	0	23	0	0	0	0	0	0	0	0
Pueblo Depot Activity	35	35	0	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
COLORADO (Continued)																			
ARMY (Continued)																			
Rocky Mountain Arsenal	155	155	0	0	0	155	0	0	0	153	2	0	0	1	153	0	1	153	0
USARC Aurora 01	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Aurora 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Commerce City (AMSA 22)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Denver	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Carson (ECS 42)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Collins (AMSA 21G)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pueblo	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	0
ARMY TOTALS	302	302	0	0	39	263	0	0	0	153	25	0	0	1	153	0	1	[illegible]	
DEPARTMENT OF NAVY																			
NAVPETRES Anvil Points Facility	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
DEPARTMENT OF NAVY TOTALS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR FORCE																			
AFP PJKS	44	44	0	0	0	44	0	0	0	34	0	0	7	12	6	8	12	6	
Buckley ANG	13	13	0	0	0	13	0	0	0	13	0	0	0	11	2	0	0	0	
Cheyenne Mountain	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
Greely AGS	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
Lowry AFB	15	15	0	0	0	15	0	0	6	0	9	0	0	0	0	0	0	0	
Peterson	9	9	0	0	0	9	0	0	7	8	1	0	2	0	0	0	0	0	
Punkin Center AGS	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	

(C[illegible]

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
COLORADO (Continued)																			
AIR FORCE (Continued)																			
USAF Academy	11	11	0	0	2	11	0	0	3	3	8	0	1	0	0	0	0	0	0
AIR FORCE TOTALS	97	93	4	0	2	92	4	0	16	58	18	2	10	23	9	10	12	7	12
COLORADO TOTALS	400	396	4	0	42	355	4	0	16	211	43	2	10	24	162	10	13	160	12
CONNECTICUT																			
ARMY																			
Family Housing Manchester, CT 25	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Family Housing Milford, CT 17	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Family Housing New Brittain, CT 57	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Family Housing Portland, CT 36	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Family Housing Shelton, CT 74	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Family Housing Westport, CT 73	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Stratford Army Engine Plant	9	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bridgeport	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Danbury	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC East Windsor	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fairfield	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hartford	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Middleton	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Milford	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Haven	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Waterbury	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
CONNECTICUT (Continued)																			
ARMY (Continued)																			
USARC Windsor Locks (AMSA 72G)	11	11	0	0	8	0	0	3	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	78	78	0	0	62	9	0	9	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																			
NSB New London	13	13	0	0	0	13	0	0	0	0	13	0	0	0	0	11	1	0	11
NUSC East Lyme	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NUSC New London	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NWIRP Bloomfield	6	6	0	0	0	0	6	0	0	0	0	6	0	0	0	6	0	0	6
DEPARTMENT OF NAVY TOTALS	21	21	0	0	1	14	6	0	0	0	13	6	0	0	0	17	1	[illegible]	[illegible]
AIR FORCE																			
Bradley ANG	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Orange AGS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	3	3	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0
CONNECTICUT TOTALS	102	102	0	0	63	26	6	9	0	0	15	6	0	0	0	17	1	0	17
DELAWARE																			
ARMY																			
NG New Castle	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
Nike Site, Rehoboth	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
USARC Dover	5	5	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	[illegible]
USARC Lewes	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	[illegible]
USARC New Castle	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
USARC Seaford	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
DELAWARE (Continued)																			
ARMY (Continued)																			
USARC Wilmington, DE	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	23	23	0	0	18	2	0	3	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																			
NAVRESFAC Lewes	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE																			
Dover AFB	56	56	0	0	0	56	0	0	25	2	25	0	0	0	0	0	0	0	0
Greater Wilmington APT (DE ANG)	6	6	0	0	0	6	0	0	1	1	4	0	0	1	0	0	0	1	0
AIR FORCE TOTALS	62	62	0	0	0	62	0	0	26	3	29	0	0	1	0	0	0	1	0
DELAWARE TOTALS	86	86	0	0	19	64	0	3	26	3	29	0	0	1	0	0	0	1	0
DISTRICT OF COLUMBIA																			
ARMY																			
Camp Simms	1	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0
Fort McNair	7	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
Walter Reed Army Medical Center	3	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	11	11	0	0	0	8	0	3	0	0	0	0	0	1	0	0	1	0	0
DEPARTMENT OF NAVY																			
COMNAVDIST Washington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
NAVSECSTA Washington DC	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
DISTRICT OF COLUMBIA (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
NS Anacostia	3	3	0	0	0	1	2	0	0	0	1	2	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	6	6	0	0	2	1	2	1	0	0	1	2	0	0	0	0	0	1	1
AIR FORCE																			
Bolling AFB	6	6	0	0	0	5	1	0	0	2	4	0	0	1	0	0	0	1	0
AIR FORCE TOTALS	6	6	0	0	0	5	1	0	0	2	4	0	0	1	0	0	0	1	0
DISTRICT OF COLUMBIA TOTALS	23	23	0	0	2	14	3	4	0	2	5	2	0	2	0	0	1	2	1
FLORIDA																			
ARMY																			
AFRC Daytona Beach	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARRCOM Orlando Facility	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Aviation Supply Facility, 49-A	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Camp Blanding	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Coral Gables	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Lauderdale (NININGER)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Gainesville (1300)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Gainesville (Layton)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hollywood (AFA 48A)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Jacksonville (Burpee)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jacksonville (Milam)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jacksonville (Phillips)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kissimmee	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]
USARC Lakeland	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
FLORIDA (Continued)																			
ARMY (Continued)																			
USARC Melbourne	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Miami (AMSA 47G)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Milton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ocala	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Orlando (ASF 49)	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Orlando (ECS McCoy Annex)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Orlando (McCoy 03)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Orlando (Orange County)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Palatka	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Palatka (AMSA 55W)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Panama City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pensacola	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Perry	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Port Charlotte	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Petersburg (AMSA 51M)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Petersburg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Taft	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tallahassee	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tampa	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC West Palm Beach	2	2	0	0	0	2	0	0	0	0	0	0	0	2	0	0	2	0	0
USARC West Palm Beach (Babcock)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
FLORIDA (Continued)																			
ARMY (Continued)																			
USARC West Palm Beach (Gun Club)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	142	142	0	0	128	5	0	6	0	0	0	0	0	2	0	0	2	0	0
DEPARTMENT OF NAVY																			
NAS Cecil Field	19	19	0	0	0	12	0	0	0	1	18	0	0	0	0	14	0	0	1
NAS Jacksonville	47	47	0	0	0	0	47	0	0	0	0	17	0	0	0	8	1	2	[illegible]
NAS Key West	14	14	0	0	0	11	3	0	2	1	7	3	0	0	0	5	1	0	[illegible]
NAS Pensacola	38	38	0	0	0	8	1	0	0	0	36	0	0	2	0	25	2	0	2
NAS Richmond	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	
NAS Whiting Field	24	24	0	0	1	20	1	2	3	0	15	4	0	1	0	13	1	[illegible]	[illegible]
NCSC Panama City	9	9	0	0	0	9	0	0	1	0	0	8	0	0	0	6	0	0	
NRL UWS REF Det Orlando	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
NS Mayport	16	16	0	0	2	10	0	0	0	0	11	3	0	0	0	10	1	0	1
NSGA Homestead	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NSWC Det Ft. Lauderdale	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
NTC Orlando	10	10	0	0	4	6	0	0	2	0	4	0	0	0	0	4	0	0	
NTTC Pensacola	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
NUSC Ft. Lauderdale	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
NUSC West Palm Beach	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
DEPARTMENT OF NAVY TOTALS	184	184	0	0	11	77	54	2	8	2	92	35	0	3	0	85	6	2	
AIR FORCE																			
Cape Canaveral	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	
Cross City AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	
Eglin AFB	40	1	39	0	0	1	39	0	0	1	39	0	0	1	0	0	0	[illegible]	

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		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
FLORIDA (Continued)																			
AIR FORCE (Continued)																			
Ft. Lonesome AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Homestead AFB	28	28	0	0	0	28	0	0	0	8	1	0	0	1	0	0	1	0	0
Hurlburt AFB	11	11	0	0	0	11	0	0	0	0	11	0	0	0	0	11	0	0	11
Jacksonville ANG	10	10	0	0	0	8	2	0	0	0	10	0	0	0	0	8	0	0	8
MacDill AFB	55	55	0	0	0	55	0	0	0	10	2	0	0	2	0	0	2	0	0
Patrick AFB	35	35	0	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0
Tyndall AFB	29	29	0	0	0	28	0	0	16	1	25	0	0	0	1	8	0	1	8
AIR FORCE TOTALS	212	173	39	0	2	166	41	0	16	20	88	0	0	4	3	27	3	2	27
DEFENSE LOGISTICS AGENCY																			
DFSP Lynn Haven	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1
DFSP Tampa	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	2	2	0	0	0	2	0	0	1	0	1	0	0	0	0	1	0	0	1
FLORIDA TOTALS	540	501	39	0	141	250	95	8	25	22	181	35	0	9	3	113	11	4	114
GEORGIA																			
ARMY																			
AFRC Waycross	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Benning	87	87	0	0	0	87	0	0	0	0	2	0	0	0	0	1	1	0	1
Fort Gillem	5	5	0	0	0	1	0	4	0	1	0	0	0	0	0	0	0	0	0
Fort Gordon	78	78	0	0	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort McPherson	9	9	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0
Fort Stewart	85	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hunter Army Airfield	10	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
GEORGIA (Continued)																			
ARMY (Continued)																			
Hunter ILS Middle Marker	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Athens	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Augusta 02	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Carrollton	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chamblee	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Columbus (Macon Road)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Columbus (Midtown Dr.)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Dobbins AFB	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	0
USARC Dublin	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	0
USARC East Point Atlanta	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Forest Park	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Valley	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Gainesville	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Macon	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Rome	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Savannah	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tifton	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	**361**	**361**	**0**	**0**	**86**	**176**	**0**	**14**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	[illegible]
DEPARTMENT OF NAVY																			
MCLB Albany	12	12	0	0	0	12	0	0	0	0	11	1	0	0	0	12	0	0	1[illegible]
NSB Kings Bay	16	16	0	0	0	16	0	0	0	0	0	16	0	0	0	0	0	0	[illegible]
DEPARTMENT OF NAVY TOTALS	**28**	**28**	**0**	**0**	**0**	**28**	**0**	**0**	**0**	**0**	**11**	**17**	**0**	**0**	**0**	**12**	**0**	[illegible]	[illegible]

(Co[illegible]

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
GEORGIA (Continued)																			
AIR FORCE																			
AFP No. 6 Marietta	15	15	0	0	0	14	1	0	0	0	1	0	0	0	0	0	0	0	0
Dobbins AFB	7	7	0	0	0	7	0	0	2	1	4	0	0	0	0	0	0	0	0
Hunter 2	2	0	2	0	0	2	0	0	0	0	0	2	0	0	0	2	0	0	2
L.B. Wilson AD	2	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Lewis B. Wilson	5	0	5	0	0	0	5	0	0	0	0	5	0	0	0	5	0	0	5
McCollon AGS	5	0	5	0	0	0	5	0	0	0	0	5	0	0	0	5	0	0	5
McKinnon AGS	5	0	5	0	0	0	5	0	0	0	0	5	0	0	0	5	0	0	5
Moody AFB	20	20	0	0	0	20	0	0	0	2	0	0	0	2	0	0	2	0	0
Robins AFB	23	23	0	0	0	23	0	0	7	14	3	0	0	7	4	0	4	4	0
Savannah FTS ANG	4	2	2	0	0	4	0	0	2	0	2	0	0	0	0	2	0	0	2
Savannah IAP ANG	7	7	0	0	0	7	0	0	0	0	7	0	0	0	0	7	0	0	7
AIR FORCE TOTALS	95	76	19	0	0	77	16	1	11	17	17	17	0	9	4	26	6	4	26
GEORGIA TOTALS	484	465	19	0	86	281	16	15	11	18	30	34	0	9	4	39	7	4	39
GUAM																			
DEPARTMENT OF NAVY																			
NAS Agana	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2
NAVCAMS WESTPAC Guam	11	11	0	0	6	5	0	0	3	0	2	0	0	0	0	2	0	0	2
NAVMAG Guam	5	5	0	0	2	3	0	0	2	0	0	1	0	0	0	1	0	0	1
NAVREGDENCEN Guam	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	1	1
NAVSHIPREPFAC Guam	5	5	0	0	3	2	0	0	0	0	2	0	0	0	0	2	0	0	2
NS Guam	17	17	0	0	12	5	0	0	0	0	3	2	0	0	0	5	0	0	5
NSD Guam	4	4	0	0	2	2	0	0	1	0	1	0	0	0	0	1	0	0	1

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
GUAM (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
PWC Guam	3	3	0	0	0	3	0	0	0	1	2	0	0	0	1	2	1	0	3
DEPARTMENT OF NAVY TOTALS	48	48	0	0	25	23	0	0	6	1	12	4	0	0	1	16	1	1	17
AIR FORCE																			
Andersen AFB	54	54	0	0	3	51	0	0	19	6	10	0	0	1	1	0	1	1	0
AIR FORCE TOTALS	54	54	0	0	3	51	0	0	19	6	10	0	0	1	1	0	1	1	0
GUAM TOTALS	102	102	0	0	28	74	0	0	25	7	22	4	0	1	2	16	2	2	17
HAWAII																			
ARMY																			
Diamond Head Crater	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Kamehameha	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Shafter	5	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Kapalama Mil Reservation	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Kilauea Military Reservation	5	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Kipapa Army Ammo Storage	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Makua Military Reservation	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Nike Site 3 and 4	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Pohakuloa Training Area	7	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
Schofield Barracks	19	19	0	0	0	0	18	0	0	0	3	15	0	1	0	2	0	1	0
Tripler Army Medical Center	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Waiawa Gulch Storage Area	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	54	54	0	0	0	33	18	0	0	0	3	15	0	1	0	2	0	1	0

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
HAWAII (Continued)																			
AIR FORCE (Continued)																			
Hickam AFB	13	13	0	0	0	13	0	0	0	1	0	0	0	1	0	0	1	0	0
Hickam POL	12	12	0	0	0	12	0	0	0	0	12	0	0	0	0	12	0	1	11
Hilo COMM AGS	2	0	2	0	0	2	0	0	0	0	0	2	0	0	0	2	0	0	2
HQ PACAF (Hickam)	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Johnston Island	5	5	0	0	0	5	0	0	0	2	0	0	0	2	0	0	2	0	0
Kaala AFS	8	8	0	0	0	8	0	0	2	3	0	0	0	3	0	0	3	0	0
Kaena Pt Station	3	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Kahalui AGS	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2
Kokee AFS	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0
Maui AFS	13	13	0	0	0	13	0	0	0	13	0	0	0	0	0	0	0	0	0
Palehua Solar Obs	2	2	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0
Punamano AFS	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Wheeler AFB	8	8	0	0	0	8	0	0	0	0	5	0	0	0	0	5	0	0	5
AIR FORCE TOTALS	77	71	6	0	0	73	4	0	6	19	19	4	0	6	0	22	6	1	21
HAWAII TOTALS	230	224	6	0	55	143	28	0	16	20	38	34	0	8	1	56	7	2	55
IDAHO																			
ARMY																			
AFRC Idaho Falls	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Broken Kettle Training Area	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG ARCO AEC Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Bonneville	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Buhl	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Gooding	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
IDAHO (Continued)																			
ARMY (Continued)																			
NG Hailey	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Idaho Falls	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Kelly Canyon	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Kimana	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Orchard Range	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Saint Anthony	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Twin Falls City	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Boise (AMSA 3)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Coeur D'Alene	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Rexburg	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Twin Falls	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	50	50	0	0	38	12	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE																			
Boise ANG	5	5	0	0	0	5	0	0	3	0	2	0	0	0	2	0	0	0	0
Gowen Field, Boise ANG	13	13	0	0	0	13	0	0	0	0	4	0	0	2	0	4	2	0	4
Mountain Home AFB	22	22	0	0	4	22	0	0	0	4	11	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	40	40	0	0	4	40	0	0	3	4	17	0	0	2	2	4	2	0	4
IDAHO TOTALS	90	90	0	0	42	52	0	0	3	4	17	0	0	2	2	4	2	0	4
ILLINOIS																			
ARMY																			
AFRC Joliet (McDonough)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Waukegan	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Sheridan	10	10	0	0	0	7	0	3	0	1	0	0	0	1	0	0	1	0	

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ILLINOIS (Continued)																			
ARMY (Continued)																			
Joliet AAP	53	53	0	0	0	53	0	0	0	0	53	0	0	3	0	50	3	0	50
Maintenance Center, N. Riverside	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG O'Hare IAP	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG USA Training Area Joliet	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Rock Island Arsenal	31	31	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0
Savanna Depot Activity	72	72	0	0	10	60	0	0	30	0	29	0	0	0	2	0	2	2	0
St. Louis Area Support Center	40	40	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Arlington Heights	6	6	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
USARC Aurora	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Aurora (Howell Pl)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Aurora (Sullivan Rd)	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Belleville	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bloomington	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Canton, IL	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Centralia	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chicago (Bryn Mawr Ave.)	8	8	0	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Chicago (Gibson)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chicago (Kedzie Ave.)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chicago (O'Hare Field)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chicago (Pulaski)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Danville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Decatur	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ILLINOIS (Continued)																			
ARMY (Continued)																			
USARC East St. Louis	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fairfield, IL	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Sheridan (82)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Sheridan (AMSA 47)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Sheridan (N. Shore)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Galesburg	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Glenview (ASF 26)	16	16	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Harvey	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Homewood	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
USARC Joliet (Railroad)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Kankakee	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Marion, IL	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Maywood (AMSA 46)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Orland Park (AMSA 45)	21	21	0	0	20	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Peoria (AMSA 48)	11	11	0	0	10	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Peoria (Northmore)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Peru (Veterans Memorial)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Quincy	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Rockford (15th Ave.)	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Rockford (Arthur Avenue)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Rockford (First)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Scott AFB (ASF 44)	24	24	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ILLINOIS (Continued)																			
ARMY (Continued)																			
USARC Springfield, IL	4	4	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Urbana	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wood River	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	475	475	0	0	263	194	0	16	30	1	82	0	0	4	2	50	6	2	50
DEPARTMENT OF NAVY																			
Libertyville Nike Site	7	7	0	0	0	7	0	0	0	0	7	0	0	0	0	5	0	0	6
NAS Glenview	9	9	0	0	0	0	9	0	0	0	0	9	0	0	0	5	0	0	5
NTC Great Lakes	14	14	0	0	0	8	6	0	8	0	0	5	0	0	0	5	0	0	7
DEPARTMENT OF NAVY TOTALS	30	30	0	0	0	15	15	0	8	0	7	14	0	0	0	15	0	0	18
AIR FORCE																			
Capital ANG	2	2	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0
Chanute AFB	31	31	0	0	0	31	0	0	2	17	10	0	8	0	0	0	0	0	0
Greater Peoria ANG	6	6	0	0	0	6	0	0	0	1	0	0	1	0	0	0	0	0	0
O'Hare Air Reserve	14	14	0	0	0	14	0	0	8	6	0	0	4	0	0	1	0	0	1
O'Hare RTC	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Scott AFB	8	8	0	0	0	8	0	0	0	8	0	0	0	0	8	0	0	8	0
AIR FORCE TOTALS	62	61	0	1	0	59	2	1	10	32	12	0	13	0	8	1	0	8	1
ILLINOIS TOTALS	567	566	0	1	263	268	17	17	48	33	101	14	13	4	10	66	6	10	69
INDIANA																			
ARMY																			
AFRC Bloomington	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Evansville	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
INDIANA (Continued)																			
ARMY (Continued)																			
Crane Army Ammunition Activity	76	76	0	0	0	76	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Benjamin Harrison	15	15	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0
Indiana AAP	25	25	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0
Jefferson Proving Ground	37	37	0	0	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0
Newport Army Ammunition Plant	13	13	0	0	1	1	4	1	0	0	6	4	0	0	0	5	0	0	5
NG AFRTA	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Edinburg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ft. Benjamin Harrison (McGee)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ft. Wayne (Gillespie)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Gary	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Indianapolis	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jeffersonville	18	18	0	0	14	0	0	4	0	0	0	0	0	0	0	0	0	0	0
USARC Lafayette, IN	8	8	0	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Lake Station	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC North Judson	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Peru (Grissom AFB)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Richmond	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Rushville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Scottsburg	9	9	0	0	8	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC South Bend (AMSA 39)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Terre Haute	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	290	290	0	0	117	154	4	8	0	0	6	4	0	0	0	5	0	0	

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
INDIANA (Continued)																			
DEPARTMENT OF NAVY																			
NAC Indianapolis	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NMCRC Gary	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NWSC Crane	31	31	0	0	0	2	29	0	0	0	0	30	0	0	0	29	1	0	29
DEPARTMENT OF NAVY TOTALS	33	33	0	0	2	2	29	0	0	0	0	30	0	0	0	29	1	0	29
AIR FORCE																			
Fort Wayne ANG	4	4	0	0	0	1	3	0	0	1	3	0	0	0	0	0	0	0	0
Grissom AFB	11	11	0	0	0	10	1	0	1	0	10	0	0	0	0	3	0	0	2
Hulman ANG	6	6	0	0	0	2	4	0	2	0	4	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	21	21	0	0	0	13	8	0	3	1	17	0	0	0	0	3	0	0	2
DEFENSE LOGISTICS AGENCY																			
DNSC Newhaven	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0
INDIANA TOTALS	345	345	0	0	119	170	41	8	3	2	23	34	0	1	0	37	2	0	36
IOWA																			
ARMY																			
AFRC Dubuque	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Waterloo	5	5	0	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0
Fort Des Moines	9	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0
Iowa Army Ammunition Plant	43	43	0	0	0	43	0	0	0	0	43	0	0	1	1	30	1	1	30
USARC Ames	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Cedar Rapids	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
IOWA (Continued)																			
ARMY (Continued)																			
USARC Cherokee	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Creston	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Davenport	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Decorah	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Des Moines (63/64/139)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Des Moines (ASF 60)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Des Moines (Bldg. 100)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Dodge	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Garner, IA	6	6	0	0	5	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Iowa City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Middletown	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Mt. Pleasant	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Muscatine	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ottumwa	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pocahontas	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sac City	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sioux City	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Washington (AMSA 30)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Washington, IA	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	178	178	0	0	120	52	0	6	0	0	43	0	0	1	1	30	1	1	30
AIR FORCE																			
Des Moines ANG	4	4	0	0	0	4	0	0	0	4	0	0	0	0	4	0	0	4	0
Fort Dodge	1	1	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
IOWA (Continued)																			
AIR FORCE (Continued)																			
Sioux City ANG	3	3	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	8	8	0	0	0	4	4	0	0	4	4	0	0	0	5	0	0	4	0
IOWA TOTALS	186	186	0	0	120	56	4	6	0	4	47	0	0	1	6	30	1	5	30
KANSAS																			
ARMY																			
AFRC Hutchinson	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Topeka (Menninger)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Leavenworth	56	56	0	0	0	56	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Riley	31	31	0	0	0	31	0	0	0	0	2	28	0	1	0	0	4	1	0
Kansas AAP	38	38	0	0	0	36	0	2	0	0	0	25	0	0	0	0	0	0	0
NG Smokey Hill	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Sunflower AAP	31	31	0	0	0	31	0	0	0	0	11	0	0	0	0	0	0	0	0
USARC Arkansas City	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baxter Springs	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Dodge City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC El Dorado	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Emporia	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Riley (ECS 33)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ft. Leavenworth	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ft. Riley (1695)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ft. Riley (1968)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Garden City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Great Bend	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
KANSAS (Continued)																			
ARMY (Continued)																			
USARC Hays	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Independence	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kansas City	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lawrence	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lenexa	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Manhattan	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Norton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Olathe (ASF 37)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Osage City	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
USARC Osawatomie	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
USARC Parsons	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pittsburg	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Salina	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Scott City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sunflower Outdoor TRNG	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Topeka (AMSA 39)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wellington	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wichita (Wallace)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wichita 02	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	**279**	**279**	**0**	**0**	**121**	**155**	**0**	**3**	**0**	**0**	**13**	**53**	**0**	**1**	**0**	**0**	**4**	**1**	**0**
AIR FORCE																			
Forbes Field	10	10	0	0	0	10	0	0	5	5	0	0	0	0	4	0	0	4	0
McConnell AFB	26	26	0	0	0	26	0	0	3	1	9	0	2	1	0	0	1	0	[illegible]
AIR FORCE TOTALS	**36**	**36**	**0**	**0**	**0**	**36**	**0**	**0**	**8**	**6**	**9**	**0**	**2**	**1**	**4**	**0**	**1**	**4**	[illegible]

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		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
KANSAS (Continued)																			
DEFENSE LOGISTICS AGENCY																			
DIPEF Atchison	3	3	0	0	0	3	0	0	2	1	0	0	0	1	0	0	1	0	0
DEFENSE LOGISTICS AGENCY TOTALS	3	3	0	0	0	3	0	0	2	1	0	0	0	1	0	0	1	0	0
KANSAS TOTALS	318	318	0	0	121	194	0	3	10	7	22	53	2	3	4	0	6	5	0
KENTUCKY																			
ARMY																			
AFRC Hopkinsville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Lexington	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blue Grass Facility-LBAD	53	53	0	0	0	0	0	53	0	0	0	0	0	0	0	0	0	0	0
Fort Campbell	36	36	0	0	0	1	34	1	0	0	1	35	0	0	1	35	0	1	35
Fort Knox	199	199	0	0	0	199	0	0	0	0	0	0	0	0	0	0	0	0	0
Lexington Facility-LBAD	45	45	0	0	0	21	0	24	0	0	0	0	0	0	0	0	0	0	0
NG Greenville	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Somerset	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bardstown	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Beattyville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Berea	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bowling Green	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Knox (ECS 63)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Georgetown	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hardinsburg	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lebanon	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lexington (Barrow)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lexington (Blue Grass)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
KENTUCKY (Continued)																			
ARMY (Continued)																			
USARC Louisville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Louisville (Bowman Hanger 7)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Louisville (Century)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Louisville (Major)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Madisonville	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Maysville	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Owensboro	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Paducah 01	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Paducah 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pikeville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	420	420	0	0	85	223	34	78	0	0	1	35	0	0	1	35	0	1	35
DEPARTMENT OF NAVY																			
NOS Louisville	6	6	0	0	0	3	3	0	3	0	0	3	0	0	0	2	0	1	2
DEPARTMENT OF NAVY TOTALS	6	6	0	0	0	3	3	0	3	0	0	3	0	0	0	2	0	1	2
AIR FORCE																			
Standiford Field	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
KENTUCKY TOTALS	427	427	0	0	85	226	38	78	3	0	2	38	0	0	1	37	0	2	37
LOUISIANA																			
ARMY																			
Fort Polk	22	22	0	0	8	12	0	0	6	0	4	4	0	0	0	6	0	0	

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
LOUISIANA (Continued)																			
ARMY (Continued)																			
Louisiana AAP	7	7	0	0	0	7	0	0	0	0	7	0	0	1	0	6	1	0	6
New Orleans Army Base	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Pearson Ridge	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Alexandria, LA	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baton Rouge (North)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baton Rouge (Roberts)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baton Rouge (Saurage)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baton Rouge 03	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bogalusa	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bossier City	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ft. Polk (8610)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ft. Polk (ECS 17)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hammond	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Houma	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lafayette	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lake Charles	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Monroe	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Orleans (Canal Street)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Orleans (Diamond)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Orleans (Fleming)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Orleans 05 (Kenner)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Shreveport 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
LOUISIANA (Continued)																			
ARMY (Continued)																			
USARC Slidell	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	107	107	0	0	81	23	0	1	6	0	11	4	0	1	0	12	1	0	12
DEPARTMENT OF NAVY																			
NAS New Orleans	12	12	0	0	4	3	4	0	0	0	0	8	0	0	0	5	0	0	5
NSA New Orleans	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2
DEPARTMENT OF NAVY TOTALS	14	14	0	0	4	5	4	0	0	0	2	8	0	0	0	7	0	0	7
AIR FORCE																			
Barksdale AFB	32	32	0	0	0	32	0	0	9	1	0	0	0	0	1	0	0	0	[illegible]
England AFB	42	41	1	0	19	41	1	0	12	2	1	0	0	0	0	0	0	0	0
Hammond AGS	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Jackson Barracks	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2
Lake Charles AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slidell AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	80	75	5	0	21	73	5	0	21	3	1	2	0	0	1	2	0	0	3
DEFENSE LOGISTICS AGENCY																			
DNSC Baton Rouge	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
LOUISIANA TOTALS	202	197	5	0	106	102	9	1	27	3	15	14	0	1	1	21	1	0	22
MAINE																			
ARMY																			
Bangor IAP	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MAINE (Continued)																			
ARMY (Continued)																			
NG Caswell	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Riley-Bog Brook	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Auburn	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bangor	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bridgton	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Dexter	7	7	0	0	6	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Saco	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	36	36	0	0	32	3	0	1	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																			
NAS Brunswick	13	13	0	0	0	13	0	0	1	0	12	0	0	0	0	12	0	0	12
NAVCOMMU Cutler	3	3	0	0	0	0	3	0	0	0	0	3	0	0	0	3	0	0	3
NSGA Corea	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSGA Winter Harbor	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSY Portsmouth	13	13	0	0	0	13	0	0	0	0	13	0	0	0	0	12	0	0	12
DEPARTMENT OF NAVY TOTALS	31	31	0	0	2	26	3	0	1	0	25	3	0	0	0	27	0	0	27
AIR FORCE																			
Bangor ANG	2	2	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0
Loring AFB	45	45	0	0	0	45	0	0	7	3	12	0	3	2	0	0	1	1	0
South Portland	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	52	47	5	0	0	45	7	0	7	3	14	0	3	2	0	0	1	1	0
DEFENSE LOGISTICS AGENCY																			
DFSP Casco Bay	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MAINE (Continued)																			
DEFENSE LOGISTICS AGENCY (Continued)																			
DFSP Searsport	2	2	0	0	0	2	0	0	0	1	0	1	0	1	0	1	1	0	1
DEFENSE LOGISTICS AGENCY TOTALS	3	3	0	0	0	3	0	0	0	1	1	1	0	1	0	2	1	0	2
MAINE TOTALS	122	117	5	0	34	77	10	1	8	4	40	4	3	3	0	29	2	1	29
MARYLAND																			
ARMY																			
Aberdeen Proving Ground	58	58	0	0	0	58	0	0	0	0	1	56	0	0	0	1	0	0	1
Aberdeen PV GRD (Edgewood Area)	12	12	0	0	0	12	0	0	0	0	8	4	0	0	2	8	0	2	
Blossom Point Field Test Activity	26	26	0	0	0	15	0	0	4	26	0	0	22	0	0	0	0	0	0
Fort Detrick	45	45	0	0	0	45	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort George G. Meade	72	72	0	0	0	72	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Ritchie	5	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
Gaithersburg Res Facility	16	16	0	0	0	11	0	5	0	0	0	0	0	0	0	0	0	0	0
Harry Diamond Labs (Adelphi)	39	39	0	0	0	39	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Lauderick Creek Training Area	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Nike Site, Phoenix	1	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0
NG Nike Site, Wayland	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Nike Site 79, Foster	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Phoenix Mil. Res.	4	4	0	0	0	4	0	0	0	2	0	0	0	2	2	0	2	2	0
USARC Annapolis	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baltimore (Jecelin)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Baltimore (Sheridan)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Baltimore (Turner)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MARYLAND (Continued)																			
ARMY (Continued)																			
USARC Camp Springs	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Cumberland	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Curtis Bay (AMSA 83)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Curtis Bay (Brandt)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Frederick (Flair)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Gaithersburg	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greenspring	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hagerstown	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hagerstown (ASF 111)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hagerstown (Tagg-Zirkle)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Riverdale	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Rockville	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Westminster	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	368	363	0	5	87	260	0	10	4	28	10	60	22	3	4	9	3	4	9
DEPARTMENT OF NAVY																			
Bloodsworth Archipelago	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHESDIVNFEC	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
DTRESCEN Annapolis	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DTRESCEN Annapolis Bay Head Annex	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
DTRESCEN Bethesda	8	8	0	0	0	0	8	0	0	0	0	7	0	0	1	0	0	0	1
NAF Washington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAS Patuxent River	31	31	0	0	0	31	0	0	19	0	12	0	0	2	1	10	3	0	11
NAVCOMMU Cheltenham	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MARYLAND (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
NAVEODTECHCEN Indian Head	9	9	0	0	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0
NAVMEDCOM NATCAPREG Bethesda	6	6	0	0	0	0	6	0	0	0	0	6	0	0	0	6	0	0	6
NAVRECCEN Solomons	2	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
NESEA St. Inigoes	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0
NOS Indian Head	30	29	1	0	24	5	1	0	0	0	5	0	0	0	2	1	0	0	3
NRL Chesapeake Bay Detachment	8	8	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0
NRL Waldorf	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0	0	2
NRL Washington	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	
NRL Washington, Pomonkey Test Range	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
NS Annapolis	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1
NSWC White Oak	14	14	0	0	0	14	0	0	7	0	7	0	0	0	0	7	0	0	7
NTC Bainbridge	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2
NTIC Suitland	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
U.S. Naval Academy	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
NAVY TOTALS	124	122	2	0	28	74	22	0	48	0	26	15	0	2	4	29	3	0	33
AIR FORCE																			
Andrews AFB	16	16	0	0	0	16	0	0	0	16	0	0	0	0	16	0	0	16	0
HQ AFSC, Andrews	8	8	0	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0
Martin Airport ANG	15	11	4	0	0	11	4	0	1	0	10	1	0	0	0	1	0	0	1
AIR FORCE TOTALS	39	35	4	0	0	35	4	0	1	16	18	1	0	0	16	1	0	16	1

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MARYLAND (Continued)																			
DEFENSE LOGISTICS AGENCY																			
DNSC Curtis Bay	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
MARYLAND TOTALS	532	521	6	5	115	370	26	10	53	44	54	77	22	5	24	39	6	20	43
MASSACHUSETTS																			
ARMY																			
AFRC Chicopee	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Auburn	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Family Housing Hull, MA 36	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Family Housing Namant, MA 17	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Fort Devens	56	56	0	0	13	2	15	26	0	0	2	41	0	0	0	43	0	0	43
Fort Devens/Sudbury Annex	68	68	0	0	0	11	15	40	0	0	13	55	0	0	0	68	1	1	66
Natick R&D & ENGR Center	8	2	6	0	0	0	2	6	0	0	0	1	0	0	0	0	0	0	0
NG Camp Edwards	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
US Army Materials Technology Lab	19	19	0	0	0	19	0	0	0	0	19	0	0	0	0	0	0	0	0
USARC Attleboro	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Brockton (AMSA 66)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pittsfield	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Roslindale	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Taunton	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Worcester	8	8	0	0	5	0	0	3	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	210	204	6	0	66	34	32	77	0	1	34	97	0	0	0	111	1	1	109

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MASSACHUSETTS (Continued)																			
DEPARTMENT OF NAVY																			
NAS South Weymouth	8	8	0	0	0	0	8	0	0	0	0	8	0	0	0	8	0	0	[illegible]
NIROP Pittsfield	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
NSY Boston	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
NWIRP Bedford	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	[illegible]
DEPARTMENT OF NAVY TOTALS	12	12	0	0	2	2	8	0	0	0	2	8	0	0	0	10	0	0	1[illegible]
AIR FORCE																			
AFP No. 28, Everett	4	4	0	0	0	4	0	0	3	0	0	0	0	0	0	0	0	0	[illegible]
AFP No. 29, Lynn	3	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]
Barnes ANG	7	7	0	0	0	7	0	0	0	0	6	0	0	0	0	0	0	[illegible]	[illegible]
Hanscomb AFB	22	22	0	0	0	22	0	0	0	17	3	0	0	7	0	0	7	0	[illegible]
Otis ANG	78	78	0	0	0	78	0	0	0	4	55	0	0	4	8	41	2	2	41
Wellesly AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	[illegible]
Westover AFB	19	19	0	0	0	19	0	0	3	4	12	0	6	3	0	1	3	0	[illegible]
Worcester AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	[illegible]
AIR FORCE TOTALS	143	133	10	0	0	133	10	0	6	25	76	0	6	14	8	42	12	2	42
MASSACHUSETTS TOTALS	365	349	16	0	68	169	50	77	6	26	112	105	6	14	8	163	13	3	161
MICHIGAN																			
ARMY																			
AFRC Saginaw	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
Custer RFTA	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
Detroit Arsenal	15	15	0	0	0	15	0	0	0	0	0	15	0	0	0	0	0	0	[illegible]
Keweenaw Field Station	5	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MICHIGAN (Continued)																			
ARMY (Continued)																			
Lima Army Tank Center	16	16	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Camp Grayling Airfield	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
NG Fort Custer Recreation Area	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Pontiac Storage Activity	7	7	0	0	0	7	0	0	0	0	0	7	0	0	0	0	0	0	0
Tank-Automotive Command Activity	10	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ann Arbor	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bad Axe	5	5	0	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0
USARC Battle Creek (AMSA 42)	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Bay City	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Detroit	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Flint	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fraser	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Grand Rapids	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Inkster	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jackson	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kalamazoo	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Lansing (AMSA 40, SUB1)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Livonia (AMSA 40)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Muskegon (AMSA 43)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Muksegon (Parslow)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pontiac (Featherstone)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Romulus	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Southfield	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MICHIGAN (Continued)																			
ARMY (Continued)																			
USARC Traverse City (AMSA 34)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	157	157	0	0	95	56	0	6	0	1	0	22	0	0	1	0	0	1	0
AIR FORCE																			
Arkabulta Annex	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
K.I. Sawyer	16	16	0	0	0	16	0	0	3	1	10	0	0	1	0	0	1	0	0
Phelps-Collins ANG	19	19	0	0	0	19	0	0	7	0	10	0	0	0	0	10	0	0	10
Selfridge ANG	11	11	0	0	0	11	0	0	0	0	9	0	0	0	0	9	0	0	9
W.K. Kellog Regional Airport	6	6	0	0	0	6	0	0	0	0	6	0	0	0	0	6	0	0	[illegible]
Wurtsmith AFB	30	30	0	0	0	30	0	0	4	1	0	0	4	1	0	0	1	0	[illegible]
AIR FORCE TOTALS	84	82	2	0	0	82	2	0	14	2	35	0	4	2	0	25	2	0	25
DEFENSE LOGISTICS AGENCY																			
DFSP Escanaba	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1
MICHIGAN TOTALS	242	240	2	0	95	139	2	6	14	3	36	22	4	2	1	26	2	1	26
MINNESOTA																			
ARMY																			
AFRC Rochester	9	9	0	0	7	0	0	2	0	0	0	0	0	0	0	0	0	0	0
AFRC St. Cloud	3	3	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Twin Cities AAP	19	19	0	0	0	18	0	1	0	0	19	0	0	1	8	9	2	8	9
USARC Brainerd	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Buffalo	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MINNESOTA (Continued)																			
ARMY (Continued)																			
USARC Cambridge	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Cannon Falls	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Duluth	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Faribault (Beebe)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fergus Falls	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Snelling (AMSA 22)	35	35	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Le Sueur	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Mankato	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Marshall	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Prague	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Paynesville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC So. International Falls	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Joseph (AMSA 23)	10	10	0	0	9	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Wabasha	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Walker	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Willmar	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Winona	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Winthrop	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Worthington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	178	178	0	0	151	18	0	9	0	0	19	0	0	1	8	9	2	8	9
DEPARTMENT OF NAVY																			
ASTROGRPDET Bravo	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NIROP Fridley	5	5	0	0	0	5	0	0	1	0	4	0	0	0	0	4	2	0	4

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MINNESOTA (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
NIROP St. Paul	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	8	8	0	0	1	7	0	0	1	0	4	0	0	0	0	4	2	0	4
AIR FORCE																			
Duluth IAP	26	26	0	0	0	23	3	0	4	1	5	0	0	1	0	0	1	0	0
Minn. St. Paul IAP	12	12	0	0	0	12	0	0	2	2	6	0	0	2	1	0	0	3	0
Minn. St. Paul ANG	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	39	38	1	0	0	35	3	0	6	3	11	0	0	3	1	0	1	3	0
MINNESOTA TOTALS	225	224	1	0	152	60	3	9	7	3	34	0	0	4	9	13	5	11	[illegible]
MISSISSIPPI																			
ARMY																			
AFRC Jackson	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mississippi AAP	46	46	0	0	0	0	0	46	0	0	0	0	0	0	0	0	0	0	0
NG Camp McCain	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Brookhaven	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greenville, MS	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greenwood (AMSA 144)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Gulfport (Hickey)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Hattiesburg	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jackson (Scott)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jackson (Terry Road)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Laurel	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lyon (Clarksdale)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MISSISSIPPI (Continued)																			
ARMY (Continued)																			
USARC Meridian	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Natchez	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pascagoula 02	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Starkville	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tupelo	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Vicksburg 01	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Vicksburg 03	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Vicksburg 04	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	136	136	0	0	87	1	0	48	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																			
CBC Gulfport	9	9	0	0	1	8	0	0	0	0	8	0	0	0	0	3	0	0	3
NAS Meridian	4	4	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	13	13	0	0	1	8	4	0	0	0	8	4	0	0	0	3	0	0	3
AIR FORCE																			
A.C. Thompson	6	6	0	0	0	6	0	0	0	0	2	4	0	0	0	5	0	0	5
Allen	5	5	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0
Bay St. Louis	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Columbus AFB	27	27	0	0	0	27	0	0	12	10	0	0	4	2	0	0	0	2	0
Gulfport NCBC	4	4	0	0	0	1	3	0	0	1	3	0	0	1	0	0	1	0	0
Keesler AFB	22	22	0	0	0	22	0	0	0	12	0	1	0	0	0	11	4	0	8
Key Field ANG	10	10	0	0	0	0	10	0	0	0	10	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	75	75	0	0	0	57	18	0	12	23	20	5	4	3	0	16	5	2	1
MISSISSIPPI TOTALS	224	224	0	0	88	66	22	48	12	23	28	9	4	3	0	19	5		

(Continued)

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	Total # of Sites	Number of Sites																
		PA				SI				RI/FS				RD			RA	
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U
MISSOURI																		
ARMY																		
Camp Clark	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Fort Leonard Wood	51	51	0	0	0	51	0	0	0	0	1	50	0	0	0	0	0	0
Gateway AAP	10	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0
Lake City AAP	35	35	0	0	0	35	0	0	0	0	35	0	0	0	0	35	7	0
NG Nike Site 30	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
St. Louis AAP	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
St. Louis Ordnance Plant	17	17	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bethany	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Cape Griardeau	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Columbia	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Farmington	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Leonard Wood (1350)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Leonard Wood (ECS 66)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hannibal	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Independence, MO	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jefferson City	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Joplin	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kirksville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kirksville (Grim-Smith)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Maryville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Poplar Bluff	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Richards Gebaur	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Rolla	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MISSOURI (Continued)																			
ARMY (Continued)																			
USARC Springfield	16	16	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Charles	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Louis (AMSA 55)	19	19	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Louis (Hampton)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Joseph	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Louis 03	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Washington	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weldon Spring Chemical Plant	28	28	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	1	0
ARMY TOTALS	254	254	0	0	111	115	0	0	0	0	38	50	0	0	1	35	7	[illegible]	[illegible]
DEPARTMENT OF NAVY																			
NPRO St. Louis	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE																			
Jefferson Barracks	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Lambert Field (St. Louis)	2	2	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0
Richards Gebaur	7	7	0	0	0	7	0	0	1	6	0	0	2	0	1	0	0	0	0
Rosecrans Memorial Airport	4	4	0	0	0	4	0	0	0	4	0	0	0	0	0	4	0	0	4
Whiteman AFB	18	18	0	0	0	17	0	0	10	5	7	0	0	0	1	0	0	1	[illegible]
AIR FORCE TOTALS	33	31	2	0	0	28	4	0	11	15	9	0	2	0	2	4	0	1	[illegible]
MISSOURI TOTALS	288	286	2	0	112	143	4	0	11	15	47	50	2	0	3	39	7	2	3

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
MONTANA																			
ARMY																			
Fort Missoula	2	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
NG Limestone Hills	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Billings (AMSA 5-G)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bozeman	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Butte	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Great Falls	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Helena	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Helena (ECS 6)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kalispell	8	8	0	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	48	48	0	0	43	1	0	4	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE																			
Great Falls ANG (Montana ANG)	8	8	0	0	0	0	8	0	0	0	8	0	0	0	8	0	0	0	0
Harve AFS, MT	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Malmstrom	21	21	0	0	0	21	0	0	8	10	0	0	2	1	0	0	1	0	0
AIR FORCE TOTALS	30	30	0	0	0	22	8	0	8	11	8	0	2	2	8	0	1	1	0
MONTANA TOTALS	78	78	0	0	43	23	8	4	8	11	8	0	2	2	8	0	1	1	0
NEBRASKA																			
ARMY																			
Cornhusker AAP	65	65	0	0	0	64	0	0	0	30	34	0	0	58	0	6	58	0	7
NG Camp Ashland	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Hasting	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Lincoln Support Facility	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEBRASKA (Continued)																			
ARMY (Continued)																			
NG Mead	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Stanton	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Stapleton	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Columbus	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Fairbury	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fremont	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Grand Island	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hastings	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kearney	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lincoln	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	
USARC McCook	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Meade (WET)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC North Platte	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC North Platte (AMSA 36)	11	11	0	0	10	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Omaha (Ft. Omaha)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Omaha (Woolworth St.)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Plattsmouth	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Syracuse	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wymore	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	122	122	0	0	48	71	0	2	0	30	34	0	0	58	0	6	58	0	7
DEPARTMENT OF NAVY																			
NMCRC Omaha	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEBRASKA (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
NRC Lincoln	2	2	0	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2
DEPARTMENT OF NAVY TOTALS	3	3	0	0	1	0	2	0	0	0	0	2	0	0	0	2	0	0	2
AIR FORCE																			
Lincoln ANG	10	10	0	0	0	9	1	0	3	0	1	6	0	0	0	6	0	0	6
Offutt AFB	21	21	0	0	0	21	0	0	1	3	18	0	0	0	3	0	0	3	0
AIR FORCE TOTALS	31	31	0	0	0	30	1	0	4	3	19	6	0	0	3	6	0	3	6
NEBRASKA TOTALS	156	156	0	0	49	101	3	2	4	33	53	8	0	58	3	14	58	3	15
NEVADA																			
ARMY																			
AFRC Las Vegas	11	11	0	0	9	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Hawthorne Army Ammunition Plant	78	78	0	0	0	78	0	0	0	0	1	14	0	0	0	0	0	0	0
NG Indian Springs Range	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Reno	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	91	91	0	0	9	80	0	2	0	0	1	14	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																			
NAS Fallon	27	27	0	0	0	27	0	0	6	0	21	0	0	0	0	21	0	0	21
DEPARTMENT OF NAVY TOTALS	27	27	0	0	0	27	0	0	6	0	21	0	0	0	0	21	0	0	21
AIR FORCE																			
Nellis	59	59	0	0	1	59	0	0	22	9	1	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEVADA (Continued)																			
AIR FORCE (Continued)																			
Reno Cannon IAP (Nevada ANG)	12	12	0	0	0	1	11	0	0	1	11	0	0	1	0	0	0	1	0
AIR FORCE TOTALS	71	71	0	0	1	60	11	0	22	10	12	0	0	1	0	0	0	1	0
NEVADA TOTALS	189	189	0	0	10	167	11	2	28	10	34	14	0	1	0	21	0	1	21
NEW HAMPSHIRE																			
ARMY																			
Cold Regions Research and Eng Lab	18	18	0	0	0	16	2	0	0	1	17	0	0	0	1	1	0	0	2
NG Hopington West	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Keene	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]
USARC Londonderry	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Manchester	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Rochester	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	40	40	0	0	21	17	2	0	0	1	17	0	0	0	1	1	0	0	2
AIR FORCE																			
New Boston AFS	14	14	0	0	0	14	0	0	7	13	0	0	5	1	0	0	1	0	0
Pease AFB	35	35	0	0	0	35	0	0	0	6	6	0	0	1	0	0	1	0	0
AIR FORCE TOTALS	49	49	0	0	0	49	0	0	7	19	6	0	5	2	0	0	2	0	0
DEFENSE LOGISTICS AGENCY																			
DFSP Newington	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1
NEW HAMPSHIRE TOTALS	90	90	0	0	21	67	2	0	7	21	23	0	5	2	1	2	2	0	3

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEW JERSEY																			
ARMY																			
AFRC Red Bank (Monmouth)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARDEC (Picatinny Arsenal)	87	87	0	0	0	87	0	0	0	0	51	36	0	3	0	84	0	1	86
Brittin USARC	3	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
Eradcom Flight Test Activity	3	3	0	0	0	3	0	0	0	0	0	0	0	0	0	3	0	0	3
Fort Dix	20	20	0	0	0	19	0	0	6	5	8	0	4	0	1	8	1	0	9
Fort Momouth	9	9	0	0	0	5	0	4	0	0	0	0	0	0	0	0	0	0	0
Military Ocean Terminal, Bayonne	35	35	0	0	0	33	0	0	25	1	9	0	1	0	0	9	0	0	9
Pedricktown Support Facility	5	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
Storck USARC, Northfield	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stryker USARC, Trenton	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Caven Point	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Edison (Kilmer)	14	14	0	0	13	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARAC Edison (Weigel)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lodi	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Mount Freedom	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Newark	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	212	212	0	0	49	147	0	13	31	6	68	36	5	3	1	104	1	1	107
DEPARTMENT OF NAVY																			
NAEC Lakehurst	45	45	0	0	0	45	0	0	2	0	43	0	0	0	0	30	4	0	30
NAPC Trenton	9	9	0	0	0	9	0	0	0	0	9	0	0	0	0	9	0	0	9
NWS Earle Colts Neck	29	29	0	0	0	13	16	0	2	0	11	16	0	0	0	11	0	0	11
DEPARTMENT OF NAVY TOTALS	83	83	0	0	0	67	16	0	4	0	63	16	0	0	0	50	4	0	50

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEW JERSEY (Continued)																			
AIR FORCE																			
Atlantic City Apt	6	6	0	0	0	5	1	0	0	0	6	0	0	0	0	5	0	0	5
Coyle ANG Training Annex	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2
McGuire AFB	23	23	0	0	0	23	0	0	0	7	0	0	1	0	0	0	0	0	0
Warren Grove	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	33	29	4	0	0	28	5	0	0	7	6	2	1	0	0	7	0	0	7
DEFENSE LOGISTICS AGENCY																			
DNSC Somerville	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
DEFENSE LOGISITCS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NEW JERSEY TOTALS	329	325	4	0	49	243	21	13	35	13	137	54	6	3	1	161	5	[illegible]	
NEW MEXICO																			
ARMY																			
Fort Wingate	18	18	0	0	0	18	0	0	0	0	0	8	0	0	0	0	0	0	0
NG Carlsbad	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Demming	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Sante Fe	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Taos	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Tucumcari	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Walker Annex	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Alburquerque	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Alburquerque (Jenkins)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Artesia	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Las Cruces	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Roswell	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEW MEXICO (Continued)																			
ARMY (Continued)																			
USARC Sante Fe	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Silver City	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White Sands Missile Range	73	73	0	0	0	73	0	0	0	0	0	7	0	0	0	0	0	0	0
ARMY TOTALS	121	121	0	0	23	97	0	1	0	0	0	15	0	0	0	0	0	0	0
AIR FORCE																			
AFP No. 83, Alburquerque	6	6	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0
Cannon AFB	22	22	0	0	0	22	0	0	6	22	0	0	0	2	3	3	1	3	3
Holloman AFB	53	51	2	0	0	49	4	0	0	3	4	0	0	3	1	0	0	3	1
Kirtland AFB	55	55	0	0	0	55	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	136	134	2	0	0	132	4	0	6	25	10	0	0	5	4	3	1	6	4
NEW MEXICO TOTALS	257	255	2	0	23	229	4	1	6	25	10	15	0	5	4	3	1	6	4
NEW YORK																			
ARMY																			
AFRC Albany	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Ft. Wadsworth	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Horseheads	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Drum	70	70	0	0	0	65	3	1	0	1	3	1	0	0	0	9	0	0	9
Fort Hamilton	5	5	0	0	0	0	1	4	0	0	1	0	0	0	1	0	0	1	0
Fort Tilden	3	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
Fort Totten	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
NG Malone	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Olean	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Rochester	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEW YORK (Continued)																			
ARMY (Continued)																			
NG Ticonderoga	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Niagara Falls AFRC	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Nike Site 24	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Roosevelt USARC, Hempstead	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Seneca AD	32	32	0	0	0	7	25	0	0	0	2	0	0	0	0	1	0	0	1
Stewart Army Sub Post (USMAWP)	8	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0
USA Bellmore Maint. Facility	7	7	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0
USARC Amherst	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Amityville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]
USARC AMSA 9	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Batavia	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bronx (Patterson)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bronx (Yonkers)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bullville	11	11	0	0	10	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Canandaigua	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Canton	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Corning	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Elizabethtown	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Elmira	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Gerry	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Glen Falls	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Horseheads (AMSA 2G)	15	15	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ithaca	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]
USARC Kingston	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEW YORK (Continued)																			
ARMY (Continued)																			
USARC Little Falls	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Liverpool	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Malone	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Massena	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Massena (ESC-1 Subshop A)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Medina (Shelby)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Newburgh (ASF 10)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Newburgh (Dupont)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Newburgh (Stewart Field)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Niagara Falls (AMSA 5)	25	25	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARAC Ogdensburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Olean	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Orangeburg, NY	18	18	0	0	17	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Oswego	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Penn Yan	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Plattsburg	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Poughkeepsie	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Queens	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Rocky Point	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Schenectady (AMSA 8)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Schenectady (Bradt)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Syracuse (ASF 6)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tappan	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEW YORK (Continued)																			
ARMY (Continued)																			
USARC Tonawanda	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Utica	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Watertown	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wayland	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Webster (AMSA 7G)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Watervliet Arsenal	23	23	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0
West Point Military Academy	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Youngstown Training	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	486	486	0	0	319	114	30	22	0	1	6	1	0	0	1	10	0	1	10
DEPARTMENT OF NAVY																			
NAS Floyd Bennett Field	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NIROP Rochester	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NMCRC Fort Schuyler	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NS New York	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NS New York Stapleton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NS New York Staten Island	3	3	0	0	0	0	0	2	0	0	0	2	0	0	0	2	0	0	3
NUSC Fishers Island	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
NWIRP Bethpage	3	3	0	0	0	3	0	0	0	0	3	0	0	0	0	3	0	0	3
NWIRP Calverton	9	9	0	0	0	2	7	0	2	0	0	7	0	0	0	7	0	0	7
DEPARTMENT OF NAVY TOTALS	21	21	0	0	5	5	8	2	2	0	3	9	0	0	0	12	0	0	13
AIR FORCE																			
AFP No. 38, Lewiston	10	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
AFP No. 59, Johnson City	4	4	0	0	0	4	0	0	0	2	2	0	0	0	0	0	0	[illegible]	[illegible]

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NEW YORK (Continued)																			
AIR FORCE (Continued)																			
Griffiss AFB	43	43	0	0	0	43	0	0	2	11	5	0	0	10	0	0	10	0	0
Hancock Field	15	15	0	0	0	14	1	0	6	9	1	0	1	0	0	0	0	0	0
Niagara Falls IAP	14	14	0	0	0	14	0	0	0	14	0	0	1	2	0	10	2	0	10
Plattsburgh AFB	25	25	0	0	0	25	0	0	3	9	8	0	0	1	0	0	0	1	0
Riverhead City AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roslyn AGS	5	0	5	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0
Schenectady Airport ANG	4	4	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0
Stewart ANG	2	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	0	2
Suffolk ANG	9	9	0	0	0	9	0	0	0	3	6	0	0	0	0	0	0	0	0
Suffolk County (Former)	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
Utica AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Youngstown Test (RADC)	10	9	1	0	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	144	138	6	0	2	132	10	0	11	49	43	0	2	13	3	10	12	2	12
DEFENSE LOGISTICS AGENCY																			
DFSP Verona	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1
DNSC Scotia	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	1	0	0	1
NEW YORK TOTALS	653	647	6	0	326	253	48	24	13	50	54	10	2	13	4	33	12	3	36
NORTH CAROLINA																			
ARMY																			
AFRC Asheboro	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Greensboro (Rives)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
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State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NORTH CAROLINA (Continued)																			
ARMY (Continued)																			
Camp Mackall	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Bragg	26	26	0	0	0	26	0	0	0	0	26	0	0	0	0	0	0	0	0
Military Ocean Terminal, Sunny Point	14	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0
NG OMS 17	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Tarheel Army Missile Plant	19	19	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Albemarle	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Asheville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Brevard	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Charlotte	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]
USARC Concord	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Durham	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Durham 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Bragg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Garner	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Graham	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greensboro	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greenville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hickory	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC High Point	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kinston	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lumberton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Morehead City	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Raleigh 01	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Rocky Mount	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]

(Continued)

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State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NORTH CAROLINA (Continued)																			
ARMY (Continued)																			
USARC Salisbury	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wilmington	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Wilmington (AMSA 126-G)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wilson	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wilson, NC	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Winston-Salem	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Winston-Salem (King)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Winston-Salem 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	156	156	0	0	91	64	0	1	0	0	26	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																			
MCAS Cherry Point	34	34	0	0	0	34	0	0	13	1	20	0	1	0	0	13	1	0	13
MCB Camp LeJeune	82	82	0	0	0	64	13	5	45	0	16	10	0	0	0	25	2	0	24
DEPARTMENT OF NAVY TOTALS	116	116	0	0	0	98	13	5	58	1	36	10	1	0	0	38	3	0	37
AIR FORCE																			
Badin AGS	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Douglas IAP	2	2	0	0	0	1	1	0	0	0	0	2	0	0	0	2	0	0	2
Pope AFB	8	8	0	0	0	8	0	0	0	3	0	0	0	0	0	0	0	0	0
Seymour-Johnson AFB	22	22	0	0	0	22	0	0	0	21	0	0	0	0	7	6	0	3	6
AIR FORCE TOTALS	34	32	2	0	0	31	3	0	0	24	0	2	0	0	7	8	0	3	8
NORTH CAROLINA TOTALS	306	304	2	0	91	193	16	6	58	25	62	12	1	0	7	46	3	3	45

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
NORTH DAKOTA																			
ARMY																			
NG Garrison	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Williston	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Stanley R. Mickelson, SFG RSL 1	2	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Bismarck (AMSA 23)	16	16	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fargo	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Grand Forks	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	34	34	0	0	30	2	0	2	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE																			
Grand Forks AFB	6	6	0	0	0	6	0	0	1	1	2	0	0	1	0	0	1	0	0
Hector ANG (ND ANG)	10	10	0	0	0	6	4	0	2	0	4	0	0	0	0	0	0	0	0
Minot AFB	8	8	0	0	0	8	0	0	1	0	3	0	0	0	0	0	0	0	0
Watford City AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	25	25	0	0	1	20	4	0	4	1	9	0	0	1	0	0	1	0	0
DEFENSE LOGISTICS AGENCY																			
DFSP Grand Forks	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1
NORTH DAKOTA TOTALS	60	60	0	0	31	23	4	2	4	1	10	0	0	1	0	1	1	0	1
OHIO																			
ARMY																			
NG Blue Rock	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Camp Sherman	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continue

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
OHIO (Continued)																			
ARMY (Continued)																			
NG Nike Site 78	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Ravenna AAP	31	31	0	0	13	0	0	18	0	0	0	0	0	0	0	0	0	0	0
USARC Akron (Schaffner)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Akron (Woodford)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bellaire	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bryan (AMSA 72G SUB 1)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Cadiz	8	8	0	0	7	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Canton 01	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Cincinnati (Morrow)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Columbus (300)	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Columbus (AMSA 56)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Columbus (ASF 33)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Columbus (Whitehall)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Dayton	9	9	0	0	6	0	0	3	0	0	0	0	0	0	0	0	0	0	0
USARC Dayton (DESC)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Delaware	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Fremont, OH	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Jamestown	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kenton	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kings Mills (AMSA 59)	11	11	0	0	7	0	0	4	0	0	0	0	0	0	0	0	0	0	0
USARC Lima (AMSA 58 SUB 1)	11	11	0	0	10	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Lima (Faze)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Mansfield	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

Table C-1
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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
OHIO (Continued)																			
ARMY (Continued)																			
USARC Marietta	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Marion	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Milan	13	13	0	0	12	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Parma (Mote)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Perrysburg (AMSA 72)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Portsmouth	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sharonville	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Springfield, OH	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Toledo (Phillips)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	0
USARC Troy, OH	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	0
USARC Warren	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Warrensville Heights	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wooster	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Youngstown (Kefurt)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Zanesville	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	255	255	0	0	219	3	0	33	166	0	0	0	0	0	0	0	0	0	
DEPARTMENT OF NAVY																			
NWIRP Toledo	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
DEPARTMENT OF NAVY TOTALS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
AIR FORCE																			
AFP No. 36, Evandale	33	33	0	0	0	20	13	0	0	0	4	0	0	0	0	0	0	0	
AFP No. 85, Columbus	9	9	0	0	0	9	0	0	0	4	4	0	0	0	3	0	0	[illegible]	
Blue Ash ANG	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	[illegible]	

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
OHIO (Continued)																			
AIR FORCE (Continued)																			
Camp Perry AGS	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
Mansfield Lahm Airport ANG	8	8	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0
Newark AFS	10	10	0	0	0	10	0	0	8	0	2	0	0	0	0	0	0	0	0
Rickenbacker ANG	33	33	0	0	0	16	17	0	1	1	17	0	0	1	0	0	0	1	0
Springfield-Beckley Municipal Airport	6	6	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0
Toledo Express Airport ANG	9	9	0	0	0	0	8	0	0	0	8	1	0	0	0	1	0	0	1
Wright-Patterson AFB	63	55	8	0	0	55	8	0	5	1	57	0	0	0	3	0	0	3	0
Youngstown	5	5	0	0	0	5	0	0	1	0	2	0	0	0	0	0	0	0	0
Zanesville AGS	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2
AIR FORCE TOTALS	181	169	12	0	0	115	65	0	15	6	109	3	0	1	6	3	0	5	3
DEFENSE LOGISTICS AGENCY																			
DCSC Columbus	24	24	0	0	0	24	0	0	22	1	1	0	0	1	0	1	0	1	1
DESC Dayton	6	6	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0
DFSP Cincinnati	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
DEFENSE LOGISTICS AGENCY TOTALS	31	31	0	0	0	31	0	0	29	1	1	0	0	1	0	1	0	1	1
OHIO TOTALS	468	456	12	0	220	149	65	33	44	7	110	3	0	2	6	4	0	6	4
OKLAHOMA																			
ARMY																			
AFRC Broken Arrow (AMSA 20)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Midwest City	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Camp Gruber	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Sill	47	47	0	0	0	31	16	0	0	1	0	46	0	0	1	16	0	0	17

(Continued)

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State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
OKLAHOMA (Continued)																			
ARMY (Continued)																			
USARC Guymon	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lawton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC McAlester	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Miami	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Muskogee	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Norman	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Norman 02	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Oklahoma City (50th Street)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Oklahoma City (Krowse)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Oklahoma City (Perez)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Okmulgee	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ponca City	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Shawnee	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Stigler	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Stillwater	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tulsa (Reese)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tulsa 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	217	217	0	0	105	96	16	0	0	1	0	46	0	0	1	16	0	0	17
AIR FORCE																			
AFP No. 3, Tulsa	14	14	0	0	0	14	0	0	0	10	2	0	0	0	0	3	0	0	3
Altus AFB	10	10	0	0	0	10	0	0	0	0	10	0	0	0	0	10	0	0	10
Oklahoma City ANG	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Tinker AFB	33	33	0	0	0	33	0	0	3	21	9	0	2	16	5	0	16	5	0

(Continued)

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State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
OKLAHOMA (Continued)																			
AIR FORCE (Continued)																			
Tulsa IAP	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Vance AFB	21	21	0	0	0	21	0	0	3	4	10	0	4	0	0	0	0	0	0
Will Rogers World Airport	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	82	82	0	0	0	80	1	0	6	35	31	0	6	16	5	13	16	5	13
OKLAHOMA TOTALS	299	299	0	0	105	176	17	0	6	36	31	46	6	16	6	29	16	5	30
OREGON																			
ARMY																			
AFRC Coos Bay	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Roseburg	2	2	0	0	2	0	0	0	2	0	0	0	2	0	0	0	0	0	0
AFRC Warrenton	1	1	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0
NG Camp Adair	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
NG Redmond	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
Umatilla Army Depot Activity	116	116	0	0	0	116	0	0	40	0	76	0	0	0	0	76	0	0	76
USARC Bend	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Corvallis	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Eugene	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Medford	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Portland (Airport)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Portland (South)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Portland (West)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Salem	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	154	154	0	0	35	118	0	1	40	0	76	0	0	0	0	76	0	0	76

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
OREGON (Continued)																			
AIR FORCE																			
Kingsley Field	13	13	0	0	0	13	0	0	0	1	4	0	0	1	0	0	0	1	0
North Bend ANG	9	9	0	0	0	9	0	0	3	6	0	0	0	3	0	0	0	3	0
Portland ANG	9	9	0	0	0	7	2	0	1	6	0	0	0	0	0	0	0	0	0
Richmond AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Salem AFS	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	33	33	0	0	2	29	2	0	0	13	4	0	4	4	0	0	0	4	0
OREGON TOTALS	187	187	0	0	37	147	2	1	44	13	80	0	0	4	0	76	0	4	76
PENNSYLVANIA																			
ARMY																			
AFRC Beaver Falls	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Bellefonte	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Erie	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Folsom	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Philadelphia 06	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C.E. Kelly Support Facility	4	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
Carlisle Barracks	3	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Family Housing Pittsburgh 43	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Fort Indiantown Gap	5	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
Hays AAP	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Letterkenny Army Depot	64	64	0	0	1	51	9	1	7	12	30	12	10	3	1	39	2	1	40
Manor Launch Site	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
NG East Jadwin Dam	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Lock Haven	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
PENNSYLVANIA (Continued)																			
ARMY (Continued)																			
NG Nike Site 43	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Nike Site, Finleyville	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Nike Site, Gastonville	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Scranton Army Ammunition Plant	10	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
Tobyhanna AD	25	25	0	0	0	20	5	0	10	0	2	0	0	0	0	2	0	2	0
USARC Altoona	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ashley	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Belle Vernon	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bethlehem	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bloomsburg	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bristol	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Brookville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Brownsville, PA	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Butler	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Center Square	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chambersburg	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chester	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Clarion	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Clearfield	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Downingtown	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Du Bois	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Edgemont	17	17	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Erie	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Farrell	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
PENNSYLVANIA (Continued)																			
ARMY (Continued)																			
USARC Franklin	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Germantown	11	11	0	0	9	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Gettysburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greencastle (AMSA 113)	15	15	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greensburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greensburg (AMSA 104)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Harrisburg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hazelton	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Horsham 01	9	9	0	0	8	0	0	1	0	0	0	0	0	0	0	0	0	0	[illegible]
USARC Horsham 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Huntingdon	6	6	0	0	5	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Indiana	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Johnston 01	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Johnston 02	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kane	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kittanning	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lancaster	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lewsiburg	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lewistown	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lock Haven	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Marcus Hook	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Meadville	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC New Castle (AMSA 110)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
PENNSYLVANIA (Continued)																			
ARMY (Continued)																			
USARC New Cumberland	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Kensington	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Norristown	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC North Park	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Northeast Philadelphia	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Oil City	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pittsburgh 01	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pittsburgh 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pittsburgh 03	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Punxsutawney (AMSA 106)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Quakertown	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ranshaw	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Reading	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Schuylkill Haven	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Scranton	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC St. Mary's	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC State College	6	6	0	0	4	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Stockertown	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tobyhanna	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Uniontown	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Washington, PA	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wilkes-Barre	18	18	0	0	17	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Wilkes-Barre (AMSA 32G)	17	17	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Williamsport	6	6	0	0	4	0	0	2	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
PENNSYLVANIA (Continued)																			
ARMY (Continued)																			
USARC Willow Grove	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Willow Grove (ASF 28)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Willow Grove (Wurts)	19	19	0	0	18	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC York	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	556	556	0	0	425	89	14	26	17	12	32	12	10	3	1	41	2	3	40
DEPARTMENT OF NAVY																			
MCRC Wyoming PA	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
NADC Warminster	9	9	0	0	0	9	0	0	1	0	8	0	0	0	0	8	0	0	[illegible]
NAS Willow Grove	10	10	0	0	0	9	1	0	4	0	5	0	0	0	0	5	0	0	5
NASO Philadelphia	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAVHOSP Philadelphia	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSY Philadelphia	15	15	0	0	0	15	0	0	3	0	12	0	0	0	0	12	1	0	12
SPCC Mechanicsburg	11	11	0	0	0	10	1	0	4	2	4	1	0	0	1	6	1	0	7
DEPARTMENT OF NAVY TOTALS	48	47	0	1	2	43	2	1	12	2	29	1	0	0	1	31	2	0	32
AIR FORCE																			
Fort Indiantown AGS	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Greater Pittsburgh IAP	6	6	0	0	0	6	0	0	1	3	0	0	2	1	0	0	1	0	0
Metcoa Site	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Olmsted Field	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Pittsburgh, PA	5	5	0	0	0	5	0	0	4	1	0	0	0	1	0	0	1	0	0
State College	5	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0

(Conti[illegible]

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
PENNSYLVANIA (Continued)																			
AIR FORCE (Continued)																			
Willow Grove ARF	7	7	0	0	0	7	0	0	3	1	3	0	2	1	0	0	1	0	0
AIR FORCE TOTALS	30	20	10	0	0	19	10	1	8	5	3	0	4	3	0	0	3	0	0
DEFENSE LOGISTICS AGENCY																			
DDRE New Cumberland	20	20	0	0	0	20	0	0	0	9	11	0	9	0	1	10	2	2	8
DPSC Philadelphia	15	15	0	0	0	15	0	0	14	0	1	0	0	0	0	1	0	0	1
DEFENSE LOGISTICS AGENCY TOTALS	35	35	0	0	0	35	0	0	14	9	12	0	9	0	1	11	2	2	9
PENNSYLVANIA TOTALS	669	658	10	1	427	186	26	28	51	28	76	13	23	6	3	83	9	5	81
PUERTO RICO																			
ARMY																			
Camp Santiago	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Allen	6	6	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0
Fort Buchanan	28	28	0	0	0	28	0	0	0	0	28	0	0	0	0	28	0	0	28
ARMY TOTALS	35	35	0	0	0	29	0	6	0	0	28	0	0	0	0	28	0	0	28
DEPARTMENT OF NAVY																			
NS Roosevelt Roads	21	21	0	0	0	20	1	0	2	0	15	2	1	0	0	15	3	0	16
NSGA Sabana Seca	7	7	0	0	0	6	1	0	2	0	4	0	0	0	0	4	2	0	4
Supship San Juan	3	3	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	31	31	0	0	0	29	2	0	7	0	19	2	1	0	0	19	5	0	20
AIR FORCE																			
Muniz ANG	10	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
Puerto Rico	6	6	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
PUERTO RICO (Continued)																			
AIR FORCE (Continued)																			
Punta Salinas ANG	3	3	0	0	0	3	0	0	0	0	3	0	0	0	0	3	0	0	3
AIR FORCE TOTALS	19	19	0	0	0	13	6	0	0	0	9	0	0	0	0	3	0	0	3
PUERTO RICO TOTALS	85	85	0	0	0	71	8	6	7	0	56	2	1	0	0	50	5	0	51
RHODE ISLAND																			
ARMY																			
AFRC Providence (Hopkins)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lincoln Support Facility	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Camp Fogarty	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
US Army N. Smithfield Nike Site 99	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bristol, RI	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Cranston	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Nathaniel Greene	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lincoln (AMSA 68G)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Providence (Harwood)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Warwick	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	37	37	0	0	33	2	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																			
AFRC Providence	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CBC Davisville	14	14	0	0	0	14	0	0	2	0	10	2	0	0	0	12	0	3	12
NAS Charlestown	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAS Quonset Point	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
RHODE ISLAND (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
NETC Newport	15	15	0	0	0	15	0	0	0	0	5	10	0	0	0	15	0	1	15
DEPARTMENT OF NAVY TOTALS	32	32	0	0	3	29	0	0	2	0	15	12	0	0	0	27	0	4	27
AIR FORCE																			
Coventry AGS	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
North Smithfield	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0	2
Quonset, State Airport ANG	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	5	1	4	0	0	0	4	0	0	0	0	2	0	0	0	2	0	0	2
DEFENSE LOGISTICS AGENCY																			
DFSP Melville	2	2	0	0	0	2	0	0	0	0	0	2	0	0	0	2	0	0	2
DEFENSE LOGISTICS AGENCY TOTALS	2	2	0	0	0	2	0	0	0	0	0	2	0	0	0	2	0	0	2
RHODE ISLAND TOTALS	76	72	4	0	36	33	4	0	2	0	15	16	0	0	0	31	0	4	31
SOUTH CAROLINA																			
ARMY																			
Fort Jackson	21	21	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Clarks Hill Reservation	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Aiken	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Anderson	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Charleston	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Clemson	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Columbia (Forest Drive)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Columbia 02	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
SOUTH CAROLINA (Continued)																			
ARMY (Continued)																			
USARC Florence	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Jackson (ECS 124-G)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Jackson (Lee Rd.)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Jackson (McWhorter)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greenville 01 (Mahon)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Greenville 02 (Kukowski)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	0
USARC Greenwood (Montague)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Myrtle Beach	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC North Charleston	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Orangeburg	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Rock Hill	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Spartanburg	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC York, SC	10	10	0	0	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	130	130	0	0	106	22	0	2	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY																			
MCAS Beaufort	23	23	0	0	5	10	5	0	4	0	0	14	0	0	0	3	0	0	3
MCRD Parris Island	19	19	0	0	4	5	5	0	1	0	0	9	0	0	0	4	0	0	4
NAVBASE Charleston	12	12	0	0	0	9	0	0	0	0	12	0	0	1	0	1	5	0	1
NWS Charleston	18	18	0	0	5	6	0	0	0	0	2	11	0	0	0	6	0	0	6
DEPARTMENT OF NAVY TOTALS	72	72	0	0	14	30	10	0	5	0	14	34	0	1	0	14	5	[illegible]	[illegible]

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
SOUTH CAROLINA (Continued)																			
AIR FORCE																			
Charleston AFB	27	27	0	0	0	27	0	0	1	26	0	0	2	0	26	0	0	26	0
McEntire ANG	12	12	0	0	0	12	0	0	0	0	8	0	0	0	0	8	0	0	8
Myrtle Beach AFB	27	27	0	0	0	27	0	0	0	0	1	0	0	0	0	0	0	0	0
Shaw AFB	19	19	0	0	0	19	0	0	0	5	14	0	0	2	2	0	2	0	2
AIR FORCE TOTALS	85	85	0	0	0	85	0	0	1	31	23	0	2	2	28	8	2	26	10
DEFENSE LOGISTICS AGENCY																			
DFSP Charleston	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
DEFENSE LOGISTICS AGENCY TOTALS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
SOUTH CAROLINA TOTALS	288	288	0	0	120	138	10	2	6	32	37	31	2	3	29	22	7	27	24
SOUTH DAKOTA																			
ARMY																			
USARC Aberdeen	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Sioux Falls	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	16	16	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE																			
Ellsworth AFB	18	18	0	0	0	18	0	0	7	9	2	0	0	0	0	0	0	0	0
Joe Foss	10	10	0	0	0	5	5	0	4	1	5	0	0	1	0	0	0	1	0
AIR FORCE TOTALS	28	28	0	0	0	23	5	0	11	10	7	0	0	1	0	0	0	1	0
SOUTH DAKOTA TOTALS	44	44	0	0	16	23	5	0	11	10	7	0	0	1	0	0	0	1	0

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
TENNESSEE																			
ARMY																			
AFRC Johnson City	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Holston AAP	24	24	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0
Milan Army Ammunition Plant	22	22	0	0	0	22	0	0	3	0	19	0	0	1	0	17	1	0	17
NG AEDC Tullahoma	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Catoosa Range	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG John Sevier	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Smyrna Airport	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chattanooga	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	0
USARC Chattanooga (Guerry)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	0
USARC Greeneville	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Knoxville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lyell (AFRC)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Memphis 01	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Memphis 02	3	3	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Nashville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Oak Ridge	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volunteer AAP	29	29	0	0	0	29	0	0	6	0	23	0	0	0	0	15	0	0	1
ARMY TOTALS	121	121	0	0	40	79	0	2	9	0	42	0	0	1	0	32	1	0	3
DEPARTMENT OF NAVY																			
NAS Memphis	13	13	0	0	4	10	2	0	0	1	9	0	0	0	0	9	0	0	
NWIRP Bristol	9	9	0	0	9	0	5	0	0	0	0	5	0	0	2	5	0	0	
DEPARTMENT OF NAVY TOTALS	22	22	0	0	8	10	7	0	0	1	9	5	0	0	2	14	0	[illegible]	

(Continue

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
TENNESSEE (Continued)																			
AIR FORCE																			
Arnold AFB	24	24	0	0	0	24	0	0	0	0	24	0	0	1	9	0	1	2	0
Lovell Field	5	0	5	0	0	0	5	0	0	0	0	5	0	0	0	5	0	0	5
McGhee Tyson Airport	14	10	4	0	0	3	11	0	0	0	7	4	0	0	0	4	0	0	4
Memphis ANG	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nashville ANG	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	45	36	9	0	0	27	17	0	0	0	32	9	0	1	9	9	1	2	9
DEFENSE LOGISTICS AGENCY																			
DDMT Memphis	75	75	0	0	0	75	0	0	0	0	75	0	0	1	0	42	1	0	42
DEFENSE LOGISTICS AGENCY TOTALS	75	75	0	0	0	75	0	0	0	0	75	0	0	1	0	42	1	0	42
TENNESSEE TOTALS	263	254	9	0	48	191	24	2	9	1	158	14	0	3	11	97	3	2	99
TEXAS																			
ARMY																			
AFRC Austin (Camp Mabry)	15	15	0	0	12	0	0	3	0	0	0	0	0	0	0	0	0	0	0
AFRC Corpus Christi (AMSA 7)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Mesquite	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Midland	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Camp Bullis	16	16	0	0	0	0	4	11	0	0	0	0	0	0	0	0	0	0	0
Canyon Lake Recreation Area	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Corpus Christi AD	17	17	0	0	0	17	0	0	0	0	0	17	0	0	0	0	0	0	0
Corpus Christi USARC	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
El Paso Site	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
TEXAS (Continued)																			
ARMY (Continued)																			
Fort Bliss	33	33	0	0	0	29	0	0	0	1	11	1	0	0	2	11	0	1	12
Fort Hood	52	52	0	0	0	52	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Sam Houston	28	28	0	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0
Fuels and Lubricant Research Lab	2	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Lake Lavon, North Gully, Wylie	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Lone Star AAP	43	43	0	0	0	42	0	0	8	0	37	0	0	4	0	21	3	1	21
Longhorn AAP	59	59	0	0	0	16	0	10	0	0	12	47	0	0	0	0	1	0	0
NG Addicks Reservoir	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]
NG Barker Dam DZ	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
NG Camp Barkeley	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Camp Swift	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Decatur	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Fort Wolters	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Nike Site 80	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Panhandle Training Area	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Reservoir Texarcana	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG West Cleveland	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Red River Army Depot	32	32	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0
Saginaw Army Aircraft Plant	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USA Houston Armed Forces Center	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Abilene	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Alice	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Amarillo	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
TEXAS (Continued)																			
ARMY (Continued)																			
USARC Amarillo 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Arlington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Austin (Camp Mabry)	15	15	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Austin 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Austin 03	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bay City, TX	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Beaumont (AMSA 6)	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Beaumont (Laurel)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Brownsville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bryan (Moore)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bryan 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Conroe (ASF 62)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Corpus Christi (Memorial)	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Dallas 01 (Muchert)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Dallas 02	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Dallas 03	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Denton	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC El Paso	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Bliss (AMSA 12)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Bliss (Biggs Field Pet)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Worth (HOT)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Worth 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Worth (AMSA 5, SUB 2)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
TEXAS (Continued)																			
ARMY (Continued)																			
USARC Grand Prairie (ASF 13)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Harlingen (AMSA 7, SUB 1)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Houston 02 (AMSA 4)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Huntsville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Laredo	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Lubbock	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Lubbock (AMSA 11)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Lubbock (Hospital TNG)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	
USARC McAllen	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC North Fort Hood (ESC 64)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Paris	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Pasadena	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	
USARC Port Arthur	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Rio Grande City	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC San Antonio (Boswell)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC San Antonio (Callaghan)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC San Marcos	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Seagoville	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Sinton	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Texarkana (AMSA 5 SUB 4)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Tyler	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	[illegible]	

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
TEXAS (Continued)																			
ARMY (Continued)																			
USARC Victoria	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Waco	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Waco (AMSA 8)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wichita Falls	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wichita Falls 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Yoakum	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	577	577	0	0	275	226	5	33	8	1	60	65	0	4	2	32	4	2	33
DEPARTMENT OF NAVY																			
NAS Chase Field	4	4	0	0	0	0	4	0	0	0	0	4	0	0	0	1	0	0	1
NAS Corpus Christi	15	15	0	0	0	15	0	0	12	0	3	0	0	0	0	1	0	1	1
NAS Dallas	12	12	0	0	4	5	0	0	0	0	0	8	0	0	0	6	0	0	6
NAS Kingsville	13	13	0	0	0	6	7	0	6	0	0	7	0	0	0	2	0	0	2
NWIRP Dallas	11	11	0	0	2	9	0	0	2	0	0	7	0	0	0	5	0	0	6
NWIRP McGregor	14	14	0	0	4	8	0	0	5	0	4	0	0	0	0	3	1	0	3
DEPARTMENT OF NAVY TOTALS	69	69	0	0	10	43	11	0	25	0	7	26	0	0	0	18	1	1	19
AIR FORCE																			
AFP No. 4, Ft. Worth	30	30	0	0	0	26	0	0	7	6	12	0	0	2	20	0	0	22	0
Bergstrom AFB	27	27	0	0	0	27	0	0	15	1	11	0	0	0	0	0	0	0	0
Brooks AFB	11	11	0	0	0	11	0	0	0	10	1	0	0	0	0	0	0	0	0
Carswell AFB	18	18	0	0	0	18	0	0	5	3	5	0	1	1	2	0	0	0	2
Dyess AFB	39	39	0	0	0	39	0	0	5	5	1	0	0	2	3	0	0	3	2
Ellington ANG	6	6	0	0	0	6	0	0	0	4	1	0	0	0	2	0	0	2	0
Garland	5	1	4	0	0	1	4	0	0	1	0	0	0	1	0	0	0	1	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
TEXAS (Continued)																			
AIR FORCE (Continued)																			
Goodfellow AFB	6	6	0	0	0	6	0	0	2	2	0	0	2	1	0	0	0	0	
Kelly AFB	48	48	0	0	0	48	0	0	4	19	6	0	0	1	3	0	1	3	
Lackland	24	24	0	0	0	24	0	0	4	14	5	0	12	1	1	5	1	0	
LaPorte AGS	5	0	5	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	
Laughlin	13	13	0	0	0	13	0	0	6	7	0	0	6	0	0	0	0	0	
Nederland AGS	5	0	5	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	
Randolph AFB	20	20	0	0	0	20	0	0	5	1	1	0	5	0	0	0	0	0	
Reese AFB	13	13	0	0	0	13	0	0	4	2	3	0	2	0	2	0	0	2	
Sheppard AFB	19	19	0	0	0	19	0	0	6	8	0	0	6	2	0	0	0	[illegible]	
AIR FORCE TOTALS	289	275	14	0	0	271	14	0	63	83	56	0	34	11	33	5	2	35	
TEXAS TOTALS	935	921	14	0	285	540	30	33	96	84	123	91	34	15	35	55	7	38	6
TRUST TERRITORIES																			
DEPARTMENT OF NAVY																			
NAF Midway	3	3	0	0	0	0	3	0	0	0	0	3	0	0	0	3	0	0	
DEPARTMENT OF NAVY TOTALS	3	3	0	0	0	0	3	0	0	0	0	3	0	0	0	3	0	0	
AIR FORCE																			
Wake Island Airfield	23	23	0	0	0	23	0	0	0	0	23	0	0	0	0	23	0	0	2
AIR FORCE TOTALS	23	23	0	0	0	23	0	0	0	0	23	0	0	0	0	23	0	0	2
TRUST TERRITORIES TOTALS	26	26	0	0	0	23	3	0	0	0	23	3	0	0	0	26	0	0	2

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
UTAH																			
ARMY																			
Blanding Launch Area	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Dugway Proving Ground	167	167	0	0	0	1	0	162	0	4	0	162	7	0	0	162	0	0	162
Fort Douglas	23	23	0	0	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0
Green River Test Site	12	12	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0
Tooele AD, North Area	45	45	0	0	0	45	0	0	8	1	36	0	0	1	0	36	0	1	36
Tooele AD, South Area	28	28	0	0	0	28	0	0	0	0	28	0	0	0	0	28	1	0	27
USARC Logan	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ogden	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ogden (AMSA 31)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ogden Depot	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pleasant Grove	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Provo	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Salt Lake City	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Salt Lake City (ASF 24)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wig Mountatin Area	5	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	343	343	0	0	61	93	0	185	8	5	64	162	7	1	0	226	1	1	225
DEPARTMENT OF NAVY																			
NIROP Magna	6	6	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	6	6	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0
AIR FORCE																			
AFP No. 78, Corinne	12	12	0	0	0	12	0	0	0	0	12	0	0	0	4	0	0	4	0
Francis Peak AGS	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Hill AFB	45	45	0	0	1	45	0	0	3	7	4	0	2	0	4	0	0	4	0

(Continued)

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
UTAH (Continued)																			
AIR FORCE (Continued)																			
Salt Lake City IAP ANG (Utah ARNG)	7	7	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	
AIR FORCE TOTALS	65	64	0	1	1	57	7	1	3	7	23	0	2	0	8	0	0	8	
DEFENSE LOGISTICS AGENCY																			
DDOU Ogden	44	44	0	0	0	44	0	0	22	22	0	0	12	4	3	3	1	2	
DEFENSE LOGISTICS AGENCY TOTALS	44	44	0	0	0	44	0	0	22	22	0	0	12	4	3	3	1	2	
UTAH TOTALS	458	457	0	1	62	200	7	186	33	34	93	162	21	5	11	229	2	11	2
VERMONT																			
ARMY																			
Ethan Allen Firing Range	6	6	0	0	5	1	1	3	1	0	0	0	0	0	0	0	0	0	
USARC Chester, VT	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Montpelier	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Rutland (Courcelle)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Winooski	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	23	23	0	0	22	1	1	3	1	0	0	0	0	0	0	0	0	0	
AIR FORCE																			
Burlington IAP (Vermont ANG)	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	
AIR FORCE TOTALS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	
VERMONT TOTALS	25	25	0	0	22	3	1	3	1	0	2	0	0	0	0	0	0	0	

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
VIRGIN ISLANDS																			
AIR FORCE																			
St. Croix	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0
VIRGIN ISLANDS TOTALS	2	2	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0
VIRGINIA																			
ARMY																			
AFRC Lynchburg	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arlington Hall Station	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Cameron Station	6	6	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0
Defense Mapping Agency Herndon	5	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
Fort A.P. Hill	245	245	0	0	0	0	0	245	0	0	0	0	0	0	0	0	0	0	0
Fort Belvoir	59	59	0	0	0	17	0	34	0	0	0	0	0	0	0	0	0	0	0
Fort Eustis	26	26	0	0	0	26	0	0	0	26	0	0	0	0	26	0	0	26	0
Fort Lee	22	22	0	0	0	6	1	15	0	1	0	0	0	2	0	0	1	0	0
Fort Monroe	3	3	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0
Fort Myer	5	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
Fort Story	3	3	0	0	0	1	0	2	0	1	0	0	0	0	0	0	0	0	0
NG Byrd Field	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Callaghan	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Richlands	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG VA Beach	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Radford AAP	37	37	0	0	0	37	0	0	0	0	37	0	0	0	0	37	0	0	37
USARC Abingdon	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Alexandria	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(Continued)

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	Total # of Sites	Number of Sites																
		PA				SI				RI/FS				RD			RA	
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U
VIRGINIA (Continued)																		
ARMY (Continued)																		
USARC Alexandria (Jones Point)	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Charlottesville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chesterfield (AMSA 90)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chincoteague (Wallops Is.)	5	5	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0
USARC Christiansburg (AMSA 89)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Churchland (Portsmouth)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Covington	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]
USARC Culpeper	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Galax	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hampton	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Hampton (Marcella Road)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lawrenceville	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Martinsville	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Norfolk	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Radford	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Radford (New River)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Richmond (Dervishian)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Richmond 01 (Monteith)	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Richmond, VA	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Salem, VA	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Springfield (AMSA 91)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
VIRGINIA (Continued)																			
ARMY (Continued)																			
USARC Warsaw	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Waynesboro	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vint Hill Farms Station	4	4	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0
Woodbridge Research Facility	13	13	0	0	4	9	0	0	8	1	0	0	0	1	0	0	1	0	0
ARMY TOTALS	545	545	0	0	114	104	3	316	8	30	37	0	0	3	26	37	2	26	37
DEPARTMENT OF NAVY																			
AFEXTA Camp Peary, Williamsburg	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arlington Service Center	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COMNAVBASE Norfolk	18	18	0	0	0	18	0	0	12	0	6	0	0	0	0	6	0	2	6
FCTC Dam Neck	6	6	0	0	0	6	0	0	4	0	2	0	0	0	0	2	0	0	2
Headquarters Battalion, Arlington	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
MCCDC Quantico	20	20	0	0	0	19	1	0	11	1	7	0	0	1	2	8	3	0	10
NADEP Norfolk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
NAS Oceana	19	19	0	0	0	19	0	0	5	1	13	0	1	0	0	6	0	0	6
NAVHOSP Portsmouth	2	2	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0	0
NAVPHIBASE Little Creek	17	17	0	0	0	12	5	0	6	0	6	5	0	0	0	11	0	0	11
NAVRADSTA Driver	8	8	0	0	0	8	0	0	5	0	3	0	0	0	0	3	0	0	3
NFD/NSC Craney Island	14	14	0	0	0	13	0	0	7	3	4	0	0	0	1	6	0	0	6
NMCRC Roanoke	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSC Cheatham Annex Williamsburg	12	12	0	0	0	12	0	0	8	1	3	0	1	0	0	3	0	0	3
NSC Yorktown Fuels Division	20	20	0	0	0	20	0	0	6	0	14	0	0	0	0	14	0	0	14
NSGA Nwest Chesapeake	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSWC Dahlgren	37	37	0	0	0	34	3	0	28	0	9	0	0	0	0	10	0	2	10

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	[illegible]
VIRGINIA (Continued)																			
DEPARTMENT OF NAVY (Continued)																			
NSY (Norfolk) Portsmouth	19	19	0	0	0	19	0	0	11	1	7	0	1	0	0	7	0	0	
NWS St. Julien's Creek Annex, Norfolk	2	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	
NWS Yorktown	21	21	0	0	0	20	1	0	4	1	15	1	1	0	0	16	0	0	
DEPARTMENT OF NAVY TOTALS	220	220	0	0	6	201	12	0	107	8	89	8	4	1	3	92	5	5	
AIR FORCE																			
Byrd ANG (Richmond IAP)	3	3	0	0	0	0	0	3	0	0	0	3	0	0	0	3	0	0	
CONUS Radar Sites	37	37	0	0	17	37	0	0	0	37	0	0	0	5	0	18	1	[illegible]	
Langley AFB	36	36	0	0	0	36	0	0	14	10	0	0	0	1	7	0	[illegible]		
Richmond ANG	2	2	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	
AIR FORCE TOTALS	78	78	0	0	17	73	2	3	14	47	2	3	0	6	7	21	2	11	
DEFENSE LOGISTICS AGENCY																			
DGSC Richmond	30	30	0	0	0	30	0	0	18	3	9	0	1	0	0	5	4	0	
DEFENSE LOGISTICS AGENCY TOTALS	30	30	0	0	0	30	0	0	18	3	9	0	1	0	0	5	4	0	
VIRGINIA TOTALS	873	873	0	0	137	408	17	319	147	88	137	11	5	10	36	155	13	42	
WASHINGTON																			
ARMY																			
AFRC Bellingham	7	7	0	0	6	0	0	1	0	0	0	0	0	0	0	0	0	0	
AFRC Bellingham (Stevens)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFRC Ellensburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFRC Port Orchard	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]	
AFRC Tacoma	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
WASHINGTON (Continued)																			
ARMY (Continued)																			
AFRC Yakima	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Federal Regional Center Bothell	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Fort Lewis	46	46	0	0	28	8	0	9	0	5	2	1	0	0	5	2	3	0	6
NG Camp Murray	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0
NG Camp Seven Mile	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Nike Site 43	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bothell	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Clarkston	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Everett	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Lawton (AMSA 7)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Kennewick	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Longview	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Moses Lake	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Pasco	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Redmond	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Spokane	12	12	0	0	9	0	0	3	0	0	0	0	0	0	0	0	0	0	0
USARC Trentwood (AMSA 8)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Tumwater	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Walla Walla	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Wenatchee	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Yakima (Pendlton)	8	8	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
Vancouver Barracks	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
Yakima Firing Center	37	37	0	0	0	37	0	0	0	0	0	37	0	0	0	0	0	0	0
ARMY TOTALS	182	182	0	0	114	49	0	18	0	6	2	39	0	0	6	2	3	1	6

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	Total # of Sites	Number of Sites																
		PA				SI				RI/FS				RD			RA	
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U
WASHINGTON (Continued)																		
DEPARTMENT OF NAVY																		
Jackson Park Housing, Bremerton	4	3	1	0	0	3	1	0	0	0	2	1	0	0	0	2	0	0
NAS Whidbey Island	51	51	0	0	0	51	0	0	12	0	31	8	0	0	0	39	0	0
NAVHOSP Bremerton	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0
NAVRADSTA/T/Jim Creek	8	8	0	0	0	6	2	0	6	0	0	0	0	0	0	0	0	0
NAVRESMAINTRAFAC Puget Sound	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
NS Puget Sound	2	1	1	0	0	1	0	0	0	0	1	1	0	0	0	2	0	0
NSB Bangor	42	42	0	0	0	42	0	0	15	4	23	0	4	0	0	24	1	0
NSC Puget Sound Bremerton	1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0
NSC Puget Sound Manchester	2	2	0	0	0	2	0	0	1	1	0	0	0	0	1	0	0	1
NSY Everett	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
NSY Puget Sound	22	22	0	0	0	8	10	0	8	0	8	2	0	0	6	1	0	0
NUWES Indian Island Det.	13	13	0	0	0	0	10	0	7	1	2	0	0	1	0	2	2	0
NUWES Keyport	10	10	0	0	0	8	1	0	3	0	7	1	0	0	0	6	0	0
DEPARTMENT OF NAVY TOTALS	158	156	2	0	0	123	24	2	53	6	75	14	4	1	7	78	3	1
AIR FORCE																		
Bellingham MAP	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Camp Murray AGS	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0
Fairchild AFB	30	30	0	0	0	30	0	0	0	2	12	0	0	1	0	0	0	1
Four Lakes	2	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Makah AFS	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
McChord AFB	64	64	0	0	0	64	0	0	1	1	0	0	0	0	0	0	0	0
Paine Field AGS	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0
Seattle AGS	2	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2	0	0

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
WASHINGTON (Continued)																			
AIR FORCE (Continued)																			
Spokane IAP	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2
AIR FORCE TOTALS	106	97	9	0	0	97	9	0	1	4	14	6	0	1	0	8	0	1	8
DEFENSE LOGISTICS AGENCY																			
DFSP Mukilteo	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2
DEFENSE LOGISTICS AGENCY TOTALS	2	2	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0	0	2
WASHINGTON TOTALS	448	437	11	0	114	271	33	20	54	16	93	59	4	2	13	90	6	3	104
WEST VIRGINIA																			
ARMY																			
AFRC Morgantown	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC South Charleston	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC South Charleston (AMSA 107)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Hinton	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Volcano Range	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Beaver	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Bluefield	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Clarksburg	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC East Rainelle	4	4	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Elkins	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fairmont	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Grafton	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Grantsville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	0
USARC Huntington	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	[illegible]	0

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	Total # of Sites	Number of Sites																
		PA				SI				RI/FS				RD			RA	
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U
WEST VIRGINIA (Continued)																		
ARMY (Continued)																		
USARC Jane Lew	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Lewisburg, WV	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Martinsburg	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC New Martinsville	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Parkersburg	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Parkersburg (AMSA 114)	5	5	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0
USARC Ripley	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Romney	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Valley Grove (AMSA 109)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Weirton	3	3	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0
USARC Wheeling	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
West Virginia Ordnance Works	6	6	0	0	0	6	0	0	0	6	0	0	0	3	3	0	3	3
ARMY TOTALS	95	95	0	0	80	8	0	7	0	6	0	0	0	3	3	0	3	3
DEPARTMENT OF NAVY																		
ABL Mineral County	10	10	0	0	0	10	0	0	0	0	10	0	0	0	0	6	0	0
NAVRADSTA/R/ Sugar Grove	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
DEPARTMENT OF NAVY TOTALS	11	11	0	0	1	10	0	0	0	0	10	0	0	0	0	6	0	0

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	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
WEST VIRGINIA (Continued)																			
AIR FORCE																			
EWVRA Shepherd Field	4	4	0	0	0	4	0	0	0	3	1	0	0	3	0	0	0	0	0
Yeager	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	8	8	0	0	0	8	0	0	0	3	1	0	0	3	0	0	0	0	0
WEST VIRGINIA TOTALS	114	114	0	0	81	26	0	7	0	9	11	0	0	6	3	6	3	3	6
WISCONSIN																			
ARMY																			
Badger Army Ammunition Plant	28	28	0	0	15	12	0	0	1	0	12	0	0	1	0	7	0	1	7
Camp Williams	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	[illegible]	[illegible]
Camp Wismer	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort McCoy	26	26	0	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0
NG INO Range	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Truax Field	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Appleton	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Beaver Dam	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Beloit	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Chippewa Falls	5	5	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC De Pere (AMSA 51)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Dodgeville	5	5	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0
USARC Eau Claire (AMSA 52)	8	8	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Eau Claire (Keith)	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Ellsworth	7	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fond du Lac	2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Green Bay	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	0

(Continued)

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
WISCONSIN (Continued)																			
ARMY (Continued)																			
USARC Green Bay (Buchanan Street)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Hurley (AMSA 52 SUB 1)	8	8	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Ladysmith	7	7	0	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	
USARC Madison (AMSA 50)	13	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Madison (O'Connell)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Madison (Park St.)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Manitowoc	8	8	0	0	7	0	0	1	0	0	0	0	0	0	0	0	0	0	
USARC Menasha	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Milwaukee (AMSA 49)	11	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Milwaukee (Logan)	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Milwaukee (Silver Spring)	16	16	0	0	14	0	0	2	0	0	1	0	0	0	1	0	0	1	
USARC Onalaska (AMSA 53)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Onalaska (Industrial Road)	12	12	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Oshkosh	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Pewaukee	3	3	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	
USARC Racine	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Sheboygan	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Sparta (Fort McCoy 240)	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Sparta (Ft. McCoy ECS 67)	14	14	0	0	9	0	0	5	0	0	0	0	0	0	0	0	0	0	
USARC Wausau	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARMY TOTALS	**236**	**236**	**0**	**0**	**170**	**42**	**0**	**17**	**1**	**0**	**13**	**0**	**0**	**1**	**1**	**7**	**0**	**2**	

(Continue

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
WISCONSIN (Continued)																			
AIR FORCE																			
Gen. Mitchell Field	4	4	0	0	0	4	0	0	3	1	0	0	0	1	0	0	1	0	0
Hardwood WR	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Truax Field (Air Force)	7	5	2	0	0	5	2	0	2	0	4	2	1	0	0	2	0	0	2
Volk Field ANG	17	17	0	0	0	10	7	0	1	9	7	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	29	26	2	1	0	19	9	1	6	10	11	2	1	1	0	2	1	0	2
WISCONSIN TOTALS	265	262	2	1	170	61	9	18	7	10	24	2	1	2	1	9	1	2	9
WYOMING																			
ARMY																			
AFRC Sheridan	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Lander	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Lovell	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
NG Sheridan	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Cheyenne	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARMY TOTALS	10	10	0	0	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0
AIR FORCE																			
Cheyenne ANG (Wyoming ANG)	5	5	0	0	0	5	0	0	0	1	4	0	0	1	4	0	0	1	4
F.E. Warren AFB	20	20	0	0	0	20	0	0	0	7	12	0	0	0	0	0	0	0	0
AIR FORCE TOTALS	25	25	0	0	0	25	0	0	0	8	16	0	0	1	4	0	0	1	4
WYOMING TOTALS	35	35	0	0	7	28	0	0	0	8	16	0	0	1	4	0	0	1	4

Table C-2
Department of Defense Environmental Restoration Program
IRP Status Summary, As of September 30, 1991

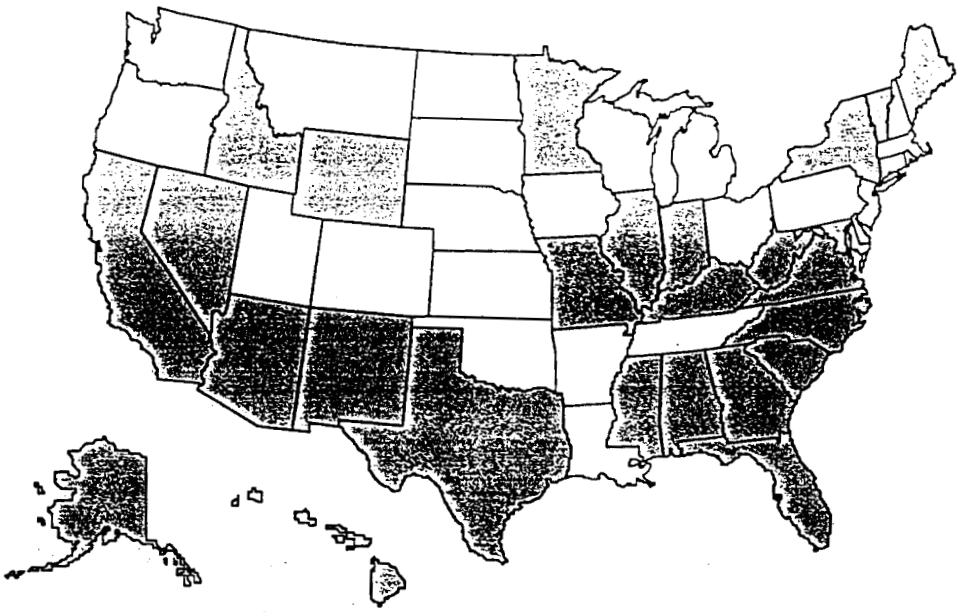
Component	Number of Sites			
	C	U	F	CO
PA				
Army	10,567	6	5	4,763
Navy	2,362	43	4	200
Air Force	4,038	301	15	75
DLA	319	0	0	0
Grand Total	**17,286**	**350**	**24**	**5,038**
SI				
Army	4,330	192	1,050	242
Navy	1,580	477	68	506
Air Force	3,821	472	10	526
DLA	319	0	0	104
Grand Total	**10,050**	**1,141**	**1,128**	**1,378**
RI/FS				
Army	355	955	886	49
Navy	38	971	529	10
Air Force	1,053	1,313	69	165
DLA	47	163	4	23
Grand Total	**1,493**	**3,402**	**1,488**	**247**
RD				
Army	141	234	1,075	0
Navy	9	27	1,286	0
Air Force	230	475	387	0
DLA	12	9	129	0
Grand Total	**392**	**745**	**2,877**	**0**
RA				
Army	146	237	1,079	0
Navy	60	38	1,330	5
Air Force	150	415	404	68
DLA	16	8	129	0
Grand Total	**372**	**698**	**2,942**	**73**

Appendix D
State Status

This Appendix to the Annual Report provides state-by-state information regarding NPL, DSMOA, and IAG status. For the states, the following information is given:

- Number of installations and sites in the IRP
- IRP site status
- DSMOA and CA status
- Number of NPL-listed DoD installations
- Number of NPL installations covered by a signed IAG
- Number of installations covered by a DSMOA (for states with a signed DSMOA)
- FY 1991 funding provided to the state under the DSMOA.

The installations included in the following total state counts are listed in Table C-1.



States with signed DSMOAs

Table D-1
Department of Defense Environmental Restoration Program
Installation Restoration Program Status Summary, As of September 30, 1991

	Total # of Installations	Total # of Sites	PA			
			C	U	F	CO
Alabama	45	561	546	15	0	192
Alaska	52	648	624	24	0	2
Arizona	21	327	314	2	11	28
Arkansas	33	282	281	0	1	116
California	148	2,064	1,933	128	3	214
Colorado	22	400	396	4	0	42
Connecticut	23	102	102	0	0	63
Delaware	10	86	86	0	0	19
District of Columbia	7	23	23	0	0	2
Florida	63	540	501	39	0	141
Georgia	37	484	465	19	0	86
Guam	9	102	102	0	0	28
Hawaii	46	230	224	6	0	55
Idaho	20	90	90	0	0	42
Illinois	59	567	566	0	1	263
Indiana	30	345	345	0	0	119
Iowa	28	186	186	0	0	120
Kansas	40	318	318	0	0	121
Kentucky	30	427	427	0	0	85
Louisiana	33	202	197	5	0	106
Maine	18	122	117	5	0	34
Maryland	56	532	521	6	5	115
Massachusetts	27	365	349	16	0	68
Michigan	35	242	240	2	0	95
Minnesota	30	225	224	1	0	152
Mississippi	29	224	224	0	0	88
Missouri	37	288	286	2	0	112

C = Completed Activity • U = Underway Activity • F = Future Activity Planned • CO = Closed-Out Sites

Number of Sites													
SI				RI/FS				RD			RA		
C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
299	32	5	69	58	101	62	0	23	21	142	20	17	148
551	63	32	74	167	217	39	43	32	111	170	26	75	170
286	7	1	31	33	35	1	1	9	5	17	3	9	19
155	0	1	1	53	7	0	0	29	0	0	23	0	0
1,485	283	74	196	163	618	280	24	41	181	531	45	188	550
355	4	0	16	211	43	2	10	24	162	10	13	160	12
26	6	9	0	0	15	6	0	0	0	17	1	0	17
64	0	3	26	3	29	0	0	1	0	0	0	1	0
14	3	4	0	2	5	2	0	2	0	0	1	2	1
250	95	8	25	22	181	35	0	9	3	113	11	4	114
281	16	15	11	18	30	34	0	9	4	39	7	4	39
74	0	0	25	7	22	4	0	1	2	16	2	2	17
143	28	0	16	20	38	34	0	8	1	56	7	2	55
52	0	0	3	4	17	0	0	2	2	4	2	0	4
268	17	17	48	33	101	14	13	4	10	66	6	10	69
170	41	8	3	2	23	34	0	1	0	37	2	0	36
56	4	6	0	4	47	0	0	1	6	30	1	5	30
194	0	3	10	7	22	53	2	3	4	0	6	5	0
226	38	78	3	0	2	38	0	0	1	37	0	2	37
102	9	1	27	3	15	14	0	1	1	21	1	0	22
77	10	1	8	4	40	4	3	3	0	29	2	1	29
370	26	10	53	44	54	77	22	5	24	39	6	20	43
169	50	77	6	26	112	105	6	14	8	163	13	3	161
139	2	6	14	3	36	22	4	2	1	26	2	1	26
60	3	9	7	3	34	0	0	4	9	13	5	11	13
66	22	48	12	23	28	9	4	3	0	19	5	2	16
143	4	0	11	15	47	50	2	0	3	39	7	2	32

(Continued)

Table D-1
Department of Defense Environmental Restoration Program
Installation Restoration Program Status Summary, As of September 30, 1991

	Total # of Installations	Total # of Sites	PA			
			C	U	F	CO
Montana	12	78	78	0	0	43
Nebraska	27	156	156	0	0	49
Nevada	7	189	189	0	0	10
New Hampshire	9	90	90	0	0	21
New Jersey	24	329	325	4	0	49
New Mexico	19	257	255	2	0	23
New York	90	653	647	6	0	326
North Carolina	40	306	304	2	0	91
North Dakota	11	60	60	0	0	31
Ohio	56	468	456	12	0	220
Oklahoma	52	299	299	0	0	105
Oregon	19	187	187	0	0	37
Pennsylvania	105	669	658	10	1	427
Puerto Rico	9	85	85	0	0	0
Rhode Island	19	76	72	4	0	36
South Carolina	30	288	288	0	0	120
South Dakota	4	44	44	0	0	16
Tennessee	25	263	254	9	0	48
Texas	104	935	921	14	0	285
Trust Territories	2	26	26	0	0	0
Utah	21	458	457	0	1	62
Vermont	6	25	25	0	0	22
Virgin Islands	1	2	2	0	0	0
Virginia	68	873	873	0	0	137
Washington	51	448	437	11	0	114
West Virginia	30	114	114	0	0	81
Wisconsin	41	265	262	2	1	170
Wyoming	7	35	35	0	0	7
Grand Totals	1,877	17,660	17,286	350	24	5,038

Number of Sites													
SI				RI/FS				RD			RA		
C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
23	8	4	8	11	8	0	2	2	8	0	1	1	0
101	3	2	4	33	53	8	0	58	3	14	58	3	15
167	11	2	28	10	34	14	0	1	0	21	0	1	21
67	2	0	7	21	23	0	5	2	1	2	2	0	3
243	21	13	35	13	137	54	6	3	1	161	5	1	164
229	4	1	6	25	10	15	0	5	4	3	1	6	4
253	48	24	13	50	54	10	2	13	4	33	12	3	36
193	16	6	58	25	62	12	1	0	7	46	3	3	45
23	4	2	4	1	10	0	0	1	0	1	1	0	1
149	65	33	44	7	110	3	0	2	6	4	0	6	4
176	17	0	6	36	31	46	6	16	6	29	16	5	30
147	2	1	44	13	80	0	0	4	0	76	0	4	76
186	26	28	51	28	76	13	23	6	3	83	9	5	81
71	8	6	7	0	56	2	1	0	0	50	5	0	51
33	4	0	2	0	15	16	0	0	0	31	0	4	31
138	10	2	6	32	37	34	2	3	29	22	7	27	24
23	5	0	11	10	7	0	0	1	0	0	0	1	0
191	24	2	9	1	158	14	0	3	11	97	3	2	99
540	30	33	96	84	123	91	34	15	35	55	7	38	61
23	3	0	0	0	23	3	0	0	0	26	0	0	26
200	7	186	33	34	93	162	21	5	11	229	2	11	232
3	1	3	1	0	2	0	0	0	0	0	0	0	0
2	0	0	2	0	0	0	0	0	0	0	0	0	0
408	17	319	147	88	137	11	5	10	36	155	13	42	155
271	33	20	54	16	93	59	4	2	13	90	6	3	104
26	0	7	0	9	11	0	0	6	3	6	3	3	6
61	9	18	7	10	24	2	1	2	1	9	1	2	9
28	0	0	0	8	16	0	0	1	4	0	0	1	4
10,050	1,141	1,128	1,378	1,493	3,402	1,488	247	392	745	2,877	372	698	2,942

Table D-2

Defense and State Memorandum of Agreement and Cooperative Agreement Status as of September 30, 1991

State	Notice & Info Sent	Draft DSMOA & Forms Sent	State Response	Comments from State	Final DSMOA	DoD Signature	State Signature	CA Application Received	Comments Given	Final CA Submitted	CA Awarded
Alabama	■	■	■	■	■	■	■	■	■	■	■
Alaska	■	■	■	■	■	■	■	■	■	■	■
Arizona	■	■	■	■	■	■	■	■	■	■	■
Arkansas	■	■	■	■	■						
California	■	■	■	■	■	■	■	■	■	■	■
Colorado	■	■									
Connecticut	■	■									
Delaware	■	■	■	■	■	■	■	■	■	■	■
Florida	■	■	■	■	■	■	■	■	■	■	■
Georgia	■	■	■	■	■	■					
Hawaii	■	■	■	■	■	■					
Idaho	■	■	■	■	■	■	■	■	■	■	■
Illinois	■	■	■	■	■	■	■	■	■	■	■
Indiana	■	■	■	■	■	■	■	■	■		
Iowa*	■	■									
Kansas	■	■									
Kentucky	■	■	■	■	■	■	■	■	■	■	■
Louisiana	■	■									
Maine	■	■	■	■	■	■	■	■	■	■	■
Maryland	■	■	■	■	■	■	■	■	■	■	■
Massachusetts	■	■	■	■							
Michigan	■	■									
Minnesota	■	■	■	■	■	■	■	■	■	■	■
Mississippi	■	■	■	■	■	■	■	■	■	■	■
Missouri	■	■	■	■	■	■	■	■	■	■	■
Montana	■	■									
Nebraska	■	■									
Nevada	■	■	■	■	■	■	■	■	■	■	■

*State has not pursued DSMOA.
CA = Cooperative Agreement.

Table D-2
Defense and State Memorandum of Agreement and Cooperative Agreement Status as of September 30, 1991

State	Notice & Info Sent	Draft DSMOA & Forms Sent	State Response	Comments from State	Final DSMOA	DoD Signature	State Signature	CA Application Received	Comments Given	Final CA Submitted	CA Awarded
New Hampshire	●	●	●	●	●	●					
New Jersey	●	●	●	●	●	●					
New Mexico	●	●	●	●	●	●	●	●	●	●	●
New York	●	●	●	●	●	●	●	●	●	●	●
North Carolina	●	●	●	●	●	●	●	●	●	●	●
North Dakota*	●	●	●								
Ohio	●	●	●	●	●						
Oklahoma	●	●	●	●	●	●					
Oregon	●	●	●	●	●						
Pennsylvania	●	●	●								
Rhode Island	●	●	●	●	●	●	●	●	●	●	●
South Carolina	●	●	●	●	●	●	●	●	●	●	●
South Dakota	●	●	●	●	●	●					
Tennessee	●	●	●	●							
Texas	●	●	●	●	●	●	●	●	●	●	●
Utah*	●	●	●								
Vermont	●	●	●	●	●	●	●	●	●	●	●
Virginia	●	●	●	●	●	●	●	●	●	●	●
Washington	●	●	●	●							
West Virginia	●	●	●	●	●	●	●	●	●	●	●
Wisconsin	●	●	●								
Wyoming	●	●	●	●	●	●	●	●	●	●	●
Washington, DC	●	●	●								
Puerto Rico	●	●	●	●	●	●	●				
Amer. Samoa	●	●	●	●	●	●	●				
Guam	●	●	●	●	●	●					
Virgin Islands*	●	●									
Marianas	●	●									

*State has not pursued DSMOA.
CA = Cooperative Agreement.

Table D-3
Installation Restoration Program, National Priorities List, and Defense and State Memoranda of Agreement Status by State

State	IRP Installations	NPL Installations		DSMOA Status	
		Total	Covered by a Signed IAG	Installations covered by a DSMOA	$(K) during FY 199
Alabama	45	2	2	10	274
Alaska	52	3	1	75	465
Arizona	21	3	2	13	624
Arkansas	33	0	0	—	—
California	148	18	18	79	6,389
Colorado	22	2	1	—	—
Connecticut	23	1	0	—	—
Delaware	10	1	1	2	—
District of Columbia	7	0	0	—	—
Florida	63	4	4	15	—
Georgia	37	2	2	13	—
Guam	9	0	0	—	—
Hawaii	46	2 *	1	26	—
Idaho	20	1	0	2	199
Illinois	59	2	2	14	100
Indiana	30	0	0	8	—
Iowa	28	1	1	—	—
Kansas	40	1	1	—	—
Kentucky	30	0	0	6	379
Louisiana	33	1	1	—	—
Maine	18	2	2	5	645
Maryland	56	1	1	14	1,665
Massachusetts	27	3	3	—	—
Michigan	35	0	0	—	—
Minnesota	30	3	3	4	827
Mississippi	29	0	0	10	35
Missouri	37	2	2	8	650
Montana	12	0	0	—	—

*Includes Pearl Harbor Naval Complex proposed for the NPL.

Table D-3
Installation Restoration Program, National Priorities List, and Defense and State Memoranda of Agreement Status by State

State	IRP Installations	NPL Installations		DSMOA Status	
		Total	Covered by a Signed IAG	Installations covered by a DSMOA	$(K) during FY 1991
Nebraska	27	1	1	—	—
Nevada	7	0	0	5	206
New Hampshire	9	1	1	—	—
New Jersey	24	4	4	—	—
New Mexico	19	0	0	8	—
New York	90	3	2	18	1,217
North Carolina	40	1	1	1	145
North Dakota	11	0	0	—	—
Ohio	56	1	1	—	—
Oklahoma	52	1	1	—	—
Oregon	19	1	1	—	—
Pennsylvania	105	3	3	—	—
Puerto Rico	9	1	0	2	—
Rhode Island	19	2	0	7	258
South Carolina	30	0	0	11	220
South Dakota	4	1	0	—	—
Tennessee	25	1	1	—	—
Texas	104	3	2	26	1,724
Trust Territories	2	0	0	—	—
Utah	21	3	3	—	—
Vermont	6	0	0	1	—
Virgin Islands	1	0	0	—	—
Virginia	68	1	1	26	438
Washington	51	6	6	—	—
West Virginia	30	1	0	3	—
Wisconsin	41	0	0	—	—
Wyoming	7	1	1	2	—
TOTAL	1,877	90	77	414	16,460

Appendix E
Formerly Used Defense Sites on the NPL

This Appendix to the Annual Report provides summary information for each FUDS listed on the NPL as of the end of FY 1991. Key data are provided in Table E-1.

Table E-1
FUDS on the NPL

Site	State	HRS Score
Fisher-Calo, LaPorte	IN	52.05
Hastings Ground Water Contamination, Hastings	NE	42.24
Malta Rocket Fuel Area, Malta	NY	33.62
Marathon Battery Corporation, Cold Spring	NY	30.27
Nebraska Ordnance Plant (Former), Mead	NE	31.94
New Hanover County Airport Burn Pit, Wilmington	NC	39.39
Ordnance Works Disposal Areas, Morgantown	WV	35.62
Phoenix-Goodyear Airport, Goodyear	AZ	45.91
Sangamo Electric Dump/Crab Orchard National Wildlife Refuge (DOI), Carterville	IL	43.70
Weldon Spring Ordnance Works, St. Charles County,	MO	30.26

Fisher-Calo
LaPorte, Indiana

Service:	Department of War
Size:	443 Acres
HRS Score:	52.05
Base Mission:	Ordnance plant
IAG Status:	Not Applicable
Action Dates:	Placed on NPL September 1983; RI completed May 1989; FS completed April 1990; ROD signed August 1990
Contaminants:	Organic solvents, PCBs, inorganics, polynuclear aromatic hydrocarbons
DOD Funding to Date:	$316,150

Preliminary Assessment/ Site Inspection (PA/SI)

The former Kingsbury Ordnance Plant (KOP), constructed by Todd and Brown for the Department of War (later the DoD), began explosives manufacturing and loading operations in 1941. From 1946 through 1951, KOP was operated by the U.S. Government Ordnance Department and was used for storage and demilitarization of explosives. The American Safety Razor Company operated the plant and manufactured ordnance under government contract from 1951 until 1959, when the plant was placed on inactive status. While the plant was on inactive status, it was managed by the U.S. Rubber Company. In 1964, the property was purchased by the Kingsbury Industrial Development Management Corp. and the State of Indiana Department of Parks and Recreation (Fish and Wildlife Division) from the General Services Administration.

The Fisher-Calo Superfund Site is 443 acres, approximately 3 percent of the previous ordnance works acreage. The contamination is believed to stem from the activities of the Fisher-Calo Chemical and Solvents Corp. (FCC). FCC was primarily involved in the packaging, storage, and distribution of industrial chemicals as well as the reclamation of waste paint and metal finishing solvents. Drum storage, burial, and disposal activities have been cited by state and federal agencies.

The primary exposure pathway is through the ground water. The contaminant concentrations in each identified contaminant plume could present an unacceptable risk to human health. Water wells in the vicinity are at risk due to the migration of the contaminant plumes.

DoD received notices from EPA in regard to the Fisher-Calo Superfund Site. Conversations with the EPA project manager and EPA's counsel have indicated their initial concern was based on the asbestos siding used to construct the buildings. Any expansion of interest will apparently be based only on any specific contaminants attributed to DoD discovered during the expanded sampling work being performed by the PRP Committee's consultant. Participation in negotiations with the PRPs will be dictated by the results of the PRP consultant's expanded samp[illegible] analysis and quality assuran[illegible] the explosives results from sp[illegible] taken by USACE, Omaha District.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI was completed in May 1989, and an FS was completed in April 1990. Both the RI and FS were performed by EPA contractors.

The RI included geophysical surveys to locate buried drums or tanks; monitoring well installation; soil, sediment, and surface water sample analysis; soil gas field screening; hydrogeologic testing; and aquifer measurements.

Surface water samples from a discharge lagoon at one of the processing areas contained inorganic compound contamination and the sediment sample from the same location contained PCB[illegible] other organic contaminants. [illegible] pond areas were contaminated with inorganics and solvents.

Fisher-Calo
LaPorte, Indiana

(Continued)

Surface soils were contaminated with solvents, inorganics, and PCBs. Many surface soil contaminants were detected in the subsurface soils and the ground water.

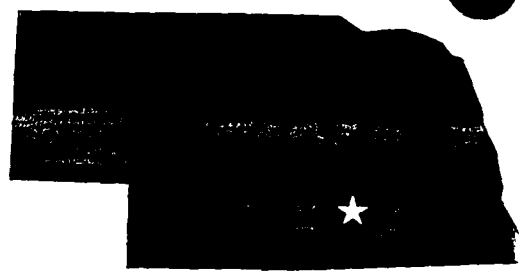
Ground water contamination included chlorinated organic solvents and VOCs.

Remedial Design/ Remedial Action (RD/RA)

The ROD was signed on August 7, 1990 and specifies a complex remedy. The ROD includes excavation and incineration of soils containing semi-volatiles and PCBs above established cleanup levels. Soil flushing or, if proven effective, soil vapor extraction for VOC contaminated soils, also is specified. Incinerator ash testing is to be performed to determine the disposal location of the ash. Ground water extraction, treatment, reinjection, and monitoring, as well as development of an asbestos handling program, are planned. A buried drum investigation and removal of drums, tanks, and containers also will be performed.

The RD/RA has not been started. Special Notice letters were issued October 10, 1990, allowing 60 days for the PRPs to make a proposal to EPA. There has not been any conclusive information showing significant DoD contaminant contribution. Additional investigative work is planned.

Hastings Ground Water Contamination
Hastings, Nebraska



Service:	Navy
Size:	2,600 Acres
HRS Score:	42.24
Base Mission:	Ammunition production, loading, and storage
IAG Status:	Not Applicable
Action Dates:	Placed on NPL 1986; ROD signed 1990
Contaminants:	Explosive compounds, VOCs and metals in ground water and soils, semi-volatiles (PAHs) in soils
DOD Funding to Date:	$10.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

The 48,753-acre Blaine Naval Ammunition Depot (NAD) was placed on the NPL in 1986 as one of seven subsites of the Hastings Ground Water Contamination Site. The facility was decommissioned between 1958 and 1966 and portions of the property transferred to the Nebraska National Guard, the Department of Agriculture and the Air Force or sold to private parties. The northwest portion of the former NAD, contains a community college and the Hastings East Industrial Park subsite (HEIP). The HEIP subsite contains much of the area where munitions production occurred. A PA/SI was not conducted at this site. However, EPA divided the former NAD into townships and contracted for PAs for each township under the Alternative Remedial Contract Strategy (ARCS) program. Those PAs involved little sampling and, under the terms of an IAG expected to be executed in the near future, the USACE Kansas City District will revisit the question of whether contamination exists at those areas. The USACE Huntsville Division conducted PAs and some clearance operations for explosive ordnance contamination and UXO in 1990 and 1991.

Remedial Investigation/ Feasibility Study (RI/FS)

During the RI, two phases of field work were conducted which involved the installation and sampling of monitoring wells, surface water, soils, sanitary sewers, and catch basins, borehole geophysical surveys, soil borings, and an ambient air quality survey. The RI data were used to prepare a baseline risk assessment, which concluded that "an unacceptable level of risk may be associated with human activities at this site." Soil and ground water are contaminated with explosive compounds, metals and semi-volatile organic compounds. Five Operable Units (OU) have been designated by EPA at the former NAD. Three OUs are associated with the HEIP subsite and are: surface soil (OU #1), ground water (OU #2) and vadose zone (OU #3). Another OU covers three subsites located in the southeast portion of the former NAD (OU #4), and one OU covers the rest of the former NAD (OU #5). An RI/FS was completed for OU #1 August 1990. RI/FS reports are progress for OUs #2, #3 and #4. A ROD was signed for OU #1 in September 1990. RODs are scheduled for OU #2 in February 1993 and OU #3 in November 1993.

Remedial Design/ Remedial Action (RD/RA)

RD for OU #1 is in progress and is scheduled for completion in 1993. The estimated cost of OU #1 is $45 million. Based on the results of the OU #4 RI/FS, contaminated surface soils from other areas of the former NAD may be included in the HEIP RA project. A RA was completed in late 1990 at the Naval Yard Dump which is included in OU #4. This RA project targeted surface debris and exposed drums.

Malta Rocket Fuel Area
Malta, New York

Service:	Army and Air Force
Size:	196.36 Acres
HRS Score:	33.62
Base Mission:	Research and Development
IAG Status:	Participation Agreement signed 1990
Action Dates:	Placed on NPL 1987; PA/SI completed 1989
Contaminants:	Carbon tetrachloride, chloroform, PCBs, trichloroethylene, boron
DOD Funding to Date:	$204,390

Preliminary Assessment/ Site Inspection (PA/SI)

The Malta Rocket Fuel Area was established by the Army in 1945 and used for rocket engine and exotic rocket fuels testing. This site was a GOCO facility. General Electric was the contractor that operated the facility from 1945 to 1964 for the federal government. At that time, the property was conveyed to the New York State Atomic and Space Development Authority. Hazardous substances were found in drinking water, surface water, septic tank liquid, and sludge, and in containers located on-site. An Early Warning Monitoring System has been installed upgradient from several public wells, which are located downgradient from the site.

Remedial Investigation/ Feasibility Study (RI/FS)

EPA has issued a unilateral order to all non-federal PRPs for the purpose of conducting an RI/FS. EPA has approved the RI work plan. Field work is scheduled to begin in October 1991.

USACE, on behalf of DoD, successfully negotiated a sidebar agreement with the other PRPs, obligating DoD to 37 percent of the cost of the RI/FS.

Remedial Design/ Remedial Action (RD/RA)

Not identified yet.

Marathon Battery Corporation
Cold Spring, New York

Service:	Army
Size:	820 Acres
HRS Score:	30.27
Base Mission:	Production of Nickel-Cadmium Batteries
IAG Status:	Not Applicable
Action Dates:	Placed on NPL 1981; Area I ROD signed September 1986; Area II ROD signed September 1988; Area III ROD signed September 1989
Contaminants:	Cadmium, nickel, cobalt, pesticides, VOCs, base/neutral extractable compounds
DOD Funding to Date:	$280,000

Preliminary Assessment/ Site Inspection (PA/SI)

The Marathon Battery site is located on the east bank of the Hudson River in the village of Cold Spring, New York. It was constructed in 1952 for the U.S. Army Signal Corps for the production of nickel-cadmium batteries. Initial operations were contracted to the Sonotone Corporation. In September 1962, Sonotone Corporation purchased the plant and added 35,000 square feet of production area. Between 1962 and March 1979, the plant was owned and operated by various private parties. In November 1980, Merchandise Dynamics, Inc. purchased the facility for a book storage and distribution facility. Marathon Battery Co.; Gould, Inc.; and Merchandise Dynamics, Inc. have been named as PRPs along with the Army. High concentrations of heavy metals were found in the marsh sediments below the outlet of the storm sewer that previously served as an emergency outlet. Concentrations of metals also have been found in the soils of the plant property and adjacent residential areas and in the building dust. The area is used by local residents for fishing, crabbing, boating, and nature observation.

In 1972, Marathon Battery Co.; Sonotone Corp.; Clevite, Inc.; and Gould, Inc. were required to remove all deposits of cadmium in excess of 900 mg/kg net weight from the Kemble Avenue storm sewer outfall area, the channel connecting the outfall area to the main body of East Foundry Cove, and the area just west of and adjacent to the marsh in East Foundry Cove. Between November 1972 and July 1973, dredging was conducted in East Foundry Cove. The dredge spoils were de-watered and buried in a clay-lined underground vault on the plant property. Studies conducted from 1976 to 1980 by NYSDEC, EPA, and New York University indicated, however, that East Foundry Cove was still contaminated, much of it at concentrations greater than 900 mg/kg.

Remedial Investigation/ Feasibility Study (RI/FS)

The site consists of three distinc areas: Area I - 270 acres of Constitution Marsh and 14 acres of East Foundry Cove Marsh; Area II - the former battery plant and property (11 acres), the dredge spoils vault, and affected residential property surrounding the plant; and Area III - 492 acres of open water of the Hudson River in the vicinity of the Village of Cold Spring pier and West Foundry Cove and 34 acres of tidal flat and East Foundry Cove. The State of New York and the EPA, with input from the PRPs, have conducted an RI/FS for all areas and issued RODs. EPA issued an Administrative Order to the PRPs on March 26, 1989 for the building decontamination, consisting of power washing and vacuuming for cadmium, dust removal, book cleaning, and disposal.

Marathon Battery Corporation
Cold Spring, New York

(Continued)

Contamination in Areas I and III

Water and sediment sampling revealed contamination with cadmium, cobalt, and nickel throughout the upper 50 cm of sediment in the Pier Area and West Foundry Cove. In East Foundry Cove, cadmium contamination in surficial sediments is found only in the 0 to 10 cm depth.

Surface water contamination by cadmium, cobalt, and nickel was not significantly different among stations during this investigation. No significant contribution of sediment-bound metals to the Hudson River could be determined from the results of this investigation.

Concentrations of the contaminant metals in surficial sediments were found to be in the thousands, tens of thousands, and hundreds of thousands of mg/kg in East Foundry Cove Marsh sediments near the Kemble Avenue storm sewer outfall. Cadmium concentration levels in surficial sediment samples collected from Constitution Marsh and Constitution Pond at 40 to 50 cm in depth had a mean cadmium concentration of 11 mg/kg with a range of 5 to 25 mg/kg. The only deep sediment sample (80 to 90 cm) that was above the detection limit had a cadmium concentration of 41 mg/kg.

Contamination in Area II

The RI/FS was prepared by an EPA contractor in April 1988. Five different media were sampled during the RI: surface soils, subsurface soils, ground water, and dust and concrete borings from the former battery plant. All media were found to be contaminated by the activities performed at the plant. On-site soils were found to be contaminated with heavy metals, VOCs, base/neutral extractable compounds, and pesticides. Levels of metal contamination decrease with distance from the former battery plant and with depth from ground surface. Metal contamination is limited to the upper 60 to 90 cm (2 to 3 feet) of the soils. The sources of this contamination are believed to be air emissions from former ventilation units and contaminated debris removed from the building but still littering the site.

Contamination in Area III

Dust samples from the building and book surfaces were analyzed for cadmium, cobalt, and nickel. Cadmium concentrations as high as 15,300 mg/kg were found. The mean concentrations of cadmium was 5,946 mg/kg. Cobalt concentrations ranged from 1.2 to 462 mg/kg, with a mean of 33.26 mg/kg, while nickel dust concentrations ranged from 36 to 21,500 mg/kg, with a mean of 6,771 mg/kg.

Approximately 5,000 cubic yards of sediment were deposited in an underground vault located on the former battery plant grounds in 1972. These sediments have cadmium concentrations ranging from 1,000 to 3,000 mg/kg. Five monitoring wells were installed around the perimeter of the dredge spoils vault, and subsurface soils and ground water were analyzed to determine whether the cadmium, cobalt, and nickel contaminated sediments had leaked from the vault. These analyses showed that contaminated sediments have not migrated from the vault.

Remedial Design/ Remedial Action (RD/RA)

The selected remedy for Areas I and III is hydraulic dredging, sediment thickening, fixation, and off-site disposal. The no action (monitoring) alternative was selected for Constitution Marsh.

The selected remedy for Area II has three specific components: ground water, soils and building dust, and the sediment vault. The no action alternative selected for the ground water requires no active cleanup effort, but does require monitoring, public education, and maintenance. Building decontamination/soil excavation/fixation/-enhanced volatilization/off-site disposal are required for the soils and building dust component. The vault cleanup is composed of sediment excavation/chemical fixation/off-site disposal.

Building decontamination is being implemented by Marathon under an Administrative Order. The remedial action for Areas I, II and III is being implemented by EPA through an IAG with the New York District. EPA is financing the remediation with mixed funds. The Army and Marathon Battery have signed a Consent Decree for Area II. Gould Inc. has not. Negotiations of the Consent Decree for Area I and III are pending. The present circumstances indicate settlement may have to be reached through litigation.

Nebraska Ordnance Plant (Former)
Mead, Nebraska

Service: Army

Size: 17,214 Acres

HRS Score: 31.94

Base Mission: The former Ordnance Plant produced 100- to 12,000-pound aerial bombs during World War II and the Korean Conflict; Currently used as an Agricultural Research Station for University of Nebraska

IAG Status: Signed September 1991

Action Dates: Placed on NPL 1990; RI/FS initiated 1989

Contaminants: Explosives, volatiles, PCBs

DOD Funding to Date: $3.23 million

Preliminary Assessment/ Site Inspection (PA/SI)

The DoD property was transferred to various groups and individuals in 1962. The major owners are currently the University of Nebraska and the Nebraska National Guard. The major portions of the former Nebraska Ordnance Site investigated included four bomb loading lines, a demolition area, a burning ground, a crystallizing plant, a bomb booster area, and various support buildings. Explosive residues were found in the soils adjacent to three bomb load lines and two explosives compounds were identified in a ground water sample taken near load line No. 2. TCE was found in three ground water monitoring wells. Bottled water is being provided to one family in the vicinity due to contamination found in their private wells.

Remedial Investigation/ Feasibility Study (RI/FS)

Additional soil and ground water samples have been taken to determine the extent of contamination. Initial sampling results have indicated that two major plumes of contamination exist. Additional exploration will be conducted to clearly define the plume boundaries. A TRC has been formed and includes representatives from the EPA, Nebraska Department of Environmental Control, Nebraska Department of Health, Lincoln Water System, Natural Resource District, University of Nebraska, and USACE.

Remedial Design/ Remedial Action (RD/RA)

Preliminary activities on RD/RA have begun; however, the major portion will be conducted after the completion of the RI/FS activities.

New Hanover County Airport Burn Pit
Wilmington, North Carolina

Service:	Army and Air Force
Size:	4 Acres
HRS Score:	39.39
Base Mission:	World War II Bomber Command and Vietnam Era Aerospace Defense Command Airfield
IAG Status:	PRP agreement signed 1990 (removal action)
Action Dates:	Placed on NPL 1989; PA/SI completed 1987
Contaminants:	Heavy metals, semi-volatiles, VOCs
DOD Funding to Date:	$132,393

Preliminary Assessment/ Site Inspection (PA/SI)

The site had several fire training stations, which consisted of a main burn pit, an above-ground fuel storage tank, a fire smoke house, one railroad tanker car, and a number of old automobiles used for fire training. The PA/SI was conducted by the State of North Carolina. Contaminated fuels were found in the 10,000-gallon above ground fuel storage tank, which is connected to the various fire training stations. DoD, New Hanover County, Cape Fear Technical Institute Foundation (Community College), and the city of Wilmington, North Carolina have been identified as PRPs. Past practices involved placing crude oil recovered from spills and storage tank waste bottoms into the burn pit, igniting the contents, then extinguishing the fire. DoD conveyed the property to New Hanover County in 1977.

Remedial Investigation/ Feasibility Study (RI/FS)

EPA completed the RI in August 1991 and provided a copy of the draft RI report to the PRPs for comments. EPA will also conduct the FS which is scheduled for March 1992.

The non-federal PRPs have signed a Consent Order issued by EPA for the removal of surface contamination in and around the main burn pit, which poses a threat to human health and the environment. This removal action was completed in November 1990. USACE has successfully negotiated a sidebar agreement with the other PRPs to provide 25 percent of the cost for the removal action.

Remedial Design/ Remedial Action (RD/RA)

EPA will conduct the RD phase, and has indicated that PRPs will have the opportunity to conduct the RA if the PRPs can agree on a negotiated percentage of responsibility.

Ordnance Works Disposal Areas
Morgantown, West Virginia

Service: Department of War

Size: 825 Acres

HRS Score: 35.62

Base Mission: Ordnance Plant

IAG Status: Not Applicable

Action Dates: Placed on NPL June 6, 1986; RI/FS for OU 1 was completed January 1988; Second (revised) ROD for OU 1 was signed September 29, 1989; the RI/FS for OU 2 was started in August 1990

Contaminants: PCBs, inorganics, carcinogenic polynuclear aromatic hydrocarbons, arsenic, mercury

DOD Funding to Date: $285,000

Preliminary Assessment/ Site Inspection (PA/SI)

The ordnance plant was built by DuPont in 1941 to produce ammonia by coking coal. The plant expanded throughout World War II producing coke, crude tar, ammonia, methanol, hexamine, formaldehyde, light oils, higher alcohols, and heavy water. The plant is separated into two OUs. OU #1 consists of the landfill and an adjoining lagoon area which was built after DoD disposed of the site. OU #2 covers the remainder of the plant. The focus of OU #2 will be the process areas. The portions of the site presently owned by General Electric, for their plastics intermediate plants, are not included in the study area. They are already involved in RCRA enforcement activities with EPA.

The site was sold in 1962 to Morgantown Community Association and immediately transferred to Morgantown Ordnance Works, Inc., which began salvage operations at the plant. Prior to the sale of the plant, DoD had leased the plant to several operators.

The major contaminants are polynuclear aromatic hydrocarbons, PCBs, arsenic, and mercury. The PCBs were at the drum staging area and were remedied in 1984. Catalyst pellets are prevalent at OU #1 and some consist of non-leachable heavy metals.

The potential receptors of principal concern are local business employees and visitors who might inhale contaminated dust/volatilized chemicals or otherwise be exposed to site-associated chemicals. Possible hot-spots are located on OU #2 where exposure to site visitors might occur by the direct contact routes of incidental ingestion and dermal absorption. OU #1 may provide similar exposure pathways if the future use scenario is adopted. Construction activities at the landfill/former lagoon area is the future use scenario described in the RI/FS for OU #1.

EPA has issued Consent Orders on OU #1 and OU #2. DoD was not named in the orders, but has offered a percentage proposal to the other PRPs. The proposal is based on DoD's investigation of the site history. A contractor was selected, and at last discussion was awaiting approval by EPA. The funding for the RI/FS being performed by Radian Corporation on OU #2 was negotiated among the active PRPs, with DoD contributing 30.24 percent of the RI/FS cost.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS for OU #2 is underway. The RI/FS for OU #1 was contracted by EPA and was completed in January 1988.

The RI/FS for OU #1 developed risk-based cleanup levels for arsenic, PAHs, PCBs, and mercury. All test pits located in the landfill area showed arsenic and PAHs above cleanup levels, with higher concentrations in the upper portions of the landfill. PAH concentrations exceed cleanup levels in an area of approximately 0.7 acres and to depths of six feet. Mercury was

detected in a water-filled trench in the open alley way splitting the main process building. This is part of the processing area of OU #2.

Remedial Design/ Remedial Action (RD/RA)

The second (revised) ROD for OU #1 prescribes a preferred remedial action alternative and a contingency remedial action alternative. The preferred alternative includes installation of a RCRA Subtitle C cap on the landfill, excavation of inorganic hot-spots exceeding the risk-based cleanup levels, and solidifying and placing the excavated material in the landfill. An on-site bioremediation treatment bed will be used on excavated organic contaminated soils and sediments. Environmental and ground water monitoring also will be performed.

Should predesign studies show that treatment levels specified cannot be achieved in a reasonable timeframe, or the PRP group elects to perform the contingent remedial action alternative initially, the bioremediation treatment method will be revised to the contingent remedial action alternative of soil washing.

ar Airport
ark NAF)

cres

1

Base ceptance, modification, preservation, depreservation, d storage of Naval aircraft

IAG Status: Not Applicable

Action Dates: Placed on NPL 1983; OU RI/FS and ROD completed 1987; RI/FS and ROD for the Final Remedy completed 1989

Contaminants: Trichloroethylene

DOD Funding to Date: $2.845 million

Preliminary Assessment/ Site Inspection (PA/SI)

The southern portion of the site includes the Loral facility (formerly Goodyear Aerospace) and the Phoenix-Goodyear Municipal Airport (formerly Litchfield Park Naval Air Field). From 1941 to 1987, Goodyear owned and operated an industrial manufacturing/assembly facility for manufacturing parts and modifying and assembling aircraft. Maintenance operations included vapor degreasing operations using TCE, plane washing, application of spraylat, and installation of kits.

TCE contamination was found in soils and ground water. Goodyear, Loral, the city of Phoenix, and DoD have all been identified as PRPs. In May 1988, USACE reached a cost share agreement with Goodyear for the OU that consists of the remediation of the Subunit A aquifer. Further negotiations or litigation are pending.

Remedial Investigation/ Feasibility Study (RI/FS)

EPA completed RI/FS work in 1989. Contaminants found in soil and ground water include organic compounds.

Ground water is found at depths of 50 to 60 feet below the surface, with the shallowest water-bearing sediment defined as Subunit A. This aquifer is separated by a clay rich unit, Subunit B, from a deeper aquifer, Subunit C. Subunit C is encountered from 190 to 300 feet below the surface and is a primary source for drinking water. Subunit A is contaminated by a 7,000-foot long plume extending southwestward from the developed portion of the site. This plume is estimated to contain 6,500 pounds of TCE. Subunit C has a broad area of contamination, extending at very low concentrations, under 10 ppb of TCE, up to three miles from the site. Higher concentrations are limited to the vicinity of the developed portion of the site. Soil contamination has been identified based on numerous soil borings conducte at the developed portion of the sit Soil concentrations have been measured up to 4,400 ug/kg (ppb). Soil contamination has been found in borings drilled on both former Goodyear and former Navy property. Contamination may largely be the result of waste generated at the Goodyear facility and disposed in storm sewers that ultimately drain to the former Navy property.

Remedial Design/ Remedial Action (RD/RA)

A ROD was approved in September 1987 for the Section 16 OU which addressed VOC-contaminated ground water in Subunit A. Remedial action for this OU ground water was developed during an OU FS completed in 1987. EPA selected extraction and air stripping as the preferred remedy. Phase I of the OU is currently operating.

Phoenix-Goodyear Airport
(formerly Litchfield Park NAF)
Goodyear, Arizona

(Continued)

The Subunit A plume remediation includes ground water extraction and treatment, followed by reinjection of the treated water. The extraction wells remove water from the downgradient half of the plume. A second phase of the project will include extraction wells and piping to address the highest concentration portion of the Subunit A plume. The treatment plant will need to be modified for the second phase with the addition of off-gas carbon treatment. Phase II design is completed.

A ROD completed in September 1989 for the final remedy addresses the vadose zone and Subunits B/C ground water contamination for the entire site. The State of Arizona concurs with EPA's selected remedy. The 1989 ROD requires soil vapor extraction (SVE) for the area containing 99 percent of the mass of contaminants. Under this alternative, VOCs would be extracted through a system including areas on both the former Goodyear and Naval Air Field properties. The ROD requires that all SVE units be equipped with emission controls.

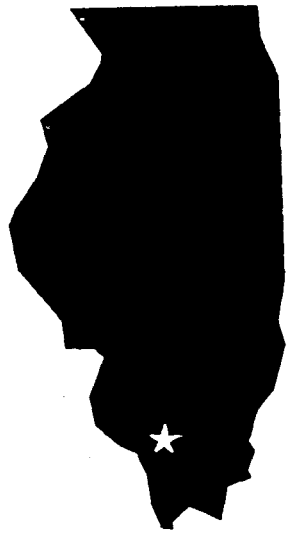
The cleanup of Subunit C requires the plume with concentration of TCE above drinking water standards be captured, piped to a central location, and treated. The treated water will be made available to the City of Goodyear, the local municipal water provider, discharged to a local irrigation district, or sent to recharge wells.

The SVE is intended to remove contaminants from soil in the target zone with minimal impacts on existing facilities and operations. Pilot studies for SVE were conducted in 1988 at the PGA site.

Goodyear Tire and Rubber Company has signed the consent decree to perform 100 percent of the work. The USACE Omaha District is negotiating a settlement with Goodyear.

A toxic tort claim has been filed against Goodyear and the Navy in two separate actions by Lufthansa Airlines. Lufthansa is a current tenant on the airport.

Sangamo Electric Dump/Crab Orchard National Wildlife Refuge (DOI)
Carterville, Illinois



Service:	Department of War
Size:	43,000 Acres
HRS Score:	43.70
Base Mission:	Ordnance manufacturing and loading
IAG Status:	Not Applicable
Action Dates:	Placed on NPL 1987; RODs signed for OU #1 and OU #2 1990; RI/FS initiated 1990 for OU #3; PRPs investigation initiated September 1990
Contaminants:	Organic solvents, inorganics, polynuclear aromatic hydrocarbons, munition residues, heavy metals, PCBs
DOD Funding to Date:	$2.10 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Illinois Ordnance Plant (IOP) located on the eastern portion of the U.S. Department of Interior's (DOI) Crab Orchard National Wildlife Refuge (CONWR) was operational from 1942 to 1945. The IOP served as a manufacturing/ loading site for high-explosive shells, bombs, and other components. The site was proposed for inclusion to the NPL in 1984, and listed in 1987. Thirty-three areas have been identified for site investigation and have been divided into four OUs.

The PA at the Refuge was completed by USACE in 1988 and limited to areas formerly associated with the IOP. The SI, which focused on 14 sites, was completed in April 1988. Results did not indicate widespread contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS has been completed for both the Metals OU and the PCB OU and RODs for both OUs have been issued. USACE awarded an RI contract to study the presence and magnitude of contamination at OU #3. Field work performed in April and May 1991 included installation of monitoring wells, soil borings, sediment sampling, and excavation of magnetic anomalies.

Additional remedial work may be required for all or part of the fourth OU.

Remedial Design/ Remedial Action (RD/RA)

The Omaha District awarded a contract on behalf of the DOI for a treatability study/remedial design for the Metals OU. This study is scheduled for completion in 1992. Work is proceeding with the RD/RA for the PCB OU. Further action for the Explosives/ Munitions OU and the Miscellaneous OU are pending completion of remaining RI/FS activities. The USACE Chicago District advertised a contract for demolition of unsafe structures in 1991. A January 1992 award is scheduled. Additional demolition contracts are scheduled for 1992.

Weldon Spring Ordnance Works
St. Charles County, Missouri

Service:	Army
Size:	15,577 Acres
HRS Score:	30.26
Base Mission:	Formerly used in support of the Ordnance Works Production Area (Bunkers, Mechanical Shop, and Housing)
IAG Status:	Pre-ROD IAG signed 1990; Effective August 1991
Action Dates:	PA/SI completed 1977; Listed on NPL 1990; RI/FS for Training Area completed 1990; RI for Ordnance Works completed 1991
Contaminants:	TNT, DNT, lead
DOD Funding to Date:	$4.4 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Weldon Spring Ordnance Works is composed of two major components: the active portion, Weldon Spring Training Area (WSTA), is a 1,655-acre area where TNT and DNT were produced during World War II; the inactive portion, Weldon Spring Ordnance Works (WSOW), is a 15,577-acre area that provided support facilities. Adjacent to the active site is the 230-acre former Atomic Energy Commission (AEC) facility, which processed uranium from 1957 to 1966. The AEC facility is located on an area that was originally part of several TNT production lines. Shortly after the plant ceased operation in 1966, a part of the AEC site was returned to the Department of Army (DA) to construct a plant for the production of the herbicide Agent Orange. The extent of the radioactive contamination was greater than anticipated and therefore the project was canceled in February 1969. The Army's involvement on the former AEC site resulted in a Memorandum of Understanding (MOU) with DOE requiring the Army to fund part of the costs associated with remediating the DOE chemical plant. Initial field investigations were conducted to determine the nature and extent of contamination at WSOW and WSTA. In 1943, water elevations and samples were collected from wells, springs, and surface waters at WSOW. Visual observations and colorimetric tests were used to identify areas where TNT contamination was indicated. In 1976, the U.S. Toxic and Hazardous Materials Agency (USATHAMA) conducted an environment assessment of WSTA. A records search and on-site investigation was carried out to estimate possible contamination by chemical, biological and radiological material and to assess the possible contaminant migration beyond the installation boundary. It was determined that the underground wastewater pipelines and several surficial locations remained contaminated from explosives manufacturing. An area containing radiological material in WSTA was identified, marked and fenced. Limited surface water quality data revealed low level concentrations of TNT in the vicinity of WSTA. USATHAMA identified several hazards on-site including partially destroyed buildings, abandoned cisterns, underground water-filled tanks and refuse from TNT manufacturing and military training exercises. Further research involved a records search and interviews with personnel who had either worked at the WSTA or had participated in a study of the area. Data collected indicated that the potential hazardous at the WSTA included contamination from explosives, radioactive materials, asbestos, DDT, sulfur and sodium compounds. The field phase entailed the identification of sources of soil and surface water contamination and the collection and analysis of soil, surface water, and sediment samples. Contaminants found in the soil included TNT, DNT, sulfates, and lead. No explosives contamination was found

Weldon Spring Ordnance Works
St. Charles County, Missouri

(Continued)

in the sediment or surface water samples. A surface investigation involved soil samples collection from one TNT plant, one sellite production plant, one waste treatment plant and both DNT processing plants. Samples from on-site and off-site surface waters and a burning ground were analyzed for nitroaromatic content, volatiles, semi-volatiles, sulfates, nitrates, sulfites, and metals. Additional sampling included soil samples from roadways for dioxin analysis and from power plant no. 1 for DDT content.

Remedial Investigation/ Feasibility Study (RI/FS)

A draft RI report was completed in June 1989. Over 5,000 soil samples were analyzed for TNT using a field screening technique. Samples from the wooden wastewater pipelines, ground water, springs, sediment, and area lakes were also collected and analyzed. A soil vapor survey of selected areas was conducted. The investigation was confined primarily to the current WSTA property. As a result of the investigation, several areas were identified as having contaminants present in various media. In October 1989, six additional sampling activities were conducted. These included 14 monitoring wells, resampling the 33 existing wells and 10 springs, air monitoring, soil sampling for lead, and wooden pipeline sampling. The TNT pipeline location was checked with ground penetrating radar at 270 locations. Preliminary information on the pipeline was gathered from 24 locations. Excavations were made at 16 locations and samples taken from 12 excavations.

Nitroaromatics and volatile organics were detected in the ground water, nitroaromatics and lead were detected in the surface soil, and nitroaromatics were detected in the wooden pipeline. Sampling activities under the WSOW RI/FS began in November 1990 and were completed in July 1991. A groundrules committee with representatives from DOE and USACE met periodically to insure there are no conflicts between the two agency's projects. Also, the Technical Review Committee, with representatives from Ft. Leonard Wood, Kansas City District, EPA, Missouri Department of Conservation, Francis Howell School District, DOE, St. Charles Countians Against Hazardous Waste, Missouri Research Park, Village of Weldon Spring Heights, and the St. Charles County Emergency Management Association meet periodically to insure their concerns are addressed in the remediation of the site.

Remedial Design/ Remedial Action (RD/RA)

RD/RA activities will begin after the RODs are signed for the site Operable Units. It is anticipated that design procurement will begin no later than 1995.

Appendix F
Base Closures

This Appendix to the Annual Report provides a list of military installations included in the Base Realignment and Closures Program (BRAC). Under this program, a total of 113 installations were identified for closure through two rounds of assessments, BRAC 88 and BRAC 90. BRAC 88 covered 86 installations while BRAC 90 covered 27 installations. The information presented in this Appendix was obtained from two documents: *Base Realignments and Closures, Report of the Defense Secretary's Commission* (December 1988), and *Defense Base Closure and Realignment Commission, Report to the President* (1991).

Base Closures

BRAC 88	BRAC 90
Department of the Army	
Fort Douglas, UT Cameron Station, VA Presidio of San Francisco, CA Coosa River Annex, AL Navajo Depot Activity, AZ Fort Wingate, NM Nike Site Aberdeen, MD Lexington Depot, KY Pontiac Storage Facility, MI Alabama Ammunition Plant, AL New Orleans Military Ocean Terminal, LA Fort Sheridan, IL Army Material Technology Laboratory, MA Tacony Warehouse, PA Hamilton Army Airfield, CA Jefferson Proving Ground, IN Nike Philadelphia, NJ Nike Kansas City, MO Cape St. George, FL Kapalama Military Reservation, HI Stand-Alone Housing Installations (52 sites) Miscellaneous Properties (4 sites) **Total: 76**	Fort Benjamin Harrison, IN Fort Devens, MA Fort Ord, CA Sacramento Army Depot, CA Harry Diamond Lab Woodbridge Research Facility, VA **Total: 5**
Department of the Navy	
Naval Station New York, NY Naval Hospital Philadelphia, PA Naval Station Galveston, TX Naval Station San Francisco (Hunters Point), CA Naval Station Lake Charles, LA **Total: 5**	Construction Battalion Center, Davisville, RI Hunters Point Annex to Naval Station Treasure Island, CA Marine Corps Air Station Tustin, CA Naval Air Station Chase Field, TX Naval Air Station Moffett Field, CA Naval Station Long Beach, CA Naval Station Philadelphia, PA Naval Station Puget Sound, Sand Point, WA Philadelphia Naval Shipyard, PA **Total: 9**

Base Closures	
BRAC 88	**BRAC 90**
Department of the Air Force	
Chanute Air Force Base, IL George Air Force Base, CA Mather Air Force Base, CA Norton Air Force Base, CA Pease Air Force Base, NH **Total: 5**	Bergstrom Air Force Base, TX Carswell Air Force Base, TX Castle Air Force Base, CA Eaker Air Force Base, AR England Air Force Base, LA Grissom Air Force Base, IN Loring Air Force Base, ME Lowry Air Force Base, CO Myrtle Beach Air Force Base, SC Richards-Gebaur Air Reserve Station, MO Rickenbacker Air Guard Base, OH Williams Air Force Base, AZ Wurtsmith Air Force Base, MI **Total: 13**

List of Acronyms

AAFES	Army Air Force Exchange Service
AAP	Army Ammunition Plant
ABL	Allegheny Ballistics Lab
AD	Army Depot
ADA	Army Depot Activity
AEC	Atomic Energy Commission
AEDC	Arnold Engineering Development Center
AFB	Air Force Base
AFDW	Air Force District of Washington
AFIT	Air Force Institute of Technology
AFRB	Air Force Reserve Base
AFRC	Air Force Reserve Center
AFRTA	Armed Forces Reserve Training Area
AFS	Air Force Station
AGS	Aerospace Generation Squadron
AIMD	Aircraft Intermediate Maintenance Department
AMSA	Army Maintenance Support Activity
ANG	Air National Guard
ARDEC	Armament Research, Development, and Engineering Center
ASF	Aviation Support Facility
ASTROGRPDET	Astronautics Group Detachment
ATSDR	Agency for Toxic Substance and Disease Registry
AWQC	Ambient Water Quality Criteria
BDDR	Building Demolition and Debris Removal
BNA	Base-Neutral and Acid Extractable Organics
BRAC	Base Closure and Realignment Acts
CA	Cooperative Agreement
CB	Construction Battalion
CBC	Construction Battalion Center
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFC	Chlorofluorocarbon
CHESDIVNFEC	Chesapeake Division, Naval Facilities Engineering Command
CHESNAVFACENGCOM	Chesapeake Division, Naval Facilities Engineering Command
COMNAVDIST	Headquarters Naval District
CONUS	Continental United States
DA	Department of the Army
DDRE	Defense Depot Region East
DDT	Dichloro-diphenyl-trichloro-ethane
DDTC	Defense Depot Tracy California (now known as Defense Depot Region West-Tracy)
DEH	Directorate of Engineering and Housing
DER	Department of Environmental Resources
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DEWLINE	Defense Early Warning Line
DFSP	Defense Fuel Supply Point
DGSC	Defense General Supply Center
DIPEF	Defense Industrial Plant Equipment Facility
DLA	Defense Logistics Agency
DNSC	Defense National Stockpile Center

DNT	Dinitro-toluene
DoD	Department of Defense
DOE	Department of Energy
DOI	Department of the Interior
DPM	Defense Priority Model
DRMO	Defense Reutilization and Marketing Office
DSMOA	Defense and State Memorandum of Agreement
DTRESCEN	David Taylor Research Center
ECS	Equipment Concentration Site
EE/CA	Engineering Evaluation/Cost Analysis
E/P	Evaporation/percolation
EOD	Explosive Ordnance Disposal
EPA	Environmental Protection Agency
ERADCOM	Electronics Research and Development Command
FASOTRAGRUPACDET	Fleet Aviation Specialized Operational Training Group
FASWTC	Fleet Antisubmarine Warfare Training Center
FCTC	Fleet Combat Training Center
FFA	Federal Facilities Agreement
FFS	Focused Feasibility Study
FLTRGGRA	Fleet Training Group
FLTSURSPTCMD DET	Fleet Surveillance Support Command Detachment
FS	Feasibility Study
FUDS	Formerly Used Defense Sites
FY	Fiscal Year
GAC	Granulated Activated Carbon
GOCO	Government Owned/Contractor Operator
GPM	Gallons per Minute
GWTP	Ground Water Treatment Plant
HAZMIN	Hazardous Waste Minimization
HRS	Hazard Ranking System
HSWWA	Hazardous and Solid Waste Amendments
HTW	Hazardous or Toxic Waste
HWD	Hazardous Waste Disposal
IAG	Interagency Agreement
IAP	International Airport
IAS	Installation Assessment Study
INACTSHIPDET	Inactive Ship Maintenance Facility Detachment
IRA	Interim Remedial Action
IRM	Interim Remedial Measure
IRP	Installation Restoration Program
IRTCG	Installation Restoration Technology Coordinating Group
ISV	In-Situ Volatilization
IWTP	Industrial Wastewater Treatment Plant
LAP	Load-Assembly-Pack
LBAD	Lexington-Bluegrass Army Depot
MAP	Municipal Airport
MCAGCC	Marine Corps Air-Ground Combat Center
MCAS	Marine Corps Air Station
MCB	Marine Corps Base

MCCDC	Marine Corps Combat Development Center
MCL	Maximum Contaminant Level
MCLB	Marine Corps Logistic Base
MCMWTC	Marine Corps Mountain Warfare Training Center
MCRTC	Marine Corps Reserve Training Center
MEK	Methyl Ethyl Ketone
MEP	Master Environmental Plan
MOU	Memorandum of Agreement
NAC	Naval Avionics Center
NADC	Naval Air Development Center
NADEP	Naval Aviation Depot
NAEC	Naval Air Engineering Center
NAF	Naval Air Facility
NALF	Naval Auxiliary Landing Field
NAPC	Naval Air Propulsion Center
NAS	Naval Air Station
NATO	North Atlantic Treaty Organization
NAVCAMS	Naval Communication Area Master Station
NAVENPVNTMEDU	Navy Environmental and Preventive Medicine Unit
NAVEODTECHCEN	Naval Explosive Ordnance Disposal Technology Center
NAVFAC	Naval Facilities
NAVHOSP	Naval Hospital
NAVMAG	Naval Magazine
NAVMARCORESCEN	Navy and Marine Corps Reserve Center
NAVMEDCOMNWREG	Naval Medical Command, Northwest Region
NAVPETOFF	Navy Petroleum Office
NAVPETRES	Naval Petroleum Reserve
NAVPHIBASE	Naval Amphibious Base
NAVRADSTA	Navy Radio Station
NAVRECCEN	Naval Recreation Center
NAVREGDENCEN	Naval Regional Dental Center
NAVRESFAC	Naval Reserve Facility
NAVRESMAINTRAFAC	Naval Reserve Maintenance Training Facility
NAVSCSCOL	Navy Supply Corps School
NAVSECSTA	Naval Security Station
NAVSHIPREPFAC	Naval Ship Repair Facility
NCO	Non-Commissioned Officer
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NCS	Naval Communication Station
NCTAMS	Naval Computer and Telecommunication Area Master Station
NESEC	Naval Electronic Systems Engineering Center
NETC	Naval Education & Training Center
NFD	Navy Fuel Depot
NFRAP	No Further Response Action is Planned
NG	National Guard
NIROP	Naval Industrial Reserve Ordnance Plant
NMCRC	Navy and Marine Corps Reserve Center
NOS	Naval Ordnance Station
NOSC	Naval Ocean Systems Center

NPDES	National Pollutant Discharge Elimination System
NPGS	Naval Post Graduate School
NPL	National Priorities List
NPPS	Navy Publishing and Printing Service
NPPSO	Navy Publishing and Printing Service Office
NPRO	Naval Plant Representative Office
NRC	Naval Reserve Center
NRL	Naval Research Laboratory
NRL UWS REF DET	Naval Research Lab Underwater Sound Reference Detachment
NRTF	Naval Radio Transmitting Facility
NS	Naval Station
NSA	Naval Support Activity
NSB	Naval Submarine Base
NSC	Naval Supply Center
NSD	Naval Supply Depot
NSGA	Naval Security Group Activity
NSWC	Naval Surface Warfare Center
NSY	Naval Shipyard
NTC	Naval Training Center
NTIC	Naval Technical Intelligence Center
NUWES	Naval Undersea Warfare Engineering Station
NUSC	Naval Underwater Systems Center
NWC	Naval Weapons Center
NWS	Naval Weapons Station
NWIRP	Naval Weapons Industrial Reserve Plant
OBS	Observatory
OEW	Ordnance and Explosive Waste
OLF	Outlying Landing Field
OHW	Other Hazardous Waste
OMB	Office of Management and Budget
OMS	Organizational Maintenance Squadron
OSHA	Occupational Safety and Health Act
OU	Operable Unit
PA	Preliminary Assessment
PACAF	Pacific Air Force
PAH	Polynuclear Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PCE	Perchloroethylene
PDO	Property Disposal Office
PMRF	Pacific Missile Range Facility
PMTC	Pacific Missile Test Center
POL	Petroleum, Oil, and Lubricants
PPB	Parts per Billion
PPM	Parts per Million
PRP	Potentially Responsible Party
PWC	Public Works Center
RA	Remedial Action
RADC	Radioactive Disposal Committee
RCRA	Resource Conservation and Recovery Act of 1976

RD	Remedial Design
RD&D	Research, Development and Demonstration
RDX	Royal Demolition Explosive
RES TRNG	Reserve Training
RFA	RCRA Facility Assessment
RFI	Remedial Feasibility Investigation (RCRA Facility Investigation)
RI	Remedial Investigation
ROD	Record of Decision
RR	Rapid Response
RRS	Radar Remote Site
SAC	Strategic Air Command
SARA	Superfund Amendments and Reauthorization Act
SAT COM	Satellite Communication
SDWA	Safe Drinking Water Act
SFG RSL	Safeguard Remote Sprint Launch
SI	Site Inspection
SIMA	Shore Intermediate Maintenance Activity
SPCC	Ships Parts Control Center
SUPSHIP	Supervisor of Shipbuilding Conversion and Repair
SWMU	Solid Waste Management Unit
SWNAVFACENGCOM	Southwest Division, Naval Facilities Engineering Command
TCA	Trichloroethane
TCE	Trichloroethylene
TNT	Trinitrotoluene
TRC	Technical Review Committee
USACE	United States Army Corps of Engineers
USARC	United States Army Reserve Center
USATHAMA	United States Army Toxic and Hazardous Materials Agency
USGS	U.S. Geological Survey
USMAWP	United States Military Academy, West Point
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOA	Volatile Organic Analyte
VOC	Volatile Organic Compound

DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION

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	Prepare Reply for Staff Director's Signature		Clear Reply with
	Reply Direct (forward copy to Exec Sec)		Coordinate Reply with

SUBJECT/REMARKS FROM LES ASPIN CHAIR OF HOUSE ARMED SERVICES CMTE.
"A NEW BOTTOM-UP BASIS FOR OUR MILITARY FORCES"
A. THE FIRST BUILDING BLOCK OF A NEW STRATEGY
B. SIZING AND SHAPING OUR NEW CONVENTIONAL FORCES → A THREAT-DRIVEN METHODOLOGY
C. MAKING SURE WE CAN BUILD WHAT WE NEED AFTER THE DRAWDOWN
D. THINKING THROUGH DEFENSE 1997 ALTERNATIVES
E. A NEW THREAT-BASED STRATEGY FOR OUR NUCLEAR POLICY

CLEARANCE SIGNATURE

ACTION DUE DATE	ROUTING DATE	RECEIPT DATE	EXEC SEC MAIL DATE
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January 15, 1992

MEMORANDUM

To: Colleagues

From: Les Aspin, Chairman, House Armed Services Committee

RE: The First Building Block of a New Strategy:

A New Bottom-Up Basis for Our Military Forces

- Attached is the first of three working papers about which I reported to you a couple of weeks ago. I hope they will contribute to our development of a new defense strategy for the post-Soviet world.

- As you will see, this first paper proposes a new threat-based method for shaping and sizing our new forces. Specifically, I suggest:

  - that we now systematically inventory the real world threats of the post-Soviet world, and

  - that we shape and size our forces for the 90's to deal with these threats.

For forty years our defense was designed to deal with the Soviet threat -- a threat that has now disappeared.

There has been a profound shift in the bedrock requirements of American security. We need a new defense strategy because the old way of shaping and sizing our forces simply doesn't make sense any more.

- The paper further argues that none of the alternatives to a threat based force structure, which have been proposed, offer any realistic guidance of how much of what is enough.

  We need a strategically sound, bottom up approach to determine what we really need militarily.

  Otherwise we will likely be drawn into a divisive political wrangle, which could produce a defense budget by subtraction -- simply buying less of the same old Cold War forces.

  We need to agree on a strategy first and then decide on the right budget number based on this strategy.

- The paper also suggests some significant differences between the old and new threats. For example:

  - In the old world, there was only one threat -- the Soviet Union. In the new world, there will be diverse threats.

  - In the old world, we knew what threatened us. In the new world, we will have to learn what threatens us.

  - In the old world, the policy of deterrence reduced the threat of nuclear war. In the new world, deterrence will not always stop an adversary from threatening Americans and American interests.

- I hope you'll have a chance to look this paper over. I offer it as the first cut on a very difficult piece of work we need to think through together.

  I would very much appreciate it if you would let me know of any suggestions you have to improve this approach.

- I'll be back in touch with you shortly with copies of the second and third studies.

National Security in the 1990s: Defining a New Basis for U.S. Military Forces

Rep. Les Aspin, Chairman
House Armed Services
Committee

Before the

Atlantic Council
of the United States

January 6, 1992

INTRODUCTION

The security environment for the United States has changed dramatically in the last two years. In a remarkably short time, the debate has moved from how to contain the Soviet Union, to how to provide emergency assistance to what remains of this one-time nuclear superpower. This fundamental shift reflects the two revolutions of the new era in the former Soviet Union.

The first revolution began when President Mikhail Gorbachev announced to the United Nations on December 7, 1988, that he would withdraw some Soviet troops from Eastern Europe and unilaterally reduce Soviet forces. That revolution ended in November of 1989 when the Berlin Wall came down, signaling the end of the Warsaw Pact and the end of Moscow's domination of Eastern Europe.

Although that revolution left the Soviet Union intact, the collapse of the conventional threat to Europe allowed Secretary of Defense Dick Cheney, in the summer of 1990, to come up with a proposal to reduce U.S. force structure — not spending, but force structure — by 25 percent over six years. President Bush and Congress subsequently reached a budget agreement that included this build down. The Pentagon also came up with the Base Force concept, which was what the U.S. military would look like at the end of the build down. This Base Force, however, did not represent a new conceptual approach for a new security era but was essentially "less of the same," that is, a downsized force largely shaped by Cold War priorities.

The Administration's 25 percent build down plan and the Base Force has been remarkably resilient. President Bush announced the Base Force on August 2, 1990, the same day that Saddam Hussein invaded Kuwait. During and after Operations Desert Shield and Desert Storm, many called for changes in the defense budget. Some wanted to increase it because Iraq showed it was still a dangerous world for Americans. Others wanted to lower the defense budget reasoning that since the United States had prevailed so quickly and decisively, it could get by with less defense. The 25 percent reduction, the Base Force and the budget agreement survived these assaults handily.

The hardiness of the Base Force concept is not surprising. It was, after all, a significantly smaller force which responded to former CIA Director William Webster's declaration that there had been an irreversible change in the military threat, namely the end of the Warsaw Pact threat to Europe. But the Base Force was still a robust force that hedged strongly against the risk that the old Soviet threat might be revived. This all too accurately responded to the concern of Americans that the course of events inside the Soviet Union itself was not irreversible and that an old-style leadership could regain control of the massive Soviet arsenal.

The second revolution began in August 1991, when hardliners in Moscow attempted to turn the clock back and resurrect the old totalitarian ways. This attempt did not merely fail, it accelerated change, fostered the reform agenda and ultimately hastened the demise of the union itself. Now, there are sovereign republics, a new Commonwealth of Independent States and a disintegrating Red Army.

As this second revolution unfolded, a second debate on whether to make further changes in the U.S. defense posture began. President Bush opened the debate on September 27 when he announced that the United States would remove unilaterally a whole class of weapons — tactical nuclear weapons on land and at sea — and sought to put the genie of multiple warheads on land-based ballistic missiles back in the bottle for good. By taking these actions, the President legitimized the notion that unilateral cuts could be in the U.S. national interest. The President was correct to act unilaterally on tactical weapons, but soon others were saying that the United States should not stop there.

The President's speech reflected a fundamental change in the way Americans think about the Soviet threat. President Bush announced that he was taking U.S. bombers off alert, stopping work on mobility for U.S. land-based missiles and speeding up the reductions in U.S. forces required by the START agreement. These actions reflected the implicit judgment that the Soviet Union after the coup was a place much less likely to start a nuclear war than it was before. The number of Soviet strategic nuclear systems had not changed, but the will and intent to use them had.

This is a big change. In the past, the Administration had been firm that decisions had to be based on Soviet capabilities. For the first time, the President was willing to base actions on Soviet intentions. In fact, President Bush stated in his September 27 speech that the Soviet Union "is no longer a realistic threat."

During the 40 years of Cold War, the Soviet threat — Soviet military power fused with a hostile and expansionist ideology — dominated U.S. foreign and defense policy. The United States sought to contain Soviet expansionism through a complex system of alliances backstopped by a large active-duty and reserve military force. U.S. military forces were forward deployed around the periphery of the Soviet Union. The two superpowers developed massive strategic nuclear forces. Regional conflicts throughout the world became proxies for the East-West conflict. The risk of escalation to total war brought both rigidity and stability to the international arena. Security issues dominated the relations between nation-states.

The old Soviet threat dominated U.S. military planning. It determined how big the defense budget was, how U.S. forces were structured and how U.S. military equipment was designed. Over half the Cold War defense budget was spent on defending Europe against the Warsaw Pact threat. The arms competition with the Soviets drove spending on U.S. strategic forces. Maintaining U.S. technical superiority was a response to the massiveness of the Soviet threat.

The end of the Soviet threat will therefore make profound changes in the way we provide for our security in the 1990s. It will affect how Americans think about security and their view of what threatens them. It will change the level and types of military forces that Americans will want, and how they will want these forces used.

Understanding the differences between the old and new threat environment is critical. There is no question that the new security environment for the United States is less threatening. While the strategic weapons of the former Soviet Union still exists, the United States is no longer locked in a struggle for survival with the Soviet Union. But as Americans quickly learned on August 2, 1990, the day Iraq invaded Kuwait, the world is still a troublesome place and American lives and interests can be threatened. What Americans need now is a new way to build its national defense that meets the real requirements of the new era.

DOES THE CONCEPT OF THREATS STILL MAKE SENSE?

Now that the old Soviet threat is gone, the first question is whether the idea of threats is still useful. The Chairman of the Joints Chiefs of Staff, General Colin Powell, thinks not. He has stated repeatedly that "We no longer have the luxury of having a threat to plan for" and that the Base Force "is no longer really a threat-based force." General Powell and other military spokesmen have offered a number of other justifications for sizing and structuring U.S. forces.

Minimum Required for a Superpower. General Powell told *The Washington Post* on May 31, 1991 that "We are the major player on the world stage with responsibilities [and] interests around the world" and we need to retain that superpower capability. Former Defense Secretary James Schlesinger wrote recently in *Foreign Policy* that the basis for future U.S. forces should "not simply be the response to individual threats, but rather that which is needed to maintain the overall aura of American power."

This concept provides little basis for determining how much is enough. Maintaining the aura of a superpower is largely a matter of perception and is based as much upon will as capability.

Capabilities-Based Force Structure. Senior military officials have used a capability-based approach in two different ways. General Powell, on the one hand, is focused on the capabilities of others: he told the Senate Armed Services Committee on October 17, 1991 that the "Base Force is the minimum force level we should go to in light of the geo-political situation as I see it....It is a force that's designed to take a hard look at the capabilities of potential opponents around the world, and we still have to keep in mind the Soviet Union." Senior U.S. Army officials, on the other hand, emphasize strategic capabilities required of U.S. forces, such as an ability to reconstitute for global war or project into a regional theater "X" number of heavy divisions in "Y" amount of time.

This approach also provides little realistic guidance. Adding up the capabilities of all potential opponents ignores budget realities and is indiscriminate, much like the old Soviet threat without the Soviet. Moreover, deciding what capabilities are required <u>of</u> U.S. forces cannot be done in a vacuum and still requires determining what these force are <u>for</u>.

Minimum Required to Maintain Organizational Health. In his renomination hearing before the Senate Armed Services Committee on September 27, 1991, General Powell said that his principal challenge over the next several years was to reduce forces "in a sensible way, so we don't break the force, we don't go below coherent levels in our force structure." He added that he didn't foresee changes that would lead him to go below Base Force levels, because he believes "we're reaching probably the minimum or are at the minimum with respect to the coherence of the individual services."

It is difficult to extract any guidance from this approach. Healthy organizations can be maintained over a wide range of sizes. This is an exercise in transition planning, not force planning.

MOVING TOWARDS A THREAT-BASED FORCE STRUCTURE

The primary reason Americans want to have military forces is to have the option of fighting when other means fail. During the Cold War, Americans supported a huge military establishment because of the Soviet threat. And in this new post-Soviet world, Americans will want military forces to ward off real threats. There is no alternative to a threat-based force structure, that is, one that is sized and shaped to cope with the "things" that threaten Americans.

During the Cold War, it was clear to all Americans what that "thing" was — the Soviet Union. In the post-Soviet world, it is not so clear. But one fact is certain — Americans are willing to fight only when the stakes are important enough to justify risking the lives of American men and women. Americans are concerned about a lot of things — drugs, crime, global warming, AIDs, the budget deficit — but they are only willing to use military force for very important things. Thus, it is critical to ***identify threats to U.S. interests that are sufficiently important that Americans would consider the use of force to secure them.*** Understanding the new threats of the post-Soviet world, that is, identifying where Americans might need military forces to ward off threats to important interests, is the only realistic basis for sizing and shaping U.S. forces in the decade ahead.

THE WAR IN THE PERSIAN GULF — A DEFINING EVENT

The crisis in the Persian Gulf was the first crisis of the post-Soviet world. In fact, it probably would not have happened during the Cold War — the Soviets would not let a client state like Iraq challenge vital U.S. interests because of the fear that the crisis could escalate to global war. Saddam Hussein understood the new realities of the post-Soviet world. He told his fellow Arab leaders in February 1990 that only a new strongman at the head of a unified Arab people could balance the United States now that the Cold War was over and the United States was unchecked by Soviet power.

For Americans, the Persian Gulf crisis was shock therapy. Americans were still trying to absorb the end of the Cold War when Saddam Hussein's invasion of Kuwait thrust them into the post-Soviet world. He not only shattered the stability and predictability of the Cold War era, but he posed perhaps the most demanding challenge of the new era, a rogue power with mass destruction weapons and a strong bent for terrorism. Americans were not simply introduced to the new world, they were immersed in it.

The crisis and war in the Persian Gulf will deeply affect how Americans think about issues of war and peace in the years to come. Americans learned something about themselves in the Persian Gulf. Saddam Hussein's invasion of Kuwait ended, or perhaps preempted, any complacency that might have come to the victors of the Cold War. But the decisive reversal of Saddam Hussein's aggression also added immeasurably to American self-confidence, a resource on which Americans will draw in meeting the challenges of the new era.

From this perspective, the war in the Persian Gulf is a defining event. Americans learned a great deal about what will threaten them in the post-Soviet world and how these threats must be dealt with. In many ways, Saddam Hussein is the prototype or model for the post-Soviet threat. Understanding the nature of the threat he posed is a vital first step toward a basis for sizing and shaping the new American force.

Gulf War: The New Threat — Non-Deterrable, Terrorist, Armed with Nukes. Iraq's seizure of Kuwait was a direct challenge to American vital interests. It threatened Western access to oil, it stood as a model for other would-be aggressors, and it made real the dangers of nuclear proliferation. It also demonstrated that in a world where there is little risk of escalation to total war — the great inhibitor of the Cold War — wars are more, not less, likely.

During the Cold War, the principal American strategy was deterrence. U.S. retaliatory threats deterred a Soviet nuclear attack. A Soviet conventional attack on Europe was to be deterred by either NATO's threatened first use of nuclear

weapons or a NATO conventional defense robust enough to make credible the risk of escalation to nuclear war. Soviet-inspired conflicts that could not be deterred, such as "national wars of liberation," sometimes were fought, often with disastrous consequences as in Vietnam.

Saddam Hussein was non-deterrable. Before the August 2, 1990 invasion, perhaps Saddam Hussein should have known the United States would not let him get away with it, but the Bush Administration was sending mixed signals. But by November, American intent was clear, and there should have been no mistake. The buildup of American forces in the Persian Gulf during Operation Desert Shield would have convinced any Soviet leader that the Americans were serious and that it was time to back off. However, the overwhelming threat of force did not compel Saddam Hussein to withdraw from Kuwait, because he believed that Americans had no staying power and would not persist once they started taking casualties. As a result, the United States had limited options — Iraq had to be driven out of Kuwait.

Saddam Hussein brought new meaning to the word terrorism. Americans had become accustomed to terrorist attacks by non-state groups and to state-sponsored terrorism. In fact, before the Gulf war, regional experts warned that an American attack on Iraqi forces occupying Kuwait would trigger a worldwide surge in terrorist attacks on Americans. This fear proved to be greatly exaggerated, in part because Western counterterrorism efforts were effective.

Americans have had little experience, however, with state terrorism other than the taking of the American Embassy in Teheran during the Carter Administration. Saddam Hussein, however, broke every known rule or convention of military warfare when he:

— took civilians hostage after the U.S. sent troops to Saudi Arabia;

— used civilian hostages as human shields to deter an American air attack;

— raped and pillaged Kuwait;

— abused and paraded POWs during the war;

— deliberately targeted civilian populations when he launched Scud missiles against Saudi Arabia and Israel;

— deliberately attacked civilians in a non-combatant state when he launched Scud missiles against Israel;

— released huge amounts of oil into the Persian Gulf in an effort to poison the water supply of Saudi Arabia;

— set fire to over 500 oil wells as a final act of vengeance as his forces were driven from Kuwait.

Saddam Hussein had no effective military options, but had terrorist options, and he used them. More American lives were lost when a Scud missile struck a barracks housing American reservists than were lost in combat.

Saddam Hussein also demonstrated the potential dangers posed to Americans by the spread of weapons of mass destruction. Before the Gulf war, military experts warned that Iraq would use chemical weapons against American forces because it had done so before against Iran. It is still not clear why Saddam Hussein didn't use chemicals, although prisoner interrogation reports suggest that the Iraqi military was afraid that the U.S. might retaliate in kind.

American concern about the spread of nuclear technology grew after the war when U.N. inspections discovered that (1) Iraq's nuclear weapons program was much more advanced than U.S. intelligence agencies had thought and (2) much less had been destroyed during the bombing campaign than previously estimated. In view of Saddam Hussein's well-demonstrated penchant for terrorism, there is little doubt that the crisis in the Gulf would have turned out differently had he possessed nuclear weapons.

The role of nuclear weapons will change in the post-Soviet world. When asked what he learned from the Gulf war, the Indian military chief of staff is reported to have said, "Never fight the U.S. without nuclear weapons." While this story may be apocryphal, its importance is not — only mass destruction

weapons, particularly nuclear ones, can offset huge U.S. advantages in conventional military power. Nukes in the hands of thugs like Saddam Hussein won't give rogue leaders the wherewithal to win a fight against the United States, but they could be used as instruments of terror against American forces and allies. American concern about the dangers posed by the spread of nuclear weapons grew as the Soviet Union disintegrated and the risk grew that nuclear weapons and know-how might leak out of the collapsing nuclear superpower and fall into the wrong hands.

During the Cold War, the principal threat was the Soviet monolith, while in the Persian Gulf, there were several threats — a regional power, terrorism, and nuclear proliferation — that are non-deterrable in nature. The survival of the United States as a nation was not at stake, but important American interests were and Americans had to go to war to secure them. As Table 1 illustrates, the new post-Soviet threat is, in many ways, more disturbing and troublesome than the old Soviet threat. The old threat was bigger, but more manageable. The new threat is more alien to Americans and is more difficult to understand and handle.

TABLE 1: THE CHANGING THREAT

Old	New
Single (Soviet)	Diverse
Survival at Stake	Americans Interests at Stake
Known	Unknown
Deterrable	Non-Deterrable
Strategic Use of Nukes	Terroristic Use of Nukes
Overt	Covert
Europe-Centered	Regional, Ill-Defined
High Risk of Escalation	Little Risk of Escalation

Gulf War: The New Political Context — Complex, Fluid. The East-West conflict of ideologies dominated the Cold War years. Anti-communism was the primary driver of American foreign policy. In the post-Cold War era, there are a host of ethnic, national, religious and economic conflicts that can turn violent, whether in the Persian Gulf, the former Soviet Union or Yugoslavia. The rigidity of Cold War bipolarity has been replaced by multipolar complexity and fluidity.

Harvard professor Samuel Huntington noted in a prescient article about a year ago that:

> The international politics of the Persian Gulf could be an extreme foretaste — almost a caricature — of what global politics could be like in the future. Iraq invades Iran. Iran mobilizes its strength and threatens to defeat Iraq. Kuwait, the United States and other countries provide assistance to Iraq. An end to the fighting is negotiated. Iraq invades its former backer, Kuwait. The United States comes to Kuwait's help and puts together a coalition of diverse countries, including both NATO allies and the Soviet Union, both Egypt and Syria. The U.S. continues to classify Syria as a state supporting terrorism. Shifting and ambivalent relationships like these did not typify the Cold War but they may be typical of the post-Cold War world. All in all, the emerging world is likely to lack the clarity and stability of the Cold War and to be a more jungle-like world of multiple dangers, hidden traps, unpleasant surprises and moral ambiguities.

In the Gulf crisis, it was strong Soviet support that enabled the U.S. to form a multinational coalition that operated under a U.N. mandate. On the other hand, some Western allies had to be politically bludgeoned into supporting the war, even though their economic interests at stake were greater than those of the United States. NATO as a formal alliance had no role even though, by most definitions, the crisis in the Gulf was a collective security problem for the West. As Samuel Huntington observed, the Cold War "world of `good guys and bad guys' will give way to a world

of 'grey guys'" as the adversarial relationship between East and West changes and the economic competition among Western powers comes to the fore.

This ambiguous, complicated and changing security environment is not a comfortable one for Americans. They are used to the certitudes of the Cold War when U.S. foreign policy could be expressed as one-word bumper sticker, "containment." The post-Soviet world bumper sticker, "less threatening, more complicated," offers no clear cut guidance. As Table 2 illustrates, Americans will find it more difficult to understand what the threats are and when they are important enough to consider the use of force. But the Persian Gulf crisis leaves little doubt that Americans will face these choices in the decade ahead.

TABLE 2: THE CHANGING CONTEXT

Old	New
Bipolar Rigidity	Multipolar Complexity
Predictable	Uncertain
Communism	Nationalism/Religious Extremists
U.S. Dominant Western Power	U.S. Militarily No. 1, Not Economically
Fixed Alliances	Ad Hoc Coalitions
"Good Guys and Bad Guys"	"Grey Guys"
U.N. Paralyzed	U.N. Viable

Gulf War: The New Military — Decisive, Self-Reliant. Operation Desert Storm was a stunning military victory and Americans saw it all on TV. Although most Americans know intuitively that future conflicts are not likely to go as well as the Gulf war did, what happened in the Gulf will affect how Americans think about use-of-force questions.

The following are among the most important broad lessons learned from the Gulf War:

— Neither the American over-the-horizon commitment nor the off-shore naval presence deterred Saddam Hussein from invading Kuwait. Combat power had to be projected into the region and then used to force Iraq out of Kuwait.

— U.S. high-tech military weaponry works. Offensively, it provides Americans the capability to fight devastating wars with minimal risk of casualties. Defensively, it promises an ability to protect Americans against the terrorist use of mass destruction weapons.

— The U.S. military's investment in people and training paid off big time. The all-volunteer force was a big success as American men and women fought superbly. Americans place a very high value on the life of each soldier and, as reflected in the mounting controversy over friendly fire incidents, do not want American lives wasted or risked lightly.

— The projection of effective combat power from American bases requires a mix of capabilities that must be carefully balanced. The importance of lift and logistic support were reinforced during Operation Desert Shield. Despite the dramatic achievements of the 39-day air campaign, ground forces were needed to eject the Iraqi army from Kuwait. The demands that high-tech warfare place on intelligence-gathering and information-processing were also made clear.

These lessons learned from the Gulf war do not tell military planners how many widgets to buy, but as Table 3 illustrates, they do suggest what kind of military force Americans want — one that is self-reliant, exploits American technology advantages and is capable of taking decisive action without risking large numbers of American lives. And, of course, Americans want this kind of capability at much lower price than they were willing to pay for military forces during the Cold War.

TABLE 3: THE CHANGING MILITARY

Old	New
Attrition Warfare	Decisive Attacks on Key Nodes
War by Proxy	Direct Involvement
High Tech Dominant	High-Medium-Low Tech Mix
Forward Deployed	Power Projection
Forward Based	U.S. Based
Host-Nation Support	Self-Reliant

THE NEW THREATS — A LARGER INVENTORY AND MORE BROADLY DEFINED

Americans understand the new threat environment. In a May 1990 Gallup poll asking Americans what posed a greater threat, Soviet military power or terrorism, 82 percent said terrorism while only 15 percent cited Soviet military power. When asked how seriously they viewed the threat posed by a dictator who sponsors terrorism or acquires mass destruction, between 55 and 59 percent of Americans viewed the threat as extremely serious and more than 90 percent believed these were serious threats to

U.S. and international security. By contrast, in a poll taken in November 1991, only 4 percent of Americans thought the emerging Soviet republics constituted a very serious threat, with another 16 percent believing they posed a serious threat. About a third of Americans believed the emerging republics were not a threat at all.

Americans also understand that force might be necessary to cope with these new threats. A July 1991 AP poll found that 86 percent of Americans considered preventing Iraq from developing nuclear weapons to be a good reason for going to war. Moreover, about three quarters of Americans favored resuming military action against Iraq if the Iraqis refused to observe the U.N. resolution mandating the destruction of their nuclear capability. The frustration over the threat posed by Saddam Hussein and his nuclear weapons program has toughened the views of Americans: a June 1991 CBS/New York Times poll indicated that 69 percent of Americans believed the United States should have continued fighting to force Saddam Hussein from power; an early December poll taken by the Americans Talk Issues Foundation reveals that 82 percent of Americans now take that view.

The Persian Gulf crisis and war highlighted the most important threats of the new era — the spread of nuclear weapons, terrorism and regional powers. This is the principal basis upon which the new American force should be sized and shaped. But there are other threats for which Americans will want military options and other uses for military forces, besides countering threats. A brief inventory of all of these follows.

Spread of Mass Destruction Weapons. The United States has relied primarily on diplomatic means to stop the global proliferation of nuclear, chemical and biological weapons, as well as the missiles to deliver them. The Gulf crisis drove home the limitations of this approach. Despite signing the 1925 Geneva Protocol and the 1968 Nuclear Non-Proliferation Treaty, Iraq has used chemical weapons and aggressively pursued a nuclear weapons program. No one doubts that the Gulf crisis would have been resolved differently if Saddam Hussein had possessed nuclear weapons, which it most likely would have if not for Israel's attack in 1981 on Iraq's nuclear facilities.

The Gulf war, however, drove home another lesson, namely the difficulty of forcibly stripping a rogue state of its capacity for developing mass destruction weapons. The United States went to war to liberate Kuwait, but it also tried to destroy Iraq's capacity for developing and using mass destruction weapons. Despite initial intelligence estimates, it is now clear that much needs to be done before Iraq's nuclear weapons program is stopped.

Terrorism. The terrorist threat to Americans appears to have waned somewhat in the past year. During the Gulf war, the widely-predicted upsurge in terrorist attacks did not materialize. Leading state-sponsors of terrorism, particularly Syria and Iran, now seem to recognize that their involvement with terrorist groups is too costly in terms of their broader interests. The last American hostage in Lebanon has just been released.

These are all encouraging trends, but it would be foolish to expect them to continue throughout the 1990s. There are too many nations and groups that are profoundly anti-American. These forces are not powerful enough to confront the United States directly but, to put it crudely, they can kill and kidnap Americans. The United States must maintain the military capability to rescue American hostages and retaliate for terrorist attacks. Anti-American terrorism can never be eradicated, since it is the recourse of the powerless, but it can be actively opposed.

Regional Powers. During the Cold War era, the United States often became militarily involved in regions where it had few concrete interests because regional conflicts were viewed as proxies for the superpower rivalry — for example, the domino effect was the projected consequence of an American defeat in Vietnam.

In the post-Cold War period, the United States will consider military action only when important U.S. interests are threatened. If the stakes are not high enough, the American people will not — and should not — support the use of force.

Drug Trafficking. The drug crisis has become one of America's pressing problems. In a January 1990 New York Times poll, over 60 percent of Americans said drugs were the

most important problem facing the country today. A June Gallup poll revealed that 83 percent of Americans believed that drug traffickers were a greater threat to U.S. security than Soviet military power.

During the coming decade, more Americans will likely die from drug addiction or the violence generated by the trade in drugs than from military engagements. The drug problem must be attacked from both sides — both the demand for drugs and the supply of drugs must be reduced.

Drug traffickers undermine the sovereignty of neighboring governments and form lethal alliances with terrorist and insurgent groups. They have developed increasingly sophisticated methods for importing cocaine and heroin into the United States and are developing new markets both here and abroad. Although the United States will continue to rely primarily on nonmilitary means in its effort to curtail the international trade in drugs, Americans will also want U.S. military forces engaged in the struggle with drug traffickers, primarily in an interdiction role.

Economic Threats. Throughout most of the Cold War, the United States was the dominant Western power, militarily, politically and economically. Now it is the world's only military superpower, but its status as the number one economic power is strongly challenged by Japan and, to a lesser extent, the European Community. Even as American views of the Soviet Union have become more favorable in the late 1980s, their sense of what threatened them has changed. The June 1990 Gallup poll revealed that 75 percent of Americans believed that Japanese economic power was a greater threat to American security.

The collapse of the Soviet military threat means a much less dangerous world and, for many Americans, a reduced need for military forces. This is true for Americans in both the internationalist and isolationist camps. Internationalists want to build American economic strength (for example, cutting the trade and budget deficits, strengthening currency, improving economic competitiveness, and so on) to support an activist policy abroad. The "America First" movement, on the other hand, wants to address domestic problems long neglected in efforts to win the

Cold War. The end of the old Soviet threat takes away the clear and present danger for most Americans and as a consequence, they will want to spend less on defense.

Old-New Comparison. This survey of the post-Soviet threat environment identifies four principal threats — spreading nuclear weapons, terrorism, regional powers, and drugs — that replace the old Soviet threat. American forces must be sized and shaped to deal with these forces. But American concern about economic threats means that the new American force must be a less expensive one. Table 4 contrasts the underlying differences in how Americans viewed security issues during the Cold War and the broader perspective they are likely to have in the decade ahead.

TABLE 4: AMERICA'S CHANGING VIEWS ABOUT SECURITY

Old	New
Soviet Military Power	Spread of Nuclear Weapons Terrorism Regional Thugs Drug Traffickers
Deliberate Soviet Attack	Instability in the Former Soviet Republics
Economic Power Assumed	Japanese Economic Power
High Defense Budgets	Declining Defense Budgets
Global Security Concerns Paramount	Domestic Security Concerns Paramount

OTHER CONSIDERATIONS AFFECTING THE NEW FORCE

U.S. military forces, of course, have been used for many non-threat related roles, including humanitarian and foreign policy purposes. This will undoubtedly continue in the decade ahead. But during a time of scarce resources, U.S. military forces should be structured according to the military tasks that Americans want them to perform. Those other purposes for which military forces are used should be treated as lesser-included cases, not affecting significantly how the new American force is sized, but possibly influencing how it is shaped.

Emergency Assistance. The U.S. military has unique capabilities to transport and distribute humanitarian supplies to desperate people in inaccessible places. The precedent was set in the multinational relief effort to the Kurdish refugees in northern Iraq, an action taken by President Bush in the aftermath of the Gulf war. Although the Kurdish relief effort was undertaken primarily for security and foreign policy reasons, it seemed to create new responsibilities. Americans appeared to take it for granted that the U.S. military forces would play a similar role after a cyclone struck Bangladesh and a volcano erupted in the Philippines.

Peacekeeping. U.S. military personnel have often been used in peacekeeping activities. For example, the U.S.-brokered Camp David agreement included a U.N.-sponsored observer team that relied heavily on American military personnel. There was also a peacekeeping aspect to the American interventions in the Dominican Republic (1965) and Lebanon (both in 1958 and 1984). However, as we learned when over 200 Marines were killed in the terrorist attack on their barracks in Beirut, peacekeeping can be a very risky business.

The current conflict in Yugoslavia is indicative of the new security environment of the 1990s. The war between Serbia and Croatia has not spread because no external party has enough interests at stake to risk the lives of their citizens. That does not mean that the rest of the world does not care that Croats and Serbians are killing each other — 13 externally-brokered cease-fires failed by the end of November 1991. Economic sanctions were also imposed on Yugoslavia by the E.C. and the U.N., but to little effect.

The bitter ethnic hatreds that fuel this tragic conflict exist the world over, particularly in what was once the Soviet Union. In many instances, the fighting will not stop until the warring parties are forced to stop fighting. But potential peacekeepers are inhibited from intervening because of the risk to their own citizens. The notion of "wars of humanitarian assistance" seems like an oxymoron, but, as was evident in the aftermath of the Gulf war, there is often a need to save a people from the depredations of their leader. This need is not likely to be met until new methods are developed that can stop an aggressive attack (such as that mounted by the Serbian-dominated Yugoslavian army, or put military pressure on a rogue despot, such as Saddam Hussein) but avoid significant risks to the intervening peacekeeper.

American civilian strategists were quite enthusiastic about counter-insurgency warfare until the Vietnam war. Since then, however, Americans have been very reluctant about becoming directly involved, regardless of how good the regime may be or how bad the insurgents. Nevertheless, the United States has sent military advisers to El Salvador and made preparations for a counter-insurgency campaign after launching Operation Just Cause to remove Noriega from power. If the United States were to reverse the military coup in Haiti, as some Americans have advocated, a counter-insurgency effort could be required as well. As is the case with coercive peacekeeping, Americans probably would be more supportive of counter insurgency, if it could be done with less risk to American military personnel.

A BASIS FOR SIZING AND SHAPING THE NEW AMERICAN FORCE

Table 5 summarizes the contrast between the old and new security environments in a series of simple comparisons. The result is often exaggerated, but the thrust is clear — our security needs during the post-Soviet era will be very different from the past. U.S. military forces must be sized and shaped to deal with the threats of a new security environment, not the old threat which drove our military planning for the last 40 years.

TABLE 5: THE CHANGING SECURITY ENVIRONMENT

Old World	New World
AMERICAN PERCEPTIONS	
Soviet Military Power	Spread of Nuclear Weapons Terrorism Regional Thugs Drug Traffickers
Deliberate Soviet Attack	Instability in the Former Soviet Republics
Economic Power Assumed	Japanese economic power
High Defense Budgets	Declining Defense Budgets
Global Security Concerns Paramount	Domestic Security Concerns Paramount
GEO-POLITICAL CONTEXT	
Bipolar Rigidity	Multipolar Complexity
Predictable	Uncertain
Communism	Nationalism/Religious Extremists
U.S. Dominant Western Power	U.S. Militarily No. 1, Not Economically
Fixed Alliances	Ad Hoc Coalitions
"Good Guys and Bad Guys"	"Grey Guys"
U.N. Paralyzed	U.N. Viable
THE THREAT	
Single (Soviet)	Diverse
Survival at Stake	Interests/Americans at Stake
Known	Unknown
Deterrable	Non-deterrable
Strategic Use of Nukes	Terroristic Use of Nukes
Overt	Covert
Europe-Centered	Regional, Ill-Defined
High Risk of Escalation	Little Risk of Escalation
MILITARY FORCES	
Attrition Warfare	Decisive Attacks on Key Nodes
War by Proxy	Direct Involvement
High Tech Dominant	High-Medium-Low Tech Mix
Forward Deployed	Power Projection
Forward Based	U.S.-Based
Host-Nation Support	Self Reliant

Defining the post-Soviet security environment is the critical first step in sizing and shaping the new American force. Identifying the threats to important U.S. interests — ones important enough that Americans will support using military force to protect them — forms the basis for understanding the situations in which Americans want military options. The new American force must be created from the bottom up, not just by subtracting 25 or 30 or 50 percent from the old Cold War structure. Understanding where Americans have important interests, who might threaten them and how they might be threatened is essential for ensuring that Americans have the right kinds of forces for the challenges ahead.

It should be clear what defining the new threat environment is not about. It does not prejudge the issue of when or where the United States should use force. Some U.S. interests are so important that we can anticipate in advance that Americans will want to use force to secure them. Others are not, however, and the decision to employ force depends heavily on the context. President Reagan did not move against Panama strongman Manuel Noriega in March 1987 when Noriega ousted the President that the United States had backed against him. President Bush did not act in September 1989, despite his repeated calls for elements in the Panamanian military to move against Noriega. Operation Just Cause, however, was launched in December 1989 with the overwhelming support of the American people. At this point, the task is to identify those situations for which Americans want military options, but without prescribing when and where they will want to use force.

It also does not define a new conceptual lodestar as the organizing principle for American foreign policy in the 1990s. Since the Soviet threat was so compelling, the Cold War paradigm could be expressed in a one-word, containment. In a less threatening world, Americans will have the luxury of choosing among many paradigms such as balance-of-power politics, economic nationalism, promotion of democracy or securing a new world order. Understanding the new threat environment is not an effort to anticipate why Americans will want to use force, but attempts to identify those situations or contingencies for which most Americans will want to have a military option.

Finally, this threat assessment does not address nonmilitary means of increasing the security, broadly defined, of the American people. During the Cold War, the threat posed by Soviet military power dictated a policy that relied heavily upon military means. The balance between military and economic means will inevitably shift, as the United States rebuilds its economic strength and addresses domestic needs. The task here, however, is to determine how much military capability Americans will need in this new era. Defining the threats to American interests that are important enough to consider the use of force will determine how much and what types of military capability Americans will need in the new era.

Understanding the new threat environment is necessary, but only the first step in sizing and shaping the new American force. The following questions must also be addressed:

— What are the new nuclear dangers and what role do U.S. forces play in the new era?

— What should be the size and shape of our conventional forces for the new era?

— What is the required industrial base to support the new force?

— How can the United States maintain its technological edge in the new era of declining defense resources and new threats?

— How much will the new American force cost?

This report addresses the new threat and provides a basis for sizing and shaping the new nuclear forces and new conventional forces for the United States. These two topics will be addressed in subsequent reports.

# # # #

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U.S. House of Representatives

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RUDY DE LEON, STAFF DIRECTOR

January 28, 1992

MEMORANDUM

To: Colleagues

From: Les Aspin, Chairman, House Armed Services Committee

Re: **Sizing and Shaping our New Conventional Forces -- A Threat-Driven Methodology**

- As you know, I have been suggesting for some time that we need to make an intensive effort to rethink our country's traditional security policies in light of the collapse of the Soviet Union.

- As a first step, I recently proposed that we adopt a bottom-up methodology to size and shape our forces. I suggested that we should design our forces to deal with the generic real world threats that might actually endanger us. This strategic approach should make us militarily stronger and more secure than simply buying less of the same old Cold War forces --- a defense by subtraction.

- Now, in the attached paper, I have made a start toward applying this threat-driven methodology to understand how we might best reduce and reshape our conventional forces.

- As you will see, the heart of my reasoning in favor of using a threat-driven approach to size and shape our conventional forces is:

  - Residual Soviet conventional forces will be incapable of external aggression for years to come. This does not mean that it is certain that the United States would never send forces to deal with a crisis in the former Soviet Union. It does mean that the residual, post-Soviet conventional threat is not sufficient to greatly influence the size of U.S. conventional forces.

- With a smaller force structure it will be increasingly important that the residual forces are the right forces for the future. There's less margin for error. If we reduce our forces by simple subtraction, we will get a smaller defense budget and a smaller force, but the chances are good that neither the budget nor the forces will be the right ones.

- No other approach to force planning tells you how much is enough or allows public debate to proceed in a cooperative rather than a confrontational mode.

- A threat-driven conventional force can be built from the bottom-up based on three primary building blocks of capability, each of them derived from recent history:

  - A "Desert Storm Equivalent" illuminates how we would deal with the Iraqs of the world.

  - A "Panama Equivalent" helps derive forces for smaller contingencies.

  - A "Provide Comfort Equivalent," derived from last year's humanitarian uses of our forces to aid the Kurds in Iraq and the flood victims in Bangladesh, stands in for smaller, non-violent uses of military forces.

- The threat-driven conventional force must be <u>shaped</u> to deal with all of the diverse sorts of threats we will face in the post-Soviet era -- including interdicting drugs, fighting terrorism, conducting peacekeeping operations, and combatting the spread of nuclear weapons directly if necessary.

- But the <u>size</u> of the force will mostly be determined by choices of how to deal with the Iraqs -- with regional aggressors.

  - Saddam's aggression provides a useful unit of account -- the "Iraq Equivalent" -- that can be used for force planning purposes to measure the threat from other potential regional aggressors and the size of a U.S. response required.

  - As a working hypothesis -- to be modified by differences of geography, local power balances, and similar considerations -- one "Iraq" can be dealt with by one Desert Storm Equivalent.

- For example, if North Korea is six tenths of an Iraq, then forces amounting to about six tenths Desert Storm Equivalents should be enough to do the job. If South Korea has .6 of a Desert Storm Equivalent worth of ground power, then the main U.S. contribution can be measured in Desert Storm Equivalents of air power.

- This threat-driven methodology provides the tools so that each American can determine come to an individual judgment of how much force structure is needed to keep us safe against the sorts of threats we must worry about in the future.

  - Different force structures that provide more or less of each building block capability will balance risk and cost in different ways.

  - While Americans may continue to come to different conclusions about how much is enough, we will be better off in preparing for the future if these disagreements can be expressed, as I think they can be, within this bottom-up force planning methodology that confronts everyone with the real trade-offs that must be made.

- The attached paper presents the outlines of a new methodology for force sizing based on the sorts of threats America will face in the next decade.▼*p1521X

  I have held back on the specific force structure implications of this methodology until I can consult with you and other colleagues about my reasoning.

  <u>I am particularly interested in knowing whether you think this methodology is on the right track and how it might be improved.</u>

- I hope you will be able to find the time to examine the reasoning I offer in this paper and to write me any suggestions you might make about how to improve it. I will continue to work on this paper, and expect shortly to send you a draft that goes on to present illustrative options for a future force structure that derive from the methodology.

An Approach to Sizing American Conventional Forces For the Post-Soviet Era

Rep. Les Aspin, Chairman
House Armed Services Committee

January 24, 1992

I. Introduction

The national security concerns that drove our national defense for two generations have changed dramatically. It is, quite literally, a new world.

It is a new world because two modern revolutions in the former Soviet Union have greatly impacted the Soviet threat. The first revolution began December 7, 1988, when then-President Mikhail Gorbachev announced unilateral troop withdrawals from Eastern Europe and unilateral reductions in Soviet forces. That revolution ended in November of 1989 when the Berlin Wall came down, symbolizing the demise of the Warsaw Pact and the end of the conventional military threat to Western Europe.

The second modern revolution began August 19, 1991, when hardliners tried to turn the clock back on reforms in the Soviet Union and succeeded only in hastening those reforms. The end of the revolution came at Christmas time when the Soviet Union ceased to exist.

In understanding what this means, we should recall how much the Soviet threat dominated our defense thinking. In fact, that dominance cannot be overemphasized. The Soviet threat drove force planning, defense budgets, training, strategy and tactics, equipment, research and development, the focus of intelligence effort, and troop deployments.

Today that dominance is gone. Relations between the U.S. and the former Soviet republics of the Commonwealth of Independent States (CIS) today are somewhere between the old Cold War antagonism and the friendly relations the U.S. enjoys with other nuclear powers such as France or Britain.

It is true that a change in political leadership in Moscow could bring back an aggressive adversary to the Kremlin. This, in turn, could rather quickly return the strategic nuclear relationship to its former, threatening state. The same is not true of non-nuclear forces.

The conventional threat cannot be reversed simply with a change in leadership for a number of reasons. The former Soviet military threat has been removed physically from Central Europe. The Red Army is in disarray, with elements deciding to whom they should pledge loyalty and wondering where their next paycheck or meal might come from. The former Soviet military, over four million strong as recently as 1989, may be down to two million within the current year, a number that is smaller than the forces of the European NATO countries. These two million will moreover be divided in a haphazard fashion among several different states, as will the infrastructure and the air defense, supply and communications networks to support a force.

In addition, a capability to mobilize forces for external aggression would require some sense of external threat or motivating ideology to get troops to follow orders and fight, a scenario that is hard to discern, and certainly couldn't develop without years of warning time for the United States and our European allies. In that time period we could generate substantial forces from scratch.

So the dominating Soviet threat that drove the size and shape of our conventional forces for so long is gone and the residual Soviet conventional forces will be incapable of external aggression for years to come. This does not mean that it is certain that the United States would never send forces to deal with a crisis in the former Soviet Union. It does mean that the residual, post-Soviet conventional threat is not sufficient to greatly influence the size of U.S. conventional forces.

This reduction in the threat will allow a reduction in our defense effort, but as forces decrease in size it becomes increasingly important that the residual forces are the right forces for the future. There's less margin for error. If we reduce our forces by simple subtraction, we will get a smaller defense budget and a smaller force, but the chances are good that neither the budget nor the forces will be the right ones.

The fundamental change in the world requires a fundamental re-examination of our force posture. It requires a bottom-up review of our forces. This, too, cannot be overemphasized. Doing it from the top down, the subtraction method, will not supply us with the forces we need for the future.

The place to start is with determining the basis for this force of the future. This is a matter of controversy. With the Soviet threat fading, we find ourselves without agreement on the very basis for our defenses for the future. We know we need them. Saddam Hussein's aggression against Kuwait and his ambitions to possess nuclear weapons convince us of that.

I argued in a paper on January 6, 1992, that our defense must be threat based. Others have said the threats we now face are too vague to form the basis of our future defense. This is somewhat like saying that if you don't have perfect vision, you should wear a blindfold instead of eyeglasses.

Threat-based force planning is essential for two reasons:

First, no other approach to force planning tells you how much is enough. Top-down force planning — what they're practicing in the Pentagon as they take successive cuts out of the budget — will leave us with a smaller version of the force we built for the Cold War. If the force isn't built from the bottom up on a clear threat assessment, then there is no way of knowing whether it's the right size or the right kind for the new era.

Second, what citizens look for from their national security establishment is protection of their vital interests against things they perceive as threatening to them. In this era of belt tightening, our citizens understandably may be reluctant to pay for defense unless there is a clear linkage between the forces and the threats those forces are designed to deal with.

For the first time in forty years, then, we're faced with the very hard problem of how to establish defense budgets and design forces without the sort of dominant focus for planning that the Soviet threat provided. In the post-Soviet era, the threats to American security will be broader and more diverse, and the security environment will be murkier, more ambiguous, and more fluid. The threats will be harder to characterize and pin down than during the Cold War. Nevertheless, we must design the force structure around a clear analysis of the threats we now face.

The question is, how do we identify threats with specificity sufficient to allow us to plan our forces? In this paper, I propose a first, rough draft on a methodology for identifying the size of the threats we face and for deciding the size of the force with which we might want to respond. The paper does not attempt to decide the size of our future forces. Rather, it is an attempt to begin an informed debate on how to decide the size of our future forces.

II. Threats of the Post-Soviet Era: Purposes for American Military Forces

With the Soviet threat no longer at the focus of our defense planning, national security will likely be defined in a broader way, to include economic and technological competition. But while security may be broader in the new era, the primary reason to buy military forces will still be to deal with violent threats from abroad.

For force-sizing purposes, we must identify threats to U.S. interests that are sufficiently important that Americans would consider the use of force to secure them. These threats include rogue powers in regions where Americans have vital interests, terrorism, and the spread of nuclear and other mass terror weapons.

Table I shows both sorts of situations or purposes for which Americans might want military forces in the 1990's.

Table I
Situations for Which Americans Might Want Military Forces

1. Countering Regional Aggressors
   a. Middle East/Southwest Asia
   b. North Korea
   c. Elsewhere
2. Combatting the Spread of Nuclear and other Mass Terror Weapons
3. Fighting Terrorism
4. Restricting Drug Trafficking
5. Keeping the Peace
6. Assisting Civilians

Regional Aggressors the Main Threat Driver

The most militarily demanding threats in Table I are those posed by regional aggressors. Indeed, the list might have been grouped into regional aggressors and others. It follows that the gross size of the U.S. force structure of the future will be driven by the need to counter these regional aggressors.

The other uses of military force generally require much smaller forces. Increasingly, these other missions will require special capabilities that will affect equipment choices, personnel expertise and training, R&D and other details of what could be called force shaping.

Combatting the Spread of Mass Terror Weapons

The threat of the spread of nuclear and other mass terror weapons is at its most dangerous in connection with a rogue regional power such as Iraq or North Korea. Other countries that are not so much a threat to us now are also developing nuclear weapons.

America's experience with Iraq suggests that eliminating a nuclear development program can be much harder than many analysts thought; it was not enough to attack a few well-known installations, as it was with Israel's 1981 bombing of Iraq's Osirak reactor. Even with the benefit of a heightened intelligence effort it may be necessary to insert forces on the ground to ensure that the right installations have been located and to render them harmless before they are destroyed or removed.

Even so, the forces required for such a task are small compared to those required to defeat a regional power's main military forces.

Fighting Terrorism

Two types of military operations have been conducted to deal with terrorism. The first aims at punishing a state sponsor of terrorism and dissuading that and other states from continuing their terrorist techniques. The forces used in such a coercive raid are small compared to those required for a regional action, and the raid presumably is a one-time affair. For example, the eleven-minute raid by 30 warplanes on Libya in 1986 may be compared to the more than 100,000 sorties flown over 43 days during Operation Desert Storm.

The second type of direct action against terrorism uses highly trained forces to intervene directly to capture terrorists or to free hostages. These operations are very demanding of intelligence and of small groups of special forces, ranging from a few hundred to a thousand or so people directly involved, plus supporting regular armed forces that could total another five or ten thousand depending on the scenario.

Restricting Drug Trafficking

Until the drug war shows more promise of victory this will not be a convincing force-builder for Americans. Today less than one-half of one percent of the defense effort goes into stemming the flow of illegal drugs. This could rise substantially without affecting force sizing in a substantial way.

Keeping the Peace and Assisting Civilians

Our military forces will be increasingly likely to participate in peacekeeping and humanitarian assistance operations in the wake of the successful U.N. coalition effort against Iraq. Past U.S. peacekeeping efforts in Lebanon and elsewhere and our recent experience in providing humanitarian assistance to the Kurds and in Bangladesh demonstrate that these operations involve no more than a few thousand troops, and so are not major considerations in force building. The ongoing U.N.-sponsored quarantine of Iraq has placed demands on our Navy for continuous deployments to the Middle East; but again, these are not a driver in building the future force.

III. Taking The Measure of Regional Aggressors — A Threat Yardstick

To understand that regional aggressors are the most demanding threat we will face is not the same as knowing how much force would be required to meet these threats. For that, a more quantitative approach is required. In that regard, our recent experience in the Persian Gulf — an experience shared by the American people — is instructive.

In many ways, Saddam Hussein was the very model of a modern, post-Soviet regional despot. His aggression was unchecked by the retraining hand of his one-time sponsors in Moscow. He made an unprovoked military attack on his neighbor; he was in hot pursuit of nuclear weapons; he used terrorism to advance his ends; and he kept his own people in check by totalitarian means.

Iraq entered upon its invasion of Kuwait with what was accounted at the time to be the world's fourth largest army, including over 6,000 tanks. This army was assumed to be battle hardened and reasonably well-led as the result of a gruelling eight-year war with Iran. In quality, it was judged to be one of the better third world armies. Of particular concern were the heavy ground forces, centered around heavy tanks and artillery.

It had a modern air force of over 700 planes, a modern air defense system, capabilities for chemical and perhaps biological warfare, and theater ballistic missiles.

The U.S.-led, international effort that became Operation Desert Storm dealt with the Iraqi military very handily, however. This suggests we may draw both a measure of threat and of what it takes to stop that threat from our shared experience in the gulf war. First, let us consider how we might draw from the conflict a generic measure for the threats we might face in the future.

The Iraq Equivalent

I nominate the Iraq or Iraq equivalent as a benchmark or unit of account of future threats. One Iraq equivalent is equal to the amount of offensive power that Iraq possessed prior to Desert Storm. The advantage of this approach is that Americans know how to deal with an Iraq equivalent — with a Desert Storm equivalent. Denominating the threat in terms of Iraqs can produce an uncommonly clear appreciation of the link between the threat and the forces required in response.

Let me say explicitly that we are looking here for a general-purpose measure. No future conflict will be exactly the same as the war with Iraq, nor will any future adversary exactly match Iraq's circumstances. By adopting a measure of capability and calling it the Iraq, we are not dooming ourselves to fight the last war again. We're doing just the opposite. We're creating a tool to prepare for the future.

Potential Regional Aggressors

Table II provides tentative Iraq Equivalent scores for countries that are often assessed to be potential threats to U.S. interests. These countries are major powers in regions in which the U.S. has key interests, and each of them in the past has come into conflict with the U.S. Nevertheless, their presence on the list does not reflect a judgment that a war with any of these countries is likely today or in the future.

The specific scores given to each country in Table II represent an initial assessment based on publicly available information. Their accuracy could be improved by taking into account additional ingredients of military capability and more detailed information on each country. They may be revised after further investigation and consultation by the House Armed Services Committee and its staff. But they don't have to be exact to serve the purpose of this paper, which is to explicate the methodology rather than to settle on a force structure.

Table II
Iraq Equivalents
Land, Air, and Sea Strength of Major Regional Powers

	Land*	Sea**	Air***
Iraq (pre war)	1.0	1.0	1.0
Middle East/South West Asia			
Iraq (today)	0.3	0.1	0.3
Iran	0.15	3.0	0.4
Syria	0.6	1.0	0.6
Libya	0.3	1.0	0.7
Asia			
North Korea	0.6	10.0	0.5
China	1.2	40.0	2.8
Western Hemisphere			
Cuba	0.15	2.0	0.1

* Ratios derived from equivalent heavy divisions scores based on TASCFORM methodology and equipment inventories according to IISS Military Balance, 1990-91. Ratios calculated from data in Michael O'Hanlon, The Art of War in the Age of Peace: A U.S. Military Posture for the Post-Cold War World, forthcoming, Praeger, 1992.

** Staff estimate based on IISS data

*** Based on O'Hanlon's air scores, modified slightly by judgment of comparative training and readiness

NOTE: Land scores presented in the table are based on calculations of equivalent heavy divisions, based on comparisons of equipment inventories of tanks, APCs and artillery, modified by the number of men under arms and according to the quality of the equipment and the type of formation. The current score for Iraq is based on equipment destroyed in the Gulf War and reports of force reductions and reorganizations in Iraq's military. The raw scores are divided by Iraq's pre-war score to obtain Iraq equivalents.

Air scores are based on numbers of aircraft modified by a quality score based primarily on the age of the aircraft type. These are not satisfactory when used between dissimilar technologies, but are accurate enough in the present context. Naval scores are based on judgmental comparisons of the naval force structures.

The land force column in this table is the main one to focus on. Land forces — and specifically the heavy mechanized and armored forces given the most weight in this column — form the bulk of an offensive capability required to commit regional aggression.

The air forces of these countries, even if large in numbers of aircraft, are no match for U.S. equipment and training — as the Gulf War (and the Israel/Syria engagement in 1982) showed. Most of the navies are small or not very capable, although with modern missiles even small navies and air forces can cause damage to unwary or inadequately defended expeditionary forces.

Iraq. The vaunted million man army and its 6,000 tanks has been reduced to a third of its former size, and about 2,100 tanks. Many of these forces are involved in suppressing domestic opposition. Thus, Iraq itself has been reduced to about three tenths Iraq equivalents as measured by its force structure, and well under that in real military capability. While unlikely to recover much beyond three tenths Iraqs for some time, Saddam is still thought to be concealing parts of his missile force and his nuclear and biological development programs from the international community.

Iran. Iran is rebuilding its defense forces, shopping for both conventional and unconventional weapons capabilities. Iran has far fewer tanks than Iraq had before its Kuwait invasion, but it has substantial numbers of light forces. It has three times the small navy Iraq had before Desert Storm, and is re-building its air force with Soviet equipment. Iran has pursued a chemical weapons capability and has SCUD and other shorter range missiles.

Syria. Now that it can no longer obtain weapons from the former Soviet Union except with hard currency, Syria is making purchases of tanks and other equipment with the financial windfall from Saudi Arabia for its participation in the Gulf War. Syria's large inventory of 4,000 tanks is impressive, and its active army of 400,000 could possibly be augmented by reserves of 270,000. It's score of six tenths Iraqs is high in terms of readily useable capability, but it represents a conservative assessment of what might be attainable by Syria after a period of mobilization. Syria's air force is also comparable to six tenths Iraqs. Its navy is about equivalent to Iraq's small pre-war force.

Libya. As suggested by the table, Libya is not a major land combat power, but retains a modestly capable navy and air force.

North Korea. The next few years are likely to be a critical period in the history of Korea, with a succession crisis increasing the North's unpredictability. North Korea devotes a very large portion of its economy and population to its military effort. North Korea's army is structured differently from pre-war Iraq's, with about the same total manpower but only half as many tanks. The methodology for combining different sorts of equipment inventories into a standard score for offensive power yields a ground equivalent of six tenths. North Korea's air force is also about six tenths of an Iraq, but its navy comes out to about 10 times the small Iraqi force.

China. There are 2.3 million men under arms, but these forces are lightly armed and not very modernized. China's 8,000 heavy tanks and other systems give it a ground score only 1.2 times as large as Iraq's. China's naval and air forces are distinctly more capable than Iraq's — 40 times and 2.8 times greater, respectively. China has ICBMs with nuclear warheads capable of reaching the U.S.

IV. Measuring U.S. Capabilities — Building Blocks for a Force for the 90's

Creating a quantitative measure for the threat is only half the process. The other half requires comparable, generalized judgments about the U.S. forces required to meet those threats. Thus, a judgment on what threats the United States should be able to meet at a given time would also yield a rough estimate of the U.S. forces needed to meet those threats. How do we arrive at a comparable yardstick for U.S. forces?

Building Block One: The Desert Storm Equivalent

The first major building block helps size forces for major regional aggression. The yardstick is the Desert Storm Equivalent, sized to deal with one Iraq Equivalent of threat. The

experience of Desert Storm is used as a base case for determining how much force would be required to redress any regional aggression. Pre-war Iraq was larger than any of the other single threats we are likely to engage, and in many ways the Persian Gulf region is the most stressful area for U.S. military action.

So it makes sense to use Desert Storm as the yardstick to assess how much force and what type night be needed to deal with other cases of regional aggression. As a working hypothesis — to be modified by differences of geography, local power balances, and similar considerations — if (for example) North Korea is six tenths of an Iraq, then forces amounting to about six tenths Desert Storm Equivalents should be enough to do the job.

Because some forces in theater were not requested by the Desert Storm Commander-in-Chief, and because others did not contribute meaningfully to the war effort, the Desert Storm Equivalent is not simply the force that was deployed to the theater. Instead, the force that was actually deployed is adjusted slightly to arrive at a conservatively estimated force that mattered in defeating Saddam Hussein.

It adds:

— additional U.S. mine-countermeasures capability to provide greater access to coastal waters for U.S. forces on a more self-reliant basis. This would have enabled Marines to have come ashore in Kuwait if necessary on a timetable consonant with the rest of the attack plan.

It excludes:

— some Air Force tactical aircraft that were less effective bombers, that had a secondary role in air-to-air combat, and whose number of sorties was limited by available air-to-air refuelling tankers;

— two Navy carriers not requested by the commander-in-chief (CINC) in the field; and

— one late arriving Marine brigade (and associated air squadron) that was in excess of the Marine force requested by the CINC and that was in excess of what was needed to perform the mission.

It includes some forces that didn't really fight:

— the Marine forces at sea that pinned down Iraqi forces along the coast even though they didn't land;

— the tactical and strategic reserve of ground forces that we had in the theater, that also weren't needed in the actual event;

— the light forces that were essential early on but that could have been withdrawn after the heavy build up was well underway.

Two aspects of the Gulf conflict suggest two possible augmentations to the basic force that mattered, to be taken into account in arriving in overall force structure options (in section V below).

First, additional fast sealift and/or afloat pre-positioning of equipment could have given our early-arriving forces more mobility or firepower to defend themselves had Saddam continued South into Saudi Arabia. As it was our light forces felt that they were only speedbumps in Saddam's path.

Second, in late 1990 many argued for giving economic sanctions a chance to work, which would have required at least a defensive force to sit in Saudi Arabia until Saddam either left Kuwait or an offensive build-up was decided upon. While this waiting was not the right course on this occasion, it might be some other time. The flexibility to sit and wait would require enough force (active or reserve component) so that the combat forces could be rotated during the period of the wait.

Applying the Desert Storm Equivalent

Going back to Table II, recall that only China exceeds 1 Iraq on the equivalent scale. It therefore seems reasonable to entertain

a working hypothesis that a Desert Storm Equivalent force, having handily taken care of Iraq, should be expected to do well against any single (non-nuclear) country on the list.

Every military operation is unique, and Desert Storm is no exception. We were disadvantaged in responding by our limited permanent presence, the weakness of friendly forces in the area, and the distance from our own shores. We were advantaged by Saudi Arabia's developed port facilities, fuel availability, communications infrastructure, and logistics base. In other contingencies we may have different advantages and disadvantages.

These variations have to be taken into account in applying the Desert Storm Equivalent to possible future conflicts. Many of them affect the shaping of force-supporting capabilities rather than the size of the combat force structure. As this planning methodology is developed in greater detail, it will make sense to make sure that our forces will contain whatever unique capabilities may be required for the threats that seem most plausible or dangerous. It will be easier to take care of these variations from the relatively simple conceptual base of the Desert Storm Equivalent than trying to start from scratch for each potential scenario.

It is comforting in a planning context that the majority of the potential regional aggressors identified in Table II are clustered in the part of the world from which the Desert Storm Equivalent arose, and where its details are likely to be the most appropriate.

The clustering of these countries in the Middle East raises an additional concern — what if our country faced not a single regional aggressor in the Persian Gulf but a hostile coalition of states in the region? The entire forces of the Middle East states on the list (excluding Israel and Egypt) will not rise much above one Iraq in the foreseeable future — the amount of opposition the Desert Storm Equivalent can be expected to handle.

Including Egypt and the smaller Gulf states in this somewhat fanciful coalition could bring the total up to around 1.8. It is hard to imagine such a grand coalition arrayed against any power other

than Israel, which itself when fully mobilized has more than a Desert Storm Equivalent of ground forces and about one-half of a Desert Storm air arm. Thus maintaining an ability to project a Desert Storm Equivalent into the region is a conservative, common sense yardstick for planning.

Many potential conflicts around the world would not require all the elements of the American Desert Storm Equivalent. This needs to be taken into account especially in planning for multiple simultaneous contingencies.

Applying the Desert Storm Equivalent to Korea

Korea is one place where American military power is today committed directly against the clear and present danger of aggression, and planning for Korea must be a key part of any force structuring methodology.

In the Persian Gulf essentially all the ground combat power had to come from outside the region; but in Korea the U.S. will provide a reinforcing role. Initial investigation suggests that an air package equivalent to a Desert Storm Equivalent air arm, or perhaps somewhat smaller, is the main American contribution needed to be able to defeat North Korean aggression.

In recognition of the progressive strengthening of South Korea's ground forces, the Bush Administration has outlined a path for reducing the commitment of American ground forces to South Korean defense. Indeed, South Korea today can muster about 650,000 army personnel equipped with more than 1,500 tanks to deal with North Korea's million man army and 3,000 tanks. In the units of account in use here, South Korea can bring to bear about six tenths Desert Storm Equivalents of total ground combat force to deal with North Korea's six tenths Iraqs of total ground offensive power.

South Korea's navy compares favorably with that of North Korea, as does its air force. But South Korea lacks a strong, long-legged tactical air force for ground attack, and U.S. air capabilities combined with airborne tactical radar planes and other targeting systems can provide the sort of paralyzing tactical and

strategic air attack that was so effective against Iraq. Given the geography of the front and the fact that North Korea is not as large a threat as an Iraq, providing a Desert Storm Equivalent of ground attack air is a conservative plan that could allow for some airfields being put out of action for a time due to enemy attack, something that did not happen in Desert Storm.

Other U.S. contributions would include a heavy U.S. brigade north of Seoul, along with a division headquarters, to make the U.S. commitment clear to the North and ensure that the North realizes that any move south would bring American forces into the fight, intelligence assets, and the potential amphibious employment of a Marine expeditionary force to complicate North Korean military planning.

Other Building Blocks for the Future Force

The historical experience of the Iraq war provided us with the Desert Storm Equivalent measure for dealing with regional aggressors. As indicated by Table I, regional aggression is the most demanding contingency, but far from the only one U.S. forces will have to contend with. Fighting terrorism, combating the spread of weapons of mass destruction and restricting drug trafficking make up a loose grouping requiring a range of capabilities, but all much smaller than Desert Storm.

The most demanding recent mission of this kind was Operation Just Cause in Panama in which U.S. forces deposed a drug-trafficking military dictator whose forces were threatening U.S. personnel. The remaining tasks of peacekeeping and assisting civilians. were most recently managed in an offshoot of Desert Storm. That was the Provide Comfort operation with which we assisted the Kurds after the end of the war with Iraq.

The Panama Equivalent Building Block

The second building block, then, is a capability to perform an equivalent of Just Cause Operation that deposed Manuel Noriega in Panama. A Panama Equivalent, is more broadly indicative of smaller uses of force, including combatting the spread of nuclear and other mass terror weapons and fighting terrorism.

The forces actually used in Operation Just Cause in Panama were specific to that country, relying heavily on Army forces in place in connection with the Panama canal, and on other Army force with detailed knowledge of the ground. Depending on where they are needed, other cases of intervention for regime change are likely to require more Naval and Marine forces and fewer Army troops. The Panama Equivalent force is designed with carrier air and Marines or airborne Army forces as an option to extend the geographic reach of the capability. Forces the rough size of the Operation Just Cause capability should be able to conduct similar operations, and anti-proliferation attacks, wherever in the world they are required.

The Provide Comfort Equivalent Building Block

The third building block reflects the need to preserve abilities to conduct missions of assistance to civilians even as we reduce our force structure and reduce forward deployments. Here the yardstick is the Provide Comfort and Sea Angel Operations of last year, yielding the Provide Comfort Equivalent.

V. How Many, How Fast, How Long? How Policy Makers Would Use the Building Blocks

This section derives force structure options from the threats and the building blocks. As in all defense planning there will be no set of numbers that will satisfy all observers. But it is important that the choices be made through a method that relates force structure choices clearly to the different capabilities they buy against the threats in view.

The threat yardstick and the building blocks do not alone yield a force structure. The next step is to identify the situations that may require the use of force, and to see how much of the building blocks might be required to deal with the situations identified earlier.

Then the force designer must ask three questions: how many of these contingencies are to be handled simultaneously; how fast do forces have to get to the scene in each case, given warning assumptions; and how long must the established force levels remain in theater?

For example, how should we deal with an emerging Southwest Asia contingency in a period when Korea remains a danger spot? Simply put, these simultaneous questions can be stylized as how many contingencies are to be handled at once, and are a major determinant of how large a force we need. Another aspect of how many is whether extra capability is needed as a strategic reserve.

Another set of force drivers is often stylized as being about warning assumptions or about how fast various sorts of forces have to be able to get to the fight once they are alerted. In reality, this set of questions also involves strategic trade-offs, for example between a requirement for an early arriving light force and a later-arriving one with more staying power.

The final set of force-driving assumptions revolves around the duration of time that forces may be deployed to a theater, either on the defensive, or while committed to the fight, or stabilizing the situation after an engagement. This important question of how long affects the degree of risk from not having fully duplicative capabilities for multiple contingencies and the requirement for a rotation base to sustain deployed forces.

In the future I will present specific force structure options at this point — to further validate the methodology and to stimulate discussion about both the details of the methodology and the specific force structure choices America needs to make. For the time being, however, discussion needs to focus on the overall methodology.

VI. Conclusion

The purpose of this paper has been to demonstrate that it is reasonable to size American forces in direct relationship to the real threats to our vital interests. Any force planner could use the logic of this paper to come up with his or her own preferred force structure.

The next step will be to develop some specific options and to cost them out, so that risk can be balanced against cost. The debate over defense in the coming years can revolve around these

sorts of concrete judgments about what we need to keep us safe in the new era, rather than around percentages of GNP or other non-threat related yardsticks.

By laying out clear linkages between the force structure and the threats they deal with, perhaps we can leave behind us the old Cold War politics over defense spending and build a new consensus based on a common sense assessment of our needs.

We need to be attentive to costs, though, lest our requirements for force structure become the enemy of force quality and innovation. It is easy to imagine that America could be safer with a smaller force structure that is equipped and trained right for the new era, rather than a larger one that remains in the past.

This paper has presented an approach to sizing the force for the future. Even once the method is carried through to its conclusion, and a force structure for the future derived, there will still be issues to be addressed in the transition from today's force to the future force. For one, we will need to ensure that we develop the right kind of force as well as one of the right size.

For another, we will need to consider carefully how quickly we should move to whatever future force option is chosen. The speed with which the force is reduced to its new size could have tremendous consequences for readiness and morale as well as for budgets in the next few years. Choosing a future force structure should be a step toward deciding the coming years's budgets, but by itself will not determine the overall budget levels.

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RUDY DE LEON, STAFF DIRECTOR

February 20, 1992

TO: Colleagues

FR: Les Aspin, Chairman

A NEW DEFENSE RESOURCE STRATEGY

Making Sure We Can Build What We Need After the Draw Down

- As you know, we have been developing a bottom-up, threat based strategy to size and shape our military forces in the post-Soviet world.

- With the threat of the former Soviet Union gone, there is little doubt that the our defense industry will shrink in the coming years.

  So we need to plan now so that the defense industrial base we have left after the strategic drawdown will still be able to invent and build what we need militarily.

- For the past two years, the Committee has worked with some of the best talents we know to develop a new resource strategy that will support our new military forces.

  This resource strategy has four key components:

SELECTIVE UPGRADING OF EXISTING SYSTEMS

This would allow improvement of weaponry without the expense of new systems while helping maintain needed elements of the defense production base.

SELECTIVE LOW-RATE PROCUREMENTS

This would permit the purchase of current-generation systems and components as needed to keep vital, defense-unique suppliers alive to produce future systems.

ROLLOVER-PLUS

This is an expansion of an earlier idea to keep technology fresh by "rolling it over" into new development programs without going to production of new systems. To this basic idea, we added the notion of incorporating ease of manufacture in the design phase, and then making enough prototypes to allow military users to field test the items.

SILVER BULLET PROCUREMENT

Production of small numbers of revolutionary weapons such as the F-117 that have the potential to alter the balance of the battlefield.

- I am offering these suggestions as building blocks of a new defense resource strategy.

  We are going to need such a strategy to maintain our technological edge and to preserve the core of our defense industrial base as we draw down our forces.

- I am enclosing a working paper which offers some details about how these proposals might work.

  I hope you will have a chance to look at it and write me any suggestions you might have.

Tomorrow's Defense From Today's Industrial Base: Finding the Right Resource Strategy For A New Era

By Rep. Les Aspin, Chairman
House Armed Services Committee

February 26, 1992

EXECUTIVE SUMMARY

The fading of the Soviet threat means the United States no longer has to match the relentless introduction of new-generation Soviet weapon systems with new systems of our own. At the same time, the United States should maintain its technological edge to save U.S. lives on future battlefields and keep ahead of militarily significant technologies that are proliferating around the world.

U.S. military research and development, however, has been largely fueled in the past by the promise of profitable production of new weapons systems. With greatly reduced weapons production, it will be difficult to finance research and development under existing practices, or sustain a production base for future weapons.

I. What's Needed – Defining the Problem

To solve this dilemma, we need an industrial base that can do five specific things:

Deliver goods currently on contract. This may seem obvious, but it is not a foregone conclusion that it will happen. Shrinking procurement dollars may impact the defense industrial base in ways that impair its ability to deliver on existing contracts.

Maintain/upgrade existing equipment. This is important and gets even more so in light of the fact that we will be buying fewer new systems.

Produce next generation systems – with high quality and at affordable rates. This objective sounds elementary, and yet it is controversial. The administration, for example, appears to believe that we can live with a production gap for some systems. It is not clear that we can maintain the base for future production without any interim production in certain sectors that have no commercial counterpart.

Develop new high technology at home. Keeping our high-tech edge will be vital for any future force. We will need to grapple with the question of how much foreign dependency we can live with.

Provide a basis for reconstitution of a more robust industrial capacity. If we can preserve a healthy national manufacturing base we will have accomplished this objective. Any new major threat, or a reconstituted Soviet threat will take years to develop.

II. Solving the Problem — A Resource Strategy

No single prescription, be it prototyping, conversion or any other remedy, can achieve all of these ends. A comprehensive strategy for directing resources in a way that maintains the needed industrial base is required. Below are four elements comprising such a strategy.

I. Selective Upgrading. Critical portions of the production base for certain items can be maintained by upgrading existing systems or sub-systems.

II. Selective Low-Rate Procurements. For some systems, a strategy of upgrading will not be sufficient to maintain a viable production base. In such cases, we should consider means of keeping specific, vitally needed suppliers alive independent of our near-term procurements needs.

III. Rollover-Plus. We would continue to prototype new systems and components, not putting them into production, but rather "rolling over" the technology in new research programs. No new system would be put into production until and unless stringent criteria are met. Those criteria are A) that the technology works, B) that it was required by development of the threat or C) represented a breakthrough that would alter battlefield operations.

In addition, ease of manufacturing would be engineered

into the prototypes from the outset, and sufficient numbers of prototypes would be produced for field testing by the military forces for which they are intended.

IV. Silver Bullet Procurements. Silver bullet procurements are just what the name suggests: highly capable systems procured in limited quantities and reserved for operations where a high-tech advantage could maximize U.S. leverage. F-117 operations in the Persian Gulf War might be viewed by some as an example of the use of a "silver bullet." Technologically superior weapons clearly have the potential to save U.S. lives. But in the security environment of the future, our need for large quantities of such systems has diminished.

INTRODUCTION

We are living in revolutionary times. There have been two major revolutions in the military threats we face in the world. The first came with the collapse of the Warsaw Pact, a collapse symbolized by the fall of the Berlin Wall in November of 1989. The second began August 19, 1991, with the coup attempt by Moscow hardliners, and was completed symbolically with the dissolution of the Soviet Union itself on Christmas Day. We are still seeing that second revolution play itself out, of course.

But even as we watch developments in the former Soviet Union, we should be preparing for a third revolution, a revolution in the way we go about the business of providing for our defense. It isn't really a matter of choice. The changes going on elsewhere are going to force it on us. We can already see the rough outlines of things to come in this new, revolutionary world. To get a feel for this new world, let's look at some of the contrasts.

With old world defense budgets, we had to figure out how to apportion the increases. Now we have to figure out who gets the cuts — real cuts. In the old world we had high volume production runs; now we're looking at low or no production runs. In the old world, we had many suppliers; now we're looking at sole source, and in some extreme cases no source. In the old world, U.S. defense technology dominated and was closely held; in the new world, high technology with military application is going to be widely proliferated. And on it goes.

If we didn't need a defense for the future, it would be easy to deal with these changes. But we do need a defense. And we know from our experience in the Persian Gulf War that it better be a high-technology defense, both to save lives and to keep ahead of technology elsewhere. And we also know that it has to be a cheaper defense than the one we have today.

This new environment will require a new resource strategy. Our current system for equipping U.S. military forces— including research, engineering, development, production, and maintenance of defense systems — was crafted during an era of economic and technological superiority, abundant fiscal support, and a market rich with domestic suppliers. None of those conditions apply any longer.

Therefore, we need a new resource strategy for guiding investment decisions, a strategy which maximizes our ability to support current requirements, ensures the survival of those technological and industrial resources critical to achievement of future objectives, and hedges against the risk of unforeseen national emergencies.

I. Status of the Defense Technology and Production Base

The old models for defense planning and acquisition are no longer valid. What has changed in defense technology and industry that requires us to develop a new framework for defense procurement? The following lists suggest the depth and breadth of changes we can expect:

Old	New
High defense budgets	Low defense budgets
Many suppliers/ redundancy	Few or sole source supply
Price competition	Design Competition
High volume production runs	Low or no production
Production pays for R&D	R&D pays its own way
Automatic production	Selective production
"Spin-off" (defense to commercial)	"Spin-on" (commercial to defense)
Relative self-sufficiency	Foreign dependencies
Hi-tech skill magnet	Hi-tech skill flight
U.S. market dominant	Increasingly global market

Prognosis for the Current Production Base

We have reviewed defense procurement plans in several sectors of the defense industrial base through 1997. Even assuming the now optimistic spending levels of the Defense Department's base force plan, the resulting picture is still bleak.

In our review we examined the current plan for production in twelve different industrial sectors: airframes, avionics, guns, hulls, heavy combat vehicles, mission critical computers, satellites, ballistic missiles, strategic cruise missiles, tactical missiles, shipboard electronics, and vetronics. We assessed the number of different production programs for each sector, as well as the funding levels for those sectors during each year of the

five-year defense plan (FYDP), and beyond the FYDP where program plans exist.

Our review suggests that, if we follow the Department's plan, by the end of the FYDP we will be out of business entirely in several defense industries, and imminently out of business in several others. And in those remaining sectors, a significant contraction of funding levels and programs occur.

This overall contraction of the defense production base is summarized in the following table depicting the decline in the number of different system types produced during the FYDP and beyond:

Number of Program Types in Production

Sector	1992	1997	Post-FYDP
Airframes	25	16	6
Guns/Cannons	5	2	0
Hulls	9	2	1
Heavy Vehicles	0	0	0
Strategic Missiles (launch vehicles)	7	5	2
Tactical Missiles	20	13	8

There may be room for argument about whether a given number is precise. But the overall message is clear. Certain sectors of the defense industrial base will disappear under current plans. Among them are industrial sectors unique to defense, such as tank production, where the loss of those industries will constitute the loss of our entire production capability. For technologies and production infrastructure which require very long lead times to reconstitute, such a lack of capability could have serious consequences.

This is particularly disturbing in two sectors: heavy combat vehicle production, and shipbuilding. Both of these sectors would require an inordinate amount of time to rebuild from scratch, and production of both require application of unique technologies, skills, and facilities. Both sectors are discussed briefly below.

Heavy Combat Vehicles.

The Pentagon won't order any new tanks or Bradley fighting vehicles for U.S. forces after FY 92. We expect foreign military sales (FMS) to support additional tank production through FY 97. But even with FMS we will not fully close the gap between the projected end of tank production in FY 97 and the production of a next generation tank sometime in the next century.

The loss of our entire tank production capability is troubling. Tank production has no commercial analog. Not only is the manufacture of certain tank components unique to defense - for example, armor and cannon production - some of them also require extremely long lead times to rebuild.

The Pentagon has proposed mothballing existing tank production facilities during the period in which the next generation tank is being developed. Such a "layaway"

program is expected to cost about $758 million over a six year period. Even with the layaway, however, the Army estimates that it would still take 51 months, and cost an additional $750 million, to produce the first new tank after restarting production. An additional nine months (60 months total) would be required to surge production rates to 60 tanks per month.

From the perspective of the threat alone, the risk of shutting down all tank production and mothballing facilities while we prepare to "leap-frog" to next generation systems may appear reasonable. What this approach does not consider, however, is how a "leap frog" strategy can be executed if no future suppliers exist to build the system. In addition, absent any capability for modernization or upgrades during the interim, we consign ourselves at best, to accepting static warfighting capabilities over the next decade, and at worst, to declining capabilities relative to other military forces.

Shipbuilding.

The U.S. shipbuilding industry has also been hard hit. During the 1980's, the U.S. fell from the world's number one commercial shipbuilder, to the rank of about 40. Together, Japan and South Korea, both of whose shipbuilding industries are subsidized by their governments, now build almost 60% of all commercial ships worldwide. Of the approximately 3,000 ocean-going vessels ordered during the last three years, the U.S. is building only three of those ships.

Absent commercial ship construction, the U.S. shipbuilding industry is now entirely dependent on Naval shipbuilding for its survival. Given the decline in Navy ship orders, we can expect to see the U.S. shipbuilding base erode even further. A few statistics provide some insight into the extent of the problem:

- Approximately 90% of Navy shipbuilding funds have been concentrated in only five private shipyards over the last several years: Avondale, Bath Iron Works, GD/Electric Boat Division, Ingalls, and Newport News.

- The Navy's proposed shipbuilding program through FY 97 supports less than 50% of the yearly average quantity of ships produced during the last 20 years. The Navy procured an average of 19 ships per year during the 1980s. But during the FYDP, the average number of all ships (including auxiliary ships) procured during the FYDP will be less than 10. We estimate that Naval ship orders will decline even further in the post-FYDP outyears.

- The reduced Navy program is unlikely to support all five of the remaining major construction shipyards. Given current plans, the existing base could be reduced to as few as two major construction yards.

- The current and projected Navy shipbuilding program will not sustain even a 300 ship Navy. Navy force levels determine the number of ships to buy each year over the average life of ships. Given an average service life of 30 years, an average procurement of 10 ships per year is necessary to yield a 300 ship fleet. The Navy program falls below this level.

Reconstitution of a lost shipyard would require large amounts of both time and money. The Navy estimates a minimum investment of $1.5 billion and 6-7 years for construction of a surface combatant yard.

What do we want a future industrial base to do?

We believe a future defense industrial base must be capable of performing the following five functions in order to meet U.S. national security requirements:

Deliver goods currently on contract. At the very least a minimum we would like the base to deliver goods already contracted. This constitutes the shortest term requirement for the base. This seems obvious, and, barring any bankruptcies, the base looks capable of achieving this objective. However, we may well encounter some turbulence in this area: As the production base shrinks, sub-tier vendors disappear, overhead increases and costs of some items skyrocket, the government may be called upon provide substantial financial assistance to enable completion of some contracts.

Maintain/upgrade existing equipment. This capability becomes even more important given the decline, or absence of new system production. Existing systems will have to be maintained over longer periods, and upgrades completed to meet evolving threats.

Survive to produce next generation systems - with high quality and at affordable rates. This objective sounds elementary, and yet it is controversial. The administration, for example, appears to believe that we can live with a production gap for some systems. It is not clear that we can maintain the base absent all production in certain sectors that have no commercial analog.

Develop new high technology. High tech can provide leverage for any future force we field. We will need to grapple with the policy question of how much foreign dependency we can live with.

Provide a basis for reconstitution. If we can preserve a healthy national manufacturing base we will have accomplished this objective. Presumably any new major threat, or a reconstituted Soviet threat will take years to develop. During this period we would need to mobilize the existing defense base, and possibly civilian production capacity as well.

We believe these five objectives support the comprehensive set of military requirements we envision for the future. There is an additional industrial base capability, however, which we have purposely omitted from our list of five objectives: surge production capability. Surge is generally understood as the ability, through excess production capacity, to produce defense end-items at a higher rate in a national emergency. Although we view surge production as a benefit that flows from maintaining a viable production base, we have not listed surge as one of our future objectives, because, for the most part, major end items generally have production lead times which are too long to be expanded to any meaningful degree within the duration of a conflict. Efforts to provide surge production capability for major end items often result in "overfacilitization", which creates idle production capacity and increased overhead costs. While we will want to protect the capability to surge production of some items, especially consumables like ammunition, tactical missiles and special fuels, a "surge-like" capability for parts could be achieved at less cost by procuring additional long-lead items, like landing gear, in advance of need.

II. What Does the Pentagon Say?

Several themes have emerged in DoD's statements on the issue to date. Implicit in these themes are some fundamental contradictions:

Reconstitution. The new defense strategy issued by the Department in August of 1990 articulated reconstitution as one of its six key elements. Reconstitution is generally understood as a rebuilding of defense production capabilities that would be undertaken in response to the reemergence of a global threat. The concept of

reconstitution, therefore, serves as a kind of cheap insurance policy against the worst kind of unforeseen national emergencies. It is premised on the assumption that we will have ample warning time in which to mobilize American industry, and that the infrastructure for such an exercise will exist.

Reconstitution has also been linked by the Department to its new approach to acquisition. According to a recent DoD fact sheet on its new acquisition approach, "the United States must maintain the technological base that would permit reconstitution of larger, highly capable forces should a new threat develop in the future." Further, in the absence of current production, meeting the potential needs of larger military forces "also requires that the Department emphasize technology demonstration and prototype evaluation programs." Finally, demonstration and prototyping is asserted by DoD to "contribute substantially to overall deterrence of aggression" - both in the near and far term - because demonstration and prototyping "will help prove to any potential aggressor U.S. capability and will."

The basic premise behind reconstitution - that we can rely on the reconstitution of forces to meet an unforeseen reemergent global threat - is sound. The requirements for its potential implementation however, appear ill-understood by the Pentagon. On the one hand, DoD has elevated reconstitution to one of the six pillars of U.S. defense strategy. On the other hand, however, the department is using the concept to permit the dismantlement of the production infrastructure upon which reconstitution would depend for execution. Also, the Department's assertion that near-term aggression can be deterred by a U.S. program of technology prototyping is technically unfounded. It is rather unlikely that enough prototypes could be brought to production - given the substantial length of time required

to build a new system - to significantly affect the operations of any near-term combat scenario. For this reason, prototyping will probably not contribute much, if anything, to deterrence.

"Let the market decide." The Department advocates letting free market forces guide the defense industrial base of tomorrow. The difficulty with this as an across-the-board policy is that we don't have a free market where defense-unique commodities are concerned.

Free markets consist of multiple sellers and multiple buyers. If one buyer in a free market stops buying, the seller can still compete for the remaining orders. But the defense market, in many cases, has only a single buyer: the Pentagon. If that single buyer quits buying, the supplier goes out of business, because there is no longer a market. So if we depend on this non-existent market to guide the shape of the future base, we will end up with a non-existent base. This is precisely what appears to be happening in some of our defense industries, notably tank and ship construction.

End current procurements in favor of emphasizing technology prototyping. As noted earlier, the Pentagon has articulated a new acquisition approach of curtailing current modernization in favor of re-allocating those resources to support research and development of advanced technologies for next generation systems. With an increased emphasis on development of technology demonstrators and prototypes, DoD systems would no longer pass automatically from their research and development phases into production. Instead, under the new DoD "strategy", production of new weapon systems or subsystems with new and proven high-tech would only occur if a substantive need for the new system could be demonstrated.

Consistent with an increased emphasis on research and development of technology prototypes, the Department has also proposed to selectively incorporate advanced technology - once proven through prototyping - into existing systems. Finally, the new DoD strategy also supports production of limited quantities of new systems only if cost and operational requirements are met.

Prototyping does have the potential to contribute to our ability to achieve the requirements we outlined for a future base. But in order to provide even limited benefits for a future industrial base, we will need to adopt a non-traditional approach to prototyping. We outline how our approach differs from the traditional prototyping process in the next section.

What the Pentagon's new acquisition approach completely fails to address, however, is whether any suppliers with the right capabilities will be around, first to develop new systems, and then to produce them, if we have allowed them to disappear in the interim.

Conversion. In a recent Report to Congress on the Defense Industrial Base, the Pentagon asserted that "the ability of the base to meet future DoD needs will depend in large measure on the ability of individual companies to shift from defense to commercial production -- and then back again, when required." The report does not suggest why any firm, having gone through the difficult and expensive process of conversion, could return again to defense production.

"Conversion", involves converting existing plant equipment, existing facilities, and the existing workforce to production of a different, but similar product. By definition, the end product of conversion must be related to the product previously in production since it depends on application of the same labor skills, equipment and

facilities. The immediate payoff of conversion is continuation of productive economic activity. The projected payoff for defense is that the skills and facilities preserved could presumably be called upon at a future date for re-conversion to their original defense functions.

But conversion cannot serve as a blanket solution to DoD's industrial base problem. First, by definition, defense unique production activities have no commercially analogous product to convert to. For example, Naval nuclear reactors are fundamentally different from their commercial counterparts. And armor production has no civilian applications. So in the very sectors where DoD could most benefit from conversion, it isn't really an alternative.

On the other hand, maybe DoD really meant to say that firms could diversify - that is to say, move into different product sectors altogether - and not convert. But diversification would not preserve the very skills and facilities that we need to provide us with future defense unique production potential.

Finally, both conversion and diversification are not easy. Conversion efforts should be supported where they can be undertaken. Conversion can play a role in easing some of the economic dislocation anticipated with the contraction of the defense industrial base. It is, however, a very weak reed indeed for the Department to lean upon for preservation of future defense production capabilities. For these reasons, we ought not to rely upon conversion as a solution to the larger problem of the loss of critical defense production capabilities.

III. What Are Our Prescriptions?

The centerpiece of the Pentagon's new acquisition strategy is extensive prototyping. This approach to technology prototyping is not new. I first advocated the

concept some two years ago in a January 1990 speech before the National Strategy Forum. In that speech I contended that we should pursue a "research and development system, rather than a develop and buy system", a system of prototyping. Specifically, I proposed that no new production be undertaken until the following three criteria were met:

First: No production unless the projected threat honestly justified it.

Second: The technology the developers were pushing would have to do the job.

Third: Even if the threat were real and the technology worked, the tech developers would have to show that existing equipment had run out of growth capacity and couldn't be improved to handle the threat before they could go on to a new one.

We further refined this concept over time, with the consultation of manufacturing experts, to include the notion of multiple prototyping cycles for a single system before bringing it to production. The rationale behind the idea of multiple R&D cycles was that it would permit the aggressive exploration, testing and eventual incorporation of several generations of pacing technologies into the end product, but without all the attendant multiple production costs. In essence, we would "roll" the technologies and other lessons learned from one cycle over into subsequent ones. This process eventually came to be known simply as "Rollover."

But "rollover" was never intended to be our only hedge against a reemergent military threat. Nor was it intended to be the sole prescription for an ailing defense industrial base. On the contrary, as I stated in my January 19, 1990 National Strategy Forum speech, "If we're going to count on being able to produce our new weapons when we see the need, we'd better have the industrial capability around to do the job."

The results of our work since that speech are outlined below in the form of four prescriptions. Our strategy assumes that the "market" is an insufficient determinant for predicting and preserving the elements of the defense industrial base that are necessary to support a future force. In contrast to a "laissez faire" policy, our strategy provides a framework for remaining actively engaged in ensuring that we can meet those requirements. Specifically, we believe that we should preserve production capabilities where each of the following are true:

— there is no other firm that performs its function,

— there is no related commercial enterprise, and

— it will take a long time to rebuild the skills and tools once they are lost or dismantled.

A firm which meets each of the above criteria is one which I would label "critical" and "defense unqiue." Its loss would substantially decrement our ability to meet the requirements of even the much smaller US miltary force of the future. Why? Because without any indigenous capability in some industrial sectors — tank, or cannon production for example — we can't achieve most of the objectives we outlined for the future base:

— Without the potential to upgrade systems we have no means of injecting new technologies into our existing equipment inventories and our warfighting capabilities will remain static, or decline relative to the continued force improvements taken by potential adversaries.

— Without the maintenance of some skeletal industrial infrastructure, we cannot perform the engineering and development to lay the groundwork for the next generation system when it becomes necessary, and;

- Without surviving suppliers, who will we call upon to actually build future systems when we need them?

One of the chief objectives of my resource strategy is to ensure that we invest our resources in a manner which preserves either the actual "defense unique" capability, or the potential for that capability. We have developed a four-part approach to procurement which, in contrast to DoD's new acquisition approach, strives to preserve crtitical elements of both the defense production, and R&D bases. We believe both elements are essential to our ability to meet future US security requirements.

None of our four prescriptions are stand-alone solutions. Taken singly, none can ensure that all five of our base objectives defined earlier will be achieved. We believe, therefore, that the four prescriptions outlined below should be implemented as a package.

1) Selectively Upgrade

Critical portions of the production base for certain items can be maintained by upgrading systems or sub-systems. The advantages to performing such upgrades are three-fold: upgrading allows us to modernize systems where modernization through new production is no longer fiscally feasible; upgrading requires production capacity that could also contribute to a surge potential in an emergency; and perhaps most importantly, upgrading sustains a base for production of future systems.

Two years ago Congress directed a tank upgrade program to modernize the armor and electronics of existing tanks. This tank conversion program is a prime example of how upgrades can preserve critical components of our defense production base, with minimum risk, and at minimum cost.

- Conversion of M1s to M1A2s, and from M1A1 to M1A2 sustains armor, cannon, and propulsion elements of tank production. Each of these elements meets our established

criteria for "defense unique."

- Although the next generation tank design is still only in the concept definition phase, the Army estimates that the new tank will use many facets of current technology, e.g., special armor, armor plate cutting, ballistic steel welding, and rotary forging for cannon production. Therefore, maintenance of elements of the existing base is expected to directly benefit this next generation system.

- Maintenance of warm production facilities minimizes our risk through maintenance of both a limited surge capacity, and continuous production capability.

It is somewhat ironic that the Pentagon is willing to curtail all tank production - including an upgrade program - in the current environment. The Secretary of Defense has faulted Congress for buying weapons systems the Department claims no longer to need, and specifically cites the tank. According to DoD, the Army has a sufficiently large tank inventory (some 8,000 M1 variants) to sustain it for the foreseeable future. Although we probably do not need to upgrade all 8,000 tanks in the inventory, it is precisely because we will be keeping that inventory for the indefinite future that we should preserve our ability to modernize it.

2) Selective low-rate procurements

For some systems, a strategy of upgrading will not be sufficient to maintain a viable production base. In such cases, we should maintain a low volume procurement rate to sustain critical suppliers.

Portions of the shipbuilding industry are prime candidates for this approach. In the highly specialized area of naval nuclear propulsion, for example, our production base has already contracted to sole suppliers for

key components. These remaining suppliers cannot stay viable without at least enough orders to keep production at a minimum level. Some have estimated this minimum level to be one naval reactor per year. But even this rate is probably unsustainable given current DoD purchase plans.

Because of the unique nature of naval reactor components, construction and operations, the strategy of using upgrades as a solution to supplier maintenance is not valid in the case of reactors. If we want to maintain the capability to outfit future ships with nuclear propulsion we must ensure that these suppliers remain viable. We need to determine a fair and legitimate minimum production rate and then ensure that we fund those suppliers at that level.

Maintenance of a viable production base can also provide a near-term hedge against the uncertainties associated with future system development and production. For example, the F-16 is the only remaining Air Force fighter in production. Absent F-16 production, the Air Force will be completely dependent on the successful development of the Advanced Tactical Fighter (F-22) for the next generation fighter. We only need recall the cancelled Navy A-12 attack aircraft program to remind ourselves that program risks exist.

3) "Rollover-Plus"

The first two approaches outlined above - upgrading, and limited procurements - aim primarily to sustain a minimal production capability in defense unique industries. Those two approaches cannot alone, however, ensure a healthy ability to explore and develop new technologies which will ultimately lead to advanced, next-generation systems. But our current system for developing and fielding advanced systems is also no longer feasible in the new budget environment. What we need therefore, is a way to maintain the potential for modernization of systems, or components of

systems less expensively. We believe that a "rollover-plus" strategy can contribute significantly to our ability to accomplish just that.

In essence, we mean a process of continuous prototyping and development of manufacturing technologies. But this process would differ significantly from the process traditionally used in prototyping defense systems in that we would not commit to quantity production at the outset of the development. Instead, a prototype would not be brought into full scale production until the resulting component or system met stringent criteria. Those criteria are A) the technology works, B) it is required by development of the threat, or C) represents a breakthrough that would alter battlefield operations. If the resulting prototype did not meet those criteria, however, we would "rollover" the new technologies and lessons learned from development into a further iteration of engineering, development, and prototyping.

The benefits of engaging in such a process are:

- it preserves design and engineering expertise and continuity;

- it advances production technologies and processes, thereby lowering production problems and therefore the ultimate cost of a system;

- it keeps us at the forefront of technology development;

- does each of the above without the current attendant costs of a full-up production program.

In an era where we are no longer compelled by the threat to continuously introduce new systems and technologies into our military forces, this approach allows us to develop our

high-tech potential, and field the most promising systems on the basis of significant technological or operational leaps. Instead of threat driven development, we can now move toward tech-driven development. Given the limited budget resources and the growing need to extend the life of current systems, we believe this approach to be especially promising for development of sub-systems for upgrading existing inventories.

So far, this approach may sound similar to the new acquisition approach outlined by the Administration in its budget submission. But rollover-plus differs in several key respects. Whereas the Administration appears to be satisfied to put the blueprints for a prototype on the shelf after it has been developed, rollover-plus seeks to attain two additional objectives: it would require the resultant prototype to be production friendly and would thoroughly test prototypes of promising technologies and systems in an operational context.

Let me explain. Traditionally, prototypes have been developed to provide a range of information: to resolve technical questions about new technologies, provide insights into a system's appearance and spatial layout, and to test sub-component integration into a system. Traditional prototypes, therefore, have been developed primarily to understand technical performance issues. Although the resolution of technical performance issues is a key element of any prototyping strategy, our "prototyping-plus" strategy incorporates two additional objectives: manufacturing producibility and resolution of operational performance issues.

What do we mean by manufacturing producibility and why is it important? Industry experts have told us that one of the most difficult phases in the development of a new system

is the transition from a prototype to quantity production. Since most prototypes are typically built by specialized design engineers who do not get involved in the process of serial production, problems with the actual manufacturing process can arise on the factory floor which were not anticipated by the prototype engineers.

Development of a producible prototype could be furthered through adoption of a development process which actively involves the manufacturing engineers in the prototyping process itself. Such a process - known as concurrent engineering - was pioneered some years ago by the Japanese auto industry, and is slowly becoming more widespread in the U.S. Since concurrent engineering can reduce the number of late engineering changes that might otherwise be required during the transition from development to production, it also has the added benefit of reducing overall system cost. For systems which we would eventually bring to production, this is an important benefit.

In addition to developing a "producible" prototype, we must develop enough prototypes for field testing to enable the users of the new system - the military services - to understand its operational contributions and requirements, for example, the potential contribution to tactics and doctrine offered by the system, and its battlefield maintenance requirements. In addition to helping the military understand how the new system might be integrated into existing forces and operations, extensive field testing of prototypes would allow the user to provide necessary feedback to the system designers if modifications or improvements were required.

We are looking at the next generation tank, the so-called "Block III" tank as a candidate system for rollover-plus. We think it's ideally suited for this kind of

development: there is no immediate warfighting- or inventory- driven requirement for production of this system, available program funding is currently insufficient for a full-up development program, but yet we have a need to continue technology development for the next generation system.

4) "Silver Bullet" procurements

"Silver bullet" procurements are just like they sound: highly capable systems procured in limited quantities and reserved for operations where a high-tech advantage could maximize U.S. leverage. F-117 operations in the Persian Gulf War might be viewed by some as an example of the use of a "silver bullet." Technologically superior weapons clearly have the potential to save U.S. lives. But in the security environment of the future, our need for large quantities of such systems has diminished.

Buying systems in limited quantities is entirely consistent with a rollover-plus development process. By definition, a "silver bullet" meets the criteria we established for bringing a rollover prototype into production: it must represent a significant technological advance, and must demonstrate the potential to alter battlefield operations.

Making the prescriptions work

We recognize that the successful implementation of the prescriptions listed above may not be possible within the context of our current contracting processes. We should work with industry to develop a new philosophy toward contracting which would seek to reduce regulations and management constraints while streamlining the design process. For example, we ought to insist upon a concurrent engineering and design process to reduce eventual production risks and problems. We should also explore mechanisms for inducing contractors to put a greater emphasis on

manufacturing technologies and the ultimate producibility of any system.

These are precisely the objectives that Congress set forth in the FY 92 Authorization Bill for the Advanced Tactical Fighter, or F-22. Legislation now requires that the Air Force "should give priority in the Engineering and Manufacturing Development Phase to investing in ATF manufacturing technologies over improving ATF performance."

Many may complain that the approach outlined above will not prove profitable, or that it is unworkable for other reasons. We understand that shifting to a new acquisition process will not be easy. And we also recognize the need to revise the existing acquisition process to make R&D more profitable. Currently, a substantial, or majority share of R&D is paid for by industry with the expectation that future profits will be earned from large production runs. In the absence of large production runs this clearly must change.

We already have evidence that such a process can be achieved, and that it can indeed be profitable. The Lockheed Advanced Development Company, or "Skunk Works" in Burbank, California for example, provides an example for a high-tech, streamlined acquisition process. The Skunk Works which has developed systems such as the U-2, the SR-71, and the F-117, developed each of them in small quantities, each pushed the bounds of existing technology, and each was profitable. We should endeavor to learn how we might apply lessons learned from this model to the procurement process at large.

CONCLUSION

We believe we can meet each of the five requirements we established for a future defense industrial base through implementation of the four prescriptions outlined above. The first two prescriptions - selective upgrading, and low-rate procurements - essentially ensure that we can meet current base requirements:

- deliver goods already on contract,
- maintain and upgrade existing equipment, and
- provide potential for a limited surge capacity.

Each of these objectives are achieve through the preservation of a minimal warm production base.

Our second two prescriptions - "rollover," and "silver bullets" - secure our ability to achieve future base requirements:

- survive for next generation production,
- develop new high tech, and
- provide a basis for reconstitution.

Further, and perhaps most importantly, we believe that our ability to meet current base requirements is an absolute prerequisite to our ability to meet future objectives. In other words, maintenance of current production capabilities is a necessary bridge to providing future capabilities. Without preservation of a minimal production capability in defense-unique activities, we lose the very suppliers upon whom we are relying for research, development, and production.

It is my hope that we can work with the Department of Defense and with industry in pursuing a strategy that is mindful of both budgetary pressures, and future requirements. I offer this four-point resource strategy as a point of departure for this dialogue.

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U.S. House of Representatives

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RUDY DE LEON, STAFF DIRECTOR

February 26, 1992

MEMORANDUM

TO: Colleagues

FROM: Les Aspin, Chairman

RE: Thinking through Defense 1997 Alternatives

- As you know, I appeared before the House Budget Committee yesterday at Chairman Panetta's invitation to help that committee think through how to approach defense in the post-Cold War world.

- Attached are the materials that I presented to the Budget Committee members. As you'll see, these materials follow logically from the papers on threat-driven budgeting, conventional forces and nuclear policy I sent you recently.

- In consultation with other HASC members, I have developed four <u>illustrative</u> options of what our defense forces might look like at the end of five years. All four are based on a threat-driven methodology, and all four have five year defense savings attached to them. Clearly, these are not the only options available, and I have included some of the other proposals out there for your information.

- I'd be interested in any comments you might have on this approach. Please let me know if I can provide any additional information.

Defense 1997 Alternatives

A Briefing by

Rep. Les Aspin, Chairman
House Armed Services Committee

February 25, 1992

CHART I

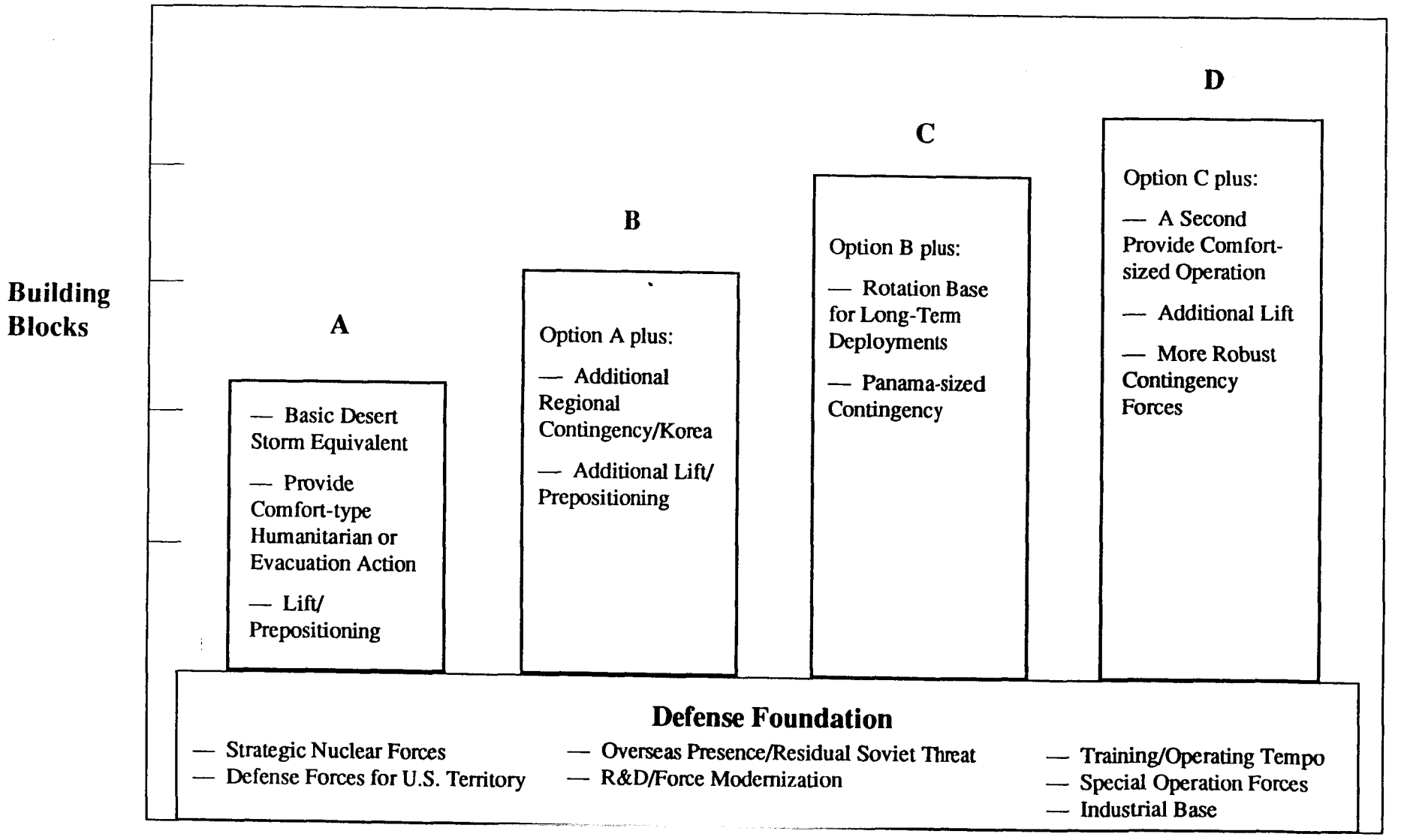
Underlying Philosophy for U.S. Military Forces in the New Era

Secretary Cheney's Position	A Better Methodology
Responds to one revolution (1989 breakup of the Warsaw Pact)	Responds to two revolutions (1991 breakup of the U.S.S.R.)
Defense by subtraction	Bottom-up review of forces
Based on organizational needs and view of what a superpower must have	Based on forces needed to deal with threats to important U.S. interests

Rep. Les Aspin, Chairman, House Armed Services Committee February, 1992

CHART II

Using the Building Blocks: Defense 1997



Rep. Les Aspin, Chairman, House Armed Services Committee February, 1992

CHART III

Defense Foundation

Provides the bedrock on which to rest threat-based options. It includes:

Training and Operating Tempo to maintain current high levels of readiness in military forces.

Research and Development to provide a fully funded technology base, a robust acquisition strategy and innovative approaches to prototyping.

Procurement Funding to keep the force well equipped while protecting the integrity of the industrial base.

Strategic Nuclear Forces designed to hedge against a change in relations with the nuclear successor states of the Soviet Union.

Forces for Overseas Presence including those intended to respond to any residual conventional threat from the Soviet successor states.

Defense Forces for U.S. territory.

Special Operations Forces for anti-terrorist and other contingencies.

Rep. Les Aspin, Chairman, House Armed Services Committee February, 1992

CHART IV

Comparison of Alternative Future Force Structures

	Force A	Force B	Force C	Force D	Base Force	End FY 91 Force
ARMY						
Active Divisions	8	8	9	10	12	16
Reserve Divisions	2	2	6	6	6	10
Cadre Divisions	0	0	0	0	2	0
MARINE CORPS						
Active Divisions	2	2	2	3	2 1/3	3
Reserve Divisions	1	1	1	1	1	1
AIR FORCE						
Active Wings	6	8	10	11	15	22
Reserve Wings	4	6	8	9	11	12
NAVY						
Ships (total)	220	290	340	430	450	528
Carriers	6	8	12	15	13	15
SSNs	20	40	40	50	80	87
Assault Ships	50	50	50	82	50	65
SEALIFT						
Fast Sealift Ships	16	24	24	24	8	8
Afloat Prepositioning ships (beyond MPS)	20	24	24	24	8	8

Rep. Les Aspin, Chairman, House Armed Services Committee February, 1992

CHART V

Reductions from the Base Force of Alternative Defense 1997 Force Structures

	Force A	Force B	Force C	Force D	Base Force
ARMY					
Active Divisions	- 4	- 4	- 3	- 2	12
Reserve Divisions	- 4	- 4	0	0	6
Cadre Divisions	- 2	- 2	- 2	- 2	2
MARINE CORPS					
Active Divisions	- 1/3	- 1/3	- 1/3	+ 2/3	2 1/3
Reserve Divisions	0	0	0	0	1
AIR FORCE					
Active Wings	- 9	- 7	- 5	- 4	15
Reserve Wings	- 7	- 5	- 3	- 2	11
NAVY					
Ships (total)	- 230	- 160	- 110	- 20	450
Carriers	- 7	- 5	- 1	+ 2	13
SSNs	- 60	- 40	- 40	- 30	80
Assault Ships	0	0	0	+ 32	50
SEALIFT					
Fast Sealift Ships	+ 8	+ 16	+ 16	+ 16	8
Afloat Prepositioning ships (beyond MPS)	+ 12	+ 16	+ 16	+ 16	8
PERSONNEL					
Active	- 379K	- 314K	- 217K	- 51K	1,626K
Reserve Components	- 254K	- 229K	- 16K	+ 13K	920K

Rep. Les Aspin, Chairman, House Armed Services Committee February, 1992

CHART VI

Defense 1997 Compared to Recent Proposals to Cut Defense Spending

National Defense Function — Budget Authority
(in Billions of Dollars)

	Fiscal Year 1997		Five-Year Cut FY 1993-97
	Current $	Constant FY93 $	
Old Baseline (10/91) (FY92 Bush Request)	305	264	
Option D	295	255	- 38
FY93 Bush Request	291	251	- 50 *(a)*
Gramm (1/92)	N/A	N/A	- 74
Mitchell (1/92)	N/A	N/A	- 100
Option C	270	234	- 114
Kennedy *(b)*	269	233	- 115
Sasser *(c)*	N/A	N/A	- 120/ - 140
McCain *(d)*	259	224	- 130
Option B	246	213	- 187
Option A	231	200	- 231
Brookings	207	179	- 310
Government Operations (Informal Working Group)	185	160	- 342
Dellums *(e)*	N/A	N/A	- 400

(a) This figure includes proposed FY92 savings and excludes inflation savings.
(b) Kennedy has proposed $210 billion cut over seven years.
(c) Sasser has proposed $120 - 140 billion cut over five years, with $15 - 17 billion cut in FY93.
(d) McCain's proposal has been adjusted for consistency.
(e) Dellums has proposed a $400 billion cut over four years, FY93 - 96.

Rep. Les Aspin, Chairman, House Armed Services Committee February, 1992

CHART VII

Defense 1997 — Alternatives

Measured Against the Current Baseline
National Defense Function — Budget Authority
(in Billions of Dollars)

	Fiscal Year 1997		Five-Year Cut
	Current $	Constant FY93 $	FY 1993-97
Current Baseline (1/92)	301	260	
Option D	295	255	- 15
FY93 Bush Request	291	251	- 43
Option C	270	234	- 91
Option B	246	213	- 164
Option A	231	200	- 208

Rep. Les Aspin, Chairman, House Armed Services Committee February, 1992

CHART VIII

The Fiscal Year 1993 Debate
Three Variables

— Rescission

— Budget Walls

— Reinvestment/Conversion

Rep. Les Aspin, Chairman, House Armed Services Committee February, 1992

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RUDY DE LEON, STAFF DIRECTOR

March 2, 1992

MEMORANDUM

To: Colleagues

From: Les Aspin, Chairman, House Armed Services Committee

Re: **A New Threat-Based Strategy for our Nuclear Policy**

- I want to report to you about some thinking I have been doing about how we might fundamentally redefine our traditional nuclear policies.

- As you know, I have been suggesting for some time, through a series of working papers, that we rethink our country's traditional security policies in light of the collapse of the Soviet Union.

  I have proposed that we adopt a bottom-up methodology to size and shape our forces. I suggested that we design our forces to deal with the generic real world threats that might actually endanger us. This strategic approach should make us militarily stronger and more secure than simply buying less of the same old Cold War forces --- a defense by subtraction.

- Now, in the attached working paper, I have used the same bottom-up, threat-driven methodology to reexamine our nuclear policies.

  Specifically, this paper begins to address the nuclear threats we increasingly face from the continuing spread of nuclear weapons, the danger of accidental or unauthorized launch, and the "loose nukes" problem.

- Here is the heart of my reasoning:

  - We have experienced a radical reversal of the relationship between nuclear weapons and our country's security strategy.

  - During the Cold War we believed nuclear weapons to be our equalizer -- our ultimate counter to Soviet conventional superiority.

    Therefore, if there had been an opportunity to rid the world of nuclear weapons during the Cold War, the United States would have declined.

  - Now nuclear weapons could be someone else's equalizer -- their ultimate counter to our conventional superiority.

    The demise of the Soviet conventional threat and our military success in the Gulf leave us as the lone conventional superpower. Although we've worried for years that chemical weapons could be the "poor man's nukes," now the spread of nuclear weapons technology to the third world could make nukes the "poor man's nukes."

    Therefore, if we now had the opportunity to rid the world of all nuclear weapons, we would.

  - The character of the new nuclear threats -- multiple, small-scale, and possibly non-deterrable -- is different from the nature of the old Soviet threat -- single, large-scale and deterrable.

  - These changes in the nuclear threats we may face and the reversal of our basic interests in nuclear weapons themselves have implications for every aspect of our nuclear weapons policy.

- The paper still represents work in progress. I hope you will write to me with any suggestion you may have.

(P.S. I'm working on a companion piece which will suggest how we might take advantage of the dramatically improved U.S.-Russian relationship to create a safer and more stable arrangement for the future, while protecting U.S. security in the event that in the future good relations turn bad. Stay Tuned.)

From Deterrence to Denuking:

Dealing with Proliferation in the 1990s

By

Rep. Les Aspin, Chairman
House Armed Services Committee

February 18, 1992

PREFACE

One of the most pressing questions before us today as a nation is how to secure our nuclear safety in the new post-Cold War, post-Soviet era. This paper begins to address the question by considering the issues of the continued spread of nuclear weapons, the dangers of accidental or unauthorized launch and the "loose nukes" problem.

A companion piece will suggest how we might take advantage of the dramatically improved U.S.-Russian relationship to create a safer and more stable arrangement for the future, while protecting U.S. security in the event that in the future good relations turn bad.

These two nuclear papers are the product of a unique consultative process. I sent an earlier draft that combined both sets of issues to about 150 prominent defense experts, as well as to a number of my colleagues in Congress. I asked for their frank comments and criticism. And I got it.

As a result, the paper that follows has been revised substantially from the previous draft. In my view, it is much improved. Any errors and questionable judgments that remain are, alas, mine alone.

The paper still represents work in progress. The number of creative and far-reaching suggestions that have come still require considerable thought. In one area in particular it is clear to me that much more work is needed. That concerns the question of how we can strengthen our efforts to stem nuclear proliferation. This may be the most serious security threat to the United States in the future.

The end of the Cold War offers an opportunity -- and an imperative -- to rethink our nuclear weapons policies from the ground up. This is a daunting undertaking that will require everyone's best efforts.

This paper offers a starting point for this work, and reflects the contributions of many others. It is my intention to continue and expand this consultative process as we further define appropriate policies to reduce future nuclear threats to the United States.

I. INTRODUCTION

Nuclear deterrence has been the linchpin of U.S. strategy for dealing with the two scenarios that overwhelmingly dominated U.S. defense planning: a massive Eastern Bloc conventional attack on Western Europe and a massive Soviet nuclear attack on the United States. A policy of nuclear first use was adopted to deter a conventional attack in Europe and strategic nuclear retaliation was designed to deter an attack on the United States.

These two drivers of U.S. nuclear policy have been fundamentally, changed by two modern Soviet revolutions.

The first modern revolution began with then-President Mikhail Gorbachev's announcement in December 1988 that the Soviets would unilaterally reduce their troops in Eastern Europe, and was essentially complete by the time the Berlin Wall came down in November 1989. By the end of this first revolution, the Warsaw Pact was gone and along with it the threat of a Warsaw Pact conventional attack on Europe.

In March 1990, then-CIA Director William Webster told the House Armed Services Committee:

> The dramatic changes, either planned or already implemented, will be increasingly difficult to reverse. To do so, new hardline military leaders in Moscow would have to revive traditional military doctrine and procurement priorities, or adopt new ones. Either course would be disruptive and expensive, and would result in significantly lower readiness at least in the short term.
>
> More importantly, rebuilding forces to traditional levels would be unpopular with a populace weary of shortages and sacrifice.

Webster went on to say, however, that "...the Soviets are pursuing a broad-based strategic modernization effort. They are protecting, and in some ways improving, the overall capabilities of their strategic forces."

In other words, after the first revolution, the Warsaw Pact disappeared, but the Soviet nuclear threat remained.

The second modern Soviet revolution began on 19 August 1991, when Moscow hardliners launched an abortive coup. It accelerated the demise of the Communist Party and the dissolution of the Soviet Union. It put reformers firmly in power and established their agenda as the agenda for the successor states to the Soviet Union.

In December 1991, the new Director of Central Intelligence, Robert Gates, testified to the committee that the second revolution had already changed significantly the picture for Soviet strategic modernization, and would change it much more in the future:

> Earlier, we had judged that the Soviets would preserve and protect their strategic programs, because of their symbolic importance as much as their deterrent value. But it is increasingly hard to see how Russia or any other republics with nuclear strategic weapons will be able to continue the modernization effort--or even why they would want to, given the rapid dissipation of tensions with the West.
>
> Therefore, we should not be surprised if most or all Soviet plans for strategic offensive force modernization are abandoned for the foreseeable future. This is clearly <u>not</u> what the military wants to happen, only a reflection of the likely priorities of republic leaders and the economic facts of life.

This judgment was made possible by a historic shift in the relationship between the United States and the successor states to the Soviet Union. That relationship is now somewhere between the old Cold War relationship and the relationship we have with two other members of the nuclear club, the United Kingdom and France. Both the U.K. and France have nuclear weapons that can reach the United States, but the United States has no fear of their arsenals.

Clearly, the U.S.-Russian relationship remains quite different from the U.S.-British or U.S.-French relationship. What is momentous, though, is how different it is from the Cold War U.S.-Soviet relationship.

In sum, three changes have taken place. First, the conventional military superiority of the other side has evaporated. Second, strategic modernization programs in the former Soviet Union have slowed down and will slow to a halt. Third, the relationship with the successor states of the Soviet Union has undergone a fundamental change.

Taken together, these changes have not only shifted the bedrock on which U.S. nuclear policy was based, they have literally reversed U.S. interests in nuclear weapons.

II. From Equalizer to Equalizee

During the Cold War, the United States and its NATO allies relied on nuclear weapons to offset the conventional superiority of the Warsaw Pact in Europe. Even a few years ago, if someone had offered the United States a magic wand that could have instantly wiped out all nuclear weapons and the knowledge to make more of them, the reality is we would have declined the offer.

Nuclear weapons were the great equalizer that enabled western capitals to deal with numerically larger Eastern Bloc forces. To have used the magic wand would have made the world safe for conventional war. This was not a desirable outcome when large Eastern Bloc conventional forces were deployed right up to the inner German border.

Today, however, circumstances are dramatically different. With the disappearance of the Warsaw Pact and the fading of the threat posed by former Soviet forces, the United States is the biggest conventional force on the block. Nuclear weapons still serve the same purpose -- as a great equalizer. But it is the United States that is now the potential equalizee.

The war with Iraq is a case in point. It is reasonable to speculate that it would have been enormously difficult to put together a coalition of allies against Iraq from among those countries on or near its borders if Iraq had had nuclear weapons, particularly nuclear weapons matched to Scud ballistic missiles.

Today, if offered that magic wand to eradicate the existence and knowledge of nuclear weapons, we would very likely accept it. This radical change in our interests in nuclear weapons is the backdrop against which we must understand the evolving nuclear threats we face today.

III. NUCLEAR THREATS IN THE POST-SOVIET WORLD

During the Cold War, the overriding U.S. concern was the deterrence of nuclear war with the Soviet Union. In this long struggle, the United States could count on an adversary that was known and rational. It was understood that any order for a nuclear attack on the United States was also a suicide note.

The danger of a superpower nuclear exchange has now receded greatly. But other threats have emerged. The end of the Cold War and the dissolution of the Soviet Union means that the chances of national annihilation through all-out nuclear war are much diminished. But the very demise of the Soviet Union may accelerate trends that make other nuclear dangers more acute.

Proliferation

The proliferation of nuclear weapons is now the chief security threat we face in the post-Soviet era. Proliferation of the technology has continued for the past 20 years, largely obscured by the shadow of the superpower competition. The extent of Saddam Hussein's nuclear ambitions, and near-success in achieving them, should be a wake-up call not just about Iraq but about other countries as well.

Today, in addition to the five acknowledged nuclear powers (U.S., the former Soviet Union, Great Britain, France and China), another four countries are believed to either have nuclear weapons or the ability to assemble them on short notice: Israel, India, Pakistan and South Africa.

Several more nations are now pursuing nuclear capabilities, or have done so in the past, including Iraq, North Korea, Libya, Iran, Argentina, Brazil and (according to some reports) Algeria. Iraq appears to have been within a year of acquiring a nuclear capability. North Korea is now within a similarly short distance. Additional countries, including Moamar Gadhafi's Libya, have had less success to date, but would very much like to have a nuclear bomb.

"Loose Nukes"

Of particular concern today is the impact that the breakup of the Soviet Union could have on proliferation. At issue here is a set of problems that has come to be known collectively as "loose nukes."

The Soviet Union had nearly 30,000 nuclear weapons, of which about 10,000 were long-range strategic weapons and the remainder tactical weapons. The proliferation dangers of this stockpile are three-fold.

The first concerns proliferation of nuclear weapons states. Strategic missiles are deployed today in Russia and three other republics. Belarus has on its territory a substantial force of 100 strategic weapons. Both Ukraine or Kazakhstan have well over 1,000 strategic nuclear weapons deployed on their territory.

Today, Russian President Boris Yeltsin is believed to possess the codes necessary to authorize a nuclear launch, but has agreed to consult with the leaders of the other three republics prior to a launch. This is an acceptable result. One finger on the button, or even four fingers on the button as long as each person can veto and not authorize a launch, works.

It is strongly in the U.S. interest that there be only one nuclear chain of command and that it be in experienced hands. More than one button, each controlling a portion of the present arsenal, would

increase nuclear danger to the U.S. Even if we had good relations with the new nuclear nations, there would be an increased possibility of accidental or unauthorized launch.

Present trends are positive. All three republics have committed to eliminate the strategic weapons on its territory, Ukraine by the end of 1994, and Belarus and Kazakhstan by 1999. In the meantime, it has been agreed that control of the weapons will remain in Moscow. Nevertheless, relations between the republics are strained, and there remains a residual danger that strategic weapons will be employed as bargaining chips in inter-republic conflict.

The second, and most immediate concern is the danger posed by the possibility that a weapon or fissile material for making a weapon will fall into the wrong hands. This chiefly arises with tactical weapons. The troubling equation is a simple one: bad morale in the armed forces equals reduced security equals greater risk of lost or stolen weapons.

Today, tactical nuclear weapons are reported to remain only in Russia, Ukraine and Belarus, and it is planned to consolidate all tactical weapons in Russia by July 1, 1992. Once in Russia, nearly all of these weapons are to be dismantled. It may be a decade or more, however, before dismantlement is completed. Moreover, once the weapons are dismantled, the weapons-grade uranium and plutonium is a valuable and dangerous commodity. It is the lack of this material that is the principal obstacle to bomb acquisition by Third World nations.

Third, there is the danger that the economic chaos of the former Soviet Union will drive its nuclear scientists into Third World nuclear programs, hastening the day when more members join the nuclear club. This is the so-called Brain Drain problem.

From whatever source, nuclear proliferation poses three distinct security challenges to the United States.

First, proliferators may threaten nuclear use to deter the United States and the international community from taking actions that are in our interests. The overwhelming performance of U.S. conventional forces in the war with Iraq was not lost on Third World nations. The Indian defense minister is reported to have responded when asked what lessons to draw from the Gulf War: "Don't fight the United States unless you have nuclear weapons."

The second security challenge arising from enlarging the club of nuclear nations is the high potential that the proliferators may lose control of their weapons, resulting in accidental or unauthorized use, or loss to third parties.

It is unlikely that the sophisticated command and control schemes of the United States or Russia, or even the more rudimentary system in China would be duplicated in a Third World nation conducting, perhaps clandestinely, a program to develop a bomb.

The third and perhaps most problematic security challenge arises from situations in which deterrence may not operate. Deterrence requires that adversaries be identified and that they behave rationally. These elements are present in the large majority of situations in which we might be militarily challenged in this new era, and we can therefore expect deterrence to work should those opponents have or acquire nuclear weapons. The absence of either one of these two factors, however, could remove the fear of retaliation on which deterrence depends.

Candidates for such an event include a national leader who is not rational, a surrogate acting for a nation seeking to hide its responsibility, or a terrorist or other sub-national group that could expect to remain hidden and out of the reach of retaliation.

Unauthorized or Accidental Launch

The existence of strategic nuclear arsenals has always carried with it the possibility of accidental or unauthorized launch. The question here is how the enormous changes going on in the successor states to the Soviet Union affect the chances for either.

In fact, our concerns with these two possibilities have been reversed. The absence of superpower tensions and confrontations has reduced the chance for accidental launch. The changes that brought about a reductions in those tensions have also introduced a number of uncertainties. Those uncertainties increase the chance of unauthorized launch.

In the old threat era, concern centered on accidental launch in time of crisis. Nuclear forces are generally postured to "fail safe." That is, they are postured so that a failure of the control system does not result in a launch or detonation. The failure is safe. In time of crisis, when forces are put on a high state of alert, that shifts to "fail deadly." That is, control system failure can result in a launch. The failure is deadly.

During the Cold War, global competition, often through surrogates, provided crises and opportunities for confrontation. In today's world, it is difficult to write a plausible scenario for bringing the respective nuclear arsenals to full alert status, so the chances of accidental launch are accordingly reduced, and will remain so in the absence of a political reversal.

Unauthorized launch presents the opposite picture. In the days before the second modern Russian revolution, there was no question that iron-clad control was maintained over strategic weapons. There is no direct, specific evidence today that that control has lessened.

Today, however, the changes going on in the former Soviet Union have raised the possibility of civil strife or civil war. These would greatly increase the risk that a nuclear weapon would be used without authorization from higher political authority. Short-range tactical weapons present the larger threat, since many are not protected by permissive action links (PALs). Although tactical weapons launched from Russia could not reach the U.S. directly, the risk is that they could reach U.S. soil by airplane, ship or other means.

All Soviet strategic weapons are believed to have PALs, and so should pose less of a risk than tactical weapons. However, there are at least two scenarios where the control of strategic weapons could be compromised. The first is a conspiracy involving at least one person in the General Staff with access to the PAL launch codes, and one military officer with the ability to employ these codes to launch a strategic missile. Not enough is known about the command and control of Russian strategic forces to be sure exactly how many people would be required for such a conspiracy to succeed in launching a missile. If the right people (or from our perspective wrong people) got together, it is possible that only a very few would be needed.

The second scenario is a breakdown of order in the former Soviet Union and discipline in the armed forces. PALs do not protect against unauthorized launch indefinitely, but are designed to buy time for the weapon to be recovered. If a state of societal chaos or civil war develops in the former Soviet Union, the risks of losing control of a strategic missile for a sufficient period to allow its launch could grow enormously.

Under circumstances that obtain today, the possibility of an unauthorized launch of a strategic nuclear weapon -- while still small -- must be rated as greater in the post-Soviet world. In the event of widespread civil strife or civil war, neither of which can be ruled out, this risk would rise dramatically.

Table 1. Nuclear Threats to the U.S.: Old versus New

THE OLD THREAT	THE NEW THREATS
Single threat	Multiple threats
Known	Unknown
Soviet rational actor	Non-Soviet, non-rational, or both
Large-scale (intentional) attack	Small-scale, terrorist
Deterrable	Non-deterrable
Accidental	Unauthorized

IV. REDUCING NUCLEAR DANGER IN THE NEW ERA

The era of the classical superpower nuclear threat is passing. Deterrence is still a necessary response to the residual classical threat, but it is not adequate to deal with the full range of nuclear dangers we face in the post-Soviet era. Two characteristics of this new era are central to the discussion of reducing its nuclear dangers.

The first is that there is no analogue to deterrence as a nuclear policy in the new era. That is, no single policy or action will meet these diverse threats. It will be necessary to generate a package of responses.

The second is that the fundamental shift in our interests regarding nuclear weapons has undercut old notions of what constitutes appropriate response from the political left and the political right. Responses to the new dangers will be found across the former political spectrum of nuclear policy.

I have made an attempt below to outline a program to produce such a package of responses. The program is tentative and intended to spur frank discussion of the requirements of this new era.

Directly reducing nuclear threats

The first line of defense in the new nuclear era must be to devote much greater effort to the direct reduction of potentially undeterrable nuclear threats.

Stemming proliferation

In the past, chemical weapons were considered the "poor man's nuke." Within the next decade, the poor man's nuke may be nukes. Nuclear weapons would likely be the only way a nation with inferior conventional forces could hope to counter our superiority. So it is in our supreme national interest to stem the spread of nuclear weapons, nuclear weapons technologies, and their associated delivery systems.

There are a number of steps we need to consider. These include: how to strengthen the International Atomic Energy Agency (IAEA), which is responsible for verifying compliance with the Non-Proliferation Treaty but simply does not have the authority or resources to do so; how to tighten export controls on sensitive technologies, an area where some of our allies have been sorely lacking; and how to improve our intelligence capabilities about emerging nuclear programs.

Iraq is a perfect case study where efforts fell short in all these areas: Iraq signed the NPT in 1968, and was considered in full compliance with its safeguards agreement with the IAEA; it received much technical help from the West; and U.S. and Western intelligence seriously underestimated the extent of Saddam's nuclear program.

Changing global circumstances offer new possibilities for slowing or stopping nuclear proliferation in two important ways.

First, because we are no longer engaging in proxy wars or conflict with the former Soviet Union, proliferation does not have to take a back seat in our relations with Third World countries to broader geopolitical concerns.

Second, the possibility is much greater for cooperating with the Russians to stop proliferation. This can involve activities ranging from the sharing of intelligence, to promoting regional security in the Middle East and Southwest Asia, to combined efforts to physically destroy Third World nuclear facilities. The Soviet support of the Gulf War, and the United Nations' continued efforts to root out Iraq's nuclear, chemical and biological capabilities is a very encouraging sign that increased cooperation may be possible in the future.

Accidental/Unauthorized Launch

We should look for ways to cooperate with the former Soviet Union in a manner that advances our goals. One area already under discussion is joint activities to improve missile warning to reduce the chance of mistaken retaliation. Another would be to improve the technical means to help prevent accidental or unauthorized launch, including the placement of PALs and post-launch destruct switches on all ballistic missiles. PALs are devices that require an additional code or step in the firing process before the individual weapon can be launched. Post-launch destruct switches are common in test missiles so

they can be destroyed in the air if they go off course. Such devices could be used to destroy missiles in flight whose launch was unauthorized.

Congress expressed its support for such measures in the FY92 defense authorization bill. I am told that a report on the subject is forthcoming soon from a presidential panel headed by Ambassador Jeanne Kirkpatrick. The committee will be looking into these measures in detail over the coming months.

Loose Nukes

The immediate problem presented by "loose nukes" in the former Soviet Union has the potential to greatly accelerate the proliferation of nuclear weapons to more countries. If we mishandle this problem, it could create dangers that we will have to deal with for years to come.

Congress took an important step to deal with "loose nukes" when it approved recently the spending of $400 million from the FY92 defense budget to assist in disabling, dismantling and destroying Soviet nuclear weapons. To date, however, none of these funds have been spent, and no nuclear weapons have been disabled or dismantled under international supervision. A big reason for the slow pace over the last several months was that the Russians were poorly organized, and not prepared to identify where they needed help. That has now changed, and the U.S. technical working group had a productive meeting with their Russian counterparts just a few weeks ago. We now need to follow-up much more aggressively in addressing this problem.

Our goals are straightforward. If we met them all, the following situation would result within a short period: all Soviet tactical nuclear weapons would be either dismantled or in secure storage in Russia, awaiting dismantlement; the fissile material resulting from warhead dismantlement would be well-protected and safeguarded in secure storage; and Soviet nuclear scientists would not be producing new weapons, but working to dismantle the Soviet nuclear arsenal and clean up the environmental mess it created. Finally, strategic weapons will be consolidated in Russia and under the tight control of Russia and/or the Commonwealth of Independent States.

If these goals can be accomplished in their entirety, which will be extremely difficult, most of the serious and immediate risks associated with "loose nukes" in the former Soviet Union would be eliminated.

Defenses -- Prescriptions of the Right

Defenses were once largely prescriptions of the right. The kind of nuclear threats emerging in this post-Soviet era have put defenses in

a new light, and not just a defense against ballistic missiles. Many commentators have rightly pointed out that missiles are far from the only way to deliver a nuclear weapon.

Missile defenses

The end of the Cold War has already had an important impact on U.S. policy in missile defenses -- further adjustment will be needed. The role of missile defenses has shifted from trying to complicate a large-scale Soviet attack to protecting the United States from much smaller, but potentially undeterrable attacks, whether accidental, unauthorized, or by a future Third World nation with ICBMs.

The Administration took the first step by scaling back the Strategic Defense Initiative from "Phase I" to a smaller version called "Global Protection Against Limited Strikes," or GPALS.

Last year Congress further defined the type of defense needed for the future in the Missile Defense Act, part of the FY92 Defense Authorization bill. The Missile Defense Act requires the Secretary of Defense to develop for deployment a single-site ABM system consistent with the 1972 ABM Treaty, while at the same time engaging the Soviets in discussions on the possibility of modifying the treaty to allow more extensive defenses.

It appears increasingly likely that the Soviets, or now the Russians, will be amenable to reasonable clarifications and modifications of the ABM Treaty. Then-President Gorbachev announced the Soviet willingness to consider cooperative efforts in missile defense and early warning in his October 5, 1991 response to President Bush. Russian President Yeltsin went much further on January 29, 1992, by saying that "We are ready jointly to work out and subsequently to create and jointly operate a global system of defense in place of SDI."

Our future missile defense efforts should be guided by four precepts.

First, any ABM deployment beyond the 100 interceptors allowed by the ABM Treaty should be negotiated with Russia (and to the extent necessary with other successor states to the Soviet Union). If we were to go beyond the ABM Treaty unilaterally and thereby set back our relationship with Russia, it could encourage a return to the old Cold War relationship. If this were to happen, the nuclear threat to the United States could well rise instead of fall.

Second, the size of our defense should be scaled appropriately for the limited size of the threat, whether accidental, unauthorized or from a future Third World country. These threats require significantly smaller defenses than those previously considered to defend against a large-scale Soviet attack.

This suggests that both the extent of Third World missile proliferation and the structure of remaining Russian strategic forces will influence the appropriate size of the defense. Today, the largest unauthorized attack for which the GPALS is sized is the launch of all twenty SS-N-20 missiles from a Typhoon class submarine, a total of 200 warheads. Down-loading SS-N-20 missiles from 10 to 5 warheads, for example, would reduce the size of the Typhoon threat by 50 percent, to 100 warheads. Further down-loading of both ICBMs and SLBMs would further reduce the size of the threat.

Third, our defense should not raise concerns about strategic stability. The problem here is that if forces are not inherently survivable, defenses can create what has been called the "leaky umbrella" problem of working better in a drizzle than a downpour -- i.e., better against a ragged second-strike than a well-structured first-strike. This could increase incentives to attack first, in the event that there is a political reversal in our relations with an ensuing crisis.

The strategic stability of an offense-defense mix depends both on the size of offensive forces, and their survivability: if both sides' forces are highly survivable even without being defended, then there is little or no incentive to attack first to swamp the defense.

Fourth, any defense architecture we choose should be cost-effective compared to other defense schemes. With declining budgets for the foreseeable future, we can't afford to waste defense dollars. We need to make this cost comparison not only between alternative ABM deployment schemes, but also between funds spent on ABM defenses and funds spent on defending against other delivery means for nuclear weapons, such as low flying aircraft or ships.

Other Defenses

Defenses against nuclear weapons will involve much more than ballistic missile defenses, however. Included are also air defenses, our intelligence capabilities, and technology for detecting nuclear weapons with our customs and coastal defense.

We gave up on air defenses of the United States a long time ago. The reason was that nation-wide air defense against the potentially large Soviet threat was expensive and difficult, and all the more so when the Soviets acquired large numbers of ballistic missiles. The Soviets could suppress our air defenses with their ballistic missiles, and even more important, it made no strategic sense to spend many billions to defend ourselves against bombers and leave ourselves completely vulnerable to the much larger threat posed by Soviet ballistic missiles.

The same is now true in reverse: it makes no sense to spend many billions of dollars on an ABM system for the United States if we are going to leave ourselves vulnerable to other delivery vehicles that

may be at least as accessible to Third World leaders. Congress's action to re-orient SDI to dealing with small potentially undeterrable threats makes good sense; we should now consider restructuring our air defense and other efforts in the same way.

Defending the United States against nuclear terrorism is extremely difficult. However, any attempt to smuggle a nuclear weapon into the U.S. would subject the would-be attacker to multiple chances to be discovered. We should devote more intelligence assets to this problem to give us the best possible chance to discover and foil such an attack in the future.

Detecting a smuggled nuclear weapon is analogous in some ways to fighting drug smuggling, with the fortunate difference that nuclear weapons are less widespread than are drugs. We need to begin thinking hard about methods of detection; nuclear weapons have emissions or "signatures" that drugs do not.

Deterrence-Era Policies -- Prescriptions of the Left

In the deterrence era, there were four prescriptions of the left that ran against the prevailing grain -- institution of a comprehensive test ban, an end to production of fissile material for bombs, removal of forward-based tactical weapons and renunciation of first use of nuclear weapons.

These proposals fared badly because there was a strong presumption that the U.S. needed to continue nuclear testing and the production of fissile materials and, most significantly, to hold out the possibility of first use of nuclear weapons.

There has been a fundamental shift in our security interests regarding nuclear weapons. In the deterrence era, we needed nuclear weapons to deter strategic attack on the United States and to deter an overwhelming conventional attack in Europe. In the post-deterrence era, the incentives are reversed. It would be in our interest to get rid of nuclear weapons.

In the deterrence era, the burden of proof was on anyone who wanted to shift away from policies supporting U.S. nuclear weapons. Today, the burden of proof is shifting toward those who want to maintain those policies in light of the changed world.

Therefore, opposition to the Comprehensive Test Ban, the further production of fissile materials for new weapons, the forward deployment of tactical nuclear weapons in Europe, and, above all, the threat of nuclear first use are up for reconsideration.

Comprehensive Test Ban

Nuclear testing was always considered essential to modernizing the nuclear arsenal. In the post-Soviet world, the time is now to reconsider our attitude. The question is now, if testing is no longer needed for modernization, what if any need is there for testing to maintain the safety of the remaining arsenal? Any benefits from continuing nuclear testing for safety improvements will have to be weighed against the possible value of ending testing altogether to support non-proliferation efforts.

Fissile material production

Neither side has any need for the continued production of weapons-grade uranium or plutonium. Indeed with the reduction of tactical and strategic weapons already agreed to, both sides have an enormous surplus of these materials. The Russians have said they would agree to a bilateral agreement to halt, but would otherwise continue with a very limited amount of production for the next several years. Although a bilateral agreement would have little effect on either side's activities (or lack thereof), it could be the first step in seeking an international halt to the production of weapons-grade fissile material, an extremely important goal for stemming nuclear proliferation.

Tactical nuclear weapons

Tactical nuclear weapons have always been aimed at making our threat of nuclear first use more credible. These weapons have become more of a danger than a deterrent with the end of the Soviet conventional threat and the rise of instability in the former Soviet Union.

President Bush announced on September 27, 1991 the unilateral withdrawal back to the United States of all nuclear artillery shells, nuclear warheads for short range missiles, and naval nuclear weapons. This historic step, combined with the less publicized withdrawal of the remaining air-delivered tactical nuclear weapons from South Korea was an essential prerequisite to the recent agreement between North and South Korea to establish a nuclear-free peninsula. In close consultation with our NATO allies, we now need to consider the possibility of withdrawing and later eliminating remaining air delivered tactical nuclear weapons in Europe.

Nuclear first use

The threat of nuclear first use has always served two purposes: to deter the Soviet Union and Warsaw Pact from conventional attack, and to reassure our NATO allies of our commitment to their defense. With the demise of the Soviet conventional threat, only the latter rationale now applies. In close consultation with our NATO allies, we

should now reconsider this policy, which may, if it remains intact, undercut our non-proliferation efforts by legitimizing nuclear weapons and nuclear use.

A political link in non-proliferation

Accomplishing U.S. non-proliferation goals will require international cooperation, particularly including Third World nations. When the United States has pressed the non-proliferation agenda with these nations in the past, the answer has often come back that the United States itself has failed to take action, chiefly embracing the CTB, that would further that agenda.

We may be forgiven for being skeptical about this linkage between non-proliferation of nuclear weapons in the Third World and U.S. participation in the CTB. U.S. refusal to sign up may simply have been a handy excuse for others to avoid the Non-Proliferation Treaty. But now that a political link between the two has been forged we should use it to make real, concrete progress in non-proliferation.

Considering The Most Difficult Choice -- Pre-emption

There is one final issue to deal with as we consider this new era. It is one on which we can anticipate widespread and strong disagreement. That issue is pre-emption. We must confront and work through together the prospect that force may be the only way in some instances to stop proliferation of nuclear weapons.

If future leaders like Saddam Hussein are intent on developing nuclear weapons, and have a relatively advanced economy to support that effort, the choice that is presented to us may be stark: use force to put a halt to the nuclear program, or welcome a new member to the nuclear club.

Everyone but the would-be new nuclear states agrees that proliferation should be stopped. Everyone does not agree that goal is worth the use of force.

The United States will have sufficient non-nuclear military forces in the future to employ force unilaterally against Third World proliferators. Employing force effectively, however, will be much more likely if the action is taken with international approval. This is a central lesson of the Gulf War.

There is at this moment no international consensus on the use of non-nuclear force for this purpose. No nation aside from the United States can effectively lead an effort to create such a consensus against proliferation. To do so will require a much more concerted effort to stop proliferation short of force, including the prior use of economic and political sanctions.

IV. CONCLUSION

Perhaps the most difficult task we will have in the post-Cold War world is abandoning the conventional wisdom of forty years standing.

When we deal with potentially undeterrable threats, we will have to abandon Cold War notions of left and right for pragmatic solutions to real security problems. Clearly defenses and the possibility of pre-emption are solutions from the right. A Comprehensive Test Ban and ruling out first use of nuclear weapons are measures from the left. All four may well be parts of our overall solution to our new security problems.

On behalf of the House Armed Service Committee, I solicit suggestions for dealing with this new world. It will take everyone's best efforts.

# # # #

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Montana (MT)	27	70
Nebraska (NE)	28	72
Nevada (NV)	29	74
New Hampshire (NH)	30	76
New Jersey (NJ)	31	78
New Mexico (NM)	32	80
New York (NY)	33	82
North Carolina (NC)	34	84
North Dakota (ND)	35	86
Ohio (OH)	36	88

INTRODUCTION

The expenditures shown in this publication are not all inclusive. Additional information on total operational costs in selected foreign countries are available in the DoD Comptroller Budget Exhibit OP-53.

INTRODUCTION

BACKGROUND

From 1955 to 1982, the Department of Defense (DoD) published the Map Book of Major Military Installations. This book gave DoD managers a convenient reference to locate major military installations in the United States. In the late 1970's, officials in the Office of the Secretary of Defense suggested that the geography information in the "Map Book" be combined with financial and personnel data so that a wide range of information about DoD would be available in a single publication. A prototype of this new book, in 1981, resulted in the first Atlas/State Data Abstract, in 1982, and included geographic, financial, and personnel information for the fifty states. The 1984 edition was expanded to include selected U.S. Territories and Possessions, and the 1986 edition added selected foreign countries.

ATLAS

The Atlas/Data Abstract for the United States and Selected Areas includes military and civilian manpower, payroll outlays, and prime contracts over $25,000, by state, District of Columbia (DC), Guam, Puerto Rico, and selected foreign countries. The information is presented with statistical tables on the right hand pages and corresponding maps on the facing pages.

In the first set of tables, personnel and expenditure totals are displayed for DoD, Army, Navy and Marine Corps, Air Force, and Other Defense Activities. The personnel part of this set contains a breakdown of active duty military, civilian, and Reserve and National Guard for the fifty states, DC, Guam, and Puerto Rico. The foreign countries show military and civilian dependent information instead of Reserve and National Guard personnel figures. The expenditures part of this set is broken down by payroll outlays and prime contracts over $25,000, and subsets of these categories.

In the next set of tables, the top ten major locations of expenditures and personnel are shown in descending order. These locations are depicted on the maps on the corresponding facing pages. These tables are not included in the selected foreign countries since location information is not collected.

In the remaining two tables, contract awards over $25,000 for the last three fiscal years and the top five contractors with their major areas of work are depicted for each state or country.

COVERAGE

The information in this Atlas pertains to the Department of Defense (DoD), which includes the Departments of the Army, Navy, Air Force, and the category "Other Defense Organizations." This category includes the Office of the Secretary of Defense, Joint Chiefs of Staff, Inspector General (DoD), U.S. Court of Military Appeals, Uniformed Services University of the Health Sciences, Defense Agencies, and the Defense Field Activities. All information shown is as of September 30, 1994.

PERSONNEL

Personnel data include total active duty military, direct hire civilian, Reserve and National Guard (fifty states, DC, Guam, and Puerto Rico), and military and civilian dependents (foreign countries).

Active Duty Military

The active duty military personnel counts include those based ashore and exclude those temporarily shore-based, in a transient status, or afloat. As of September 30, 1994, 238,302 military personnel were excluded based on these categories. Reserve/National Guard personnel called to active duty under 10 USC 637(b) are not included in the active duty military personnel counts.

There are a few cases where personnel are reported by the parent installation and shown there instead of their actual operating location. There are also cases where personnel on temporary duty as of September 30, 1994, are reported at the installation where they are temporarily assigned. In using this publication, please be aware that cases such as the foregoing can occur.

Civilian

Included in the Atlas are those U.S. citizen and foreign national direct hire civilians subject to Office of Management and Budget (OMB) ceiling controls. Excluded are indirect hire civilians and those direct hire civilians not subject to OMB ceiling controls. As of September 30, 1994, there were 46,695 indirect hire and 7,524 direct hire civilians not subject to OMB ceiling controls.

Personnel assigned to military functions predominate the civilian manpower statistics in the Atlas, but we have also included civilian personnel involved in civil functions of the United States. As of September 30, 1994, there were 27,838 employees of the Army Corps of Engineers, 120 Army cemeterial employees, and 1 Air Force employee, all assigned to civil functions.

Reserve and National Guard

The Reserve and National Guard personnel figures include only the Ready Reserve, which consists of the Selected Reserve, the Individual Ready Reserve, and the Inactive National Guard. Personnel in the Selected Reserve are distributed to the capital city of the state in which their duty is performed. Personnel in the Individual Ready Reserve and Inactive National Guard are distributed according to capital city of their state of residence.

Military and U.S. Civilian Dependents

Included in the foreign countries of the Atlas are counts of military and U.S. civilian dependents. Military figures include both command and non-command sponsored dependents. Dependents are defined as spouse, children, parents, other persons related by blood, marriage, or adoption, and any person recognized as a dependent by the appropriate DoD Component.

EXPENDITURES

The expenditures in this Atlas are not all inclusive. Additional information on total operational costs for foreign countries are available in the DoD Comptroller Budget Exhibit OP-53.

Payroll Outlays

For civilian, active duty military, and reserves, payroll outlays represent the gross earnings of these personnel for services rendered to the Government and cash allowances for benefits. Excluded from these outlays are the employer's share of employee benefits, accrued military retirement benefits, and most of the permanent change of station costs. Payroll outlays for retired military, including reserves, represent the direct compensation to those personnel.

For purposes of this publication, payroll outlays have been allocated, to the best of our ability, to the actual location of the person being compensated. In most cases, the outlays are actual payroll calculations at the location of the personnel being compensated. In some cases, the outlays have been prorated from a central paying office to remote locations. In other cases where it is not possible to prorate, the outlays are reported at the location of the finance office issuing the checks. This could mean, for example, that military and civilian pay for the same installation may be reported at different locations if they are paid by different finance offices. Also, payroll outlays for military personnel who are temporarily shore-based or afloat are reported at their home port. Therefore, in using this publication, please be aware that anomalies of these types can occur.

Prime Contracts

Prime contract awards include obligations for those contract actions over $25,000 only. Contractual obligations for less than $25,000, such as small purchases, are reported in summary form and are not attributable to locations or major areas of work.

In reporting contract awards, there can be deobligations (credit actions) as well as obligations (debit actions). An example of this would be where a contract had to be terminated. Although rare, this can result in a net credit for a particular location in a given fiscal year, but will be a positive result over time. Net credits are shown as negative amounts. Similarly, the amount of prime contract dollars for a major area of work can exceed the total amount for a given prime contractor. This occurs when there is a large deobligation on another contract for the same contractor.

Prime contracts are generally reported at the location where the work is performed. For example, if a contractor is located in Nevada and wins a construction job in Utah, the contract will be reported in Utah. However, there are exceptions, such as when contract work is performed at various plants or locations, the contract is reported to the location where the largest dollar amount of work will be performed. Another exception is in contracts for transportation and communications services where the place of performance is the location of the contractor's home office. Furthermore, for purchases from wholesale or other distribution firms, the place of performance is the distributor's business address and not the place where the products or goods were manufactured.

MAPS

The maps are displayed on the facing pages of the statistical tables and show where major payroll and contract expenditures are incurred and major concentrations of military and civilian personnel are located, or both. Locations are included if they show major expenditures for the current year, or any one year in the past three years. Also included are all major military installations, regardless of expenditures or numbers of personnel, with the exception of public works centers and installations dedicated to reserve activities, unless expenditures or numbers of personnel caused these activities to be listed as major installations. To reduce congestion on the California maps, installations with less than 1,000 military and civilian personnel have been excluded. The maps of foreign countries show selected places for geographical reference only. Expenditure information is reported at the country level and apportionment by place is not possible.

Beginning with the 1993 edition of the Atlas, major military installations within the United States, closed as a result of the base closure review and recommendation process, are shown with their actual closure dates in the following sample format: (6/93-C). Foreign bases are removed from applicable maps when all of their facilities are returned to the host nation.

MAPS AND STATISTICAL SUMMARIES

DoD ESTIMATED PAYROLL AND PRIME CONTRACTS BY STATE/AREA
(THOUSANDS OF DOLLARS)
FISCAL YEAR 1994

State	Civilian Pay	Military Active Duty Pay	Reserve & National Guard Pay	Retired Military Pay	Total Compens-sation	Civil Functions Contracts	Military Functions Contracts	Total Contracts
Alabama	860,727	577,355	206,490	674,986	2,319,558	52,686	1,620,403	1,673,089
Alaska	191,982	606,289	31,152	93,293	922,716	13,730	613,542	627,272
Arizona	331,661	531,308	71,667	707,759	1,642,395	7,623	1,967,240	1,974,863
Arkansas	144,080	159,246	65,741	331,709	700,776	60,145	313,361	373,506
California	4,078,390	5,623,613	352,659	3,412,605	13,467,267	168,175	22,404,931	22,573,106
Colorado	493,482	966,702	122,521	715,180	2,297,885	33,424	2,586,483	2,619,907
Connecticut	183,061	237,690	49,900	150,572	621,223	10,015	2,440,054	2,450,069
Delaware	54,427	109,543	35,142	85,657	284,769	9,635	97,970	107,605
District of Columbia	681,975	480,677	38,207	50,428	1,251,287	33,654	1,062,250	1,095,904
Florida	1,025,116	2,192,854	156,585	2,789,503	6,164,058	61,806	5,848,692	5,910,498
Georgia	1,087,712	1,989,987	207,827	987,168	4,272,694	55,303	4,065,412	4,120,715
Hawaii	670,801	1,475,729	51,911	218,405	2,416,846	1,686	801,611	803,297
Idaho	37,898	109,461	33,509	133,958	314,826	2,574	63,585	66,159
Illinois	588,694	678,406	141,950	401,018	1,810,068	140,530	1,115,860	1,256,390
Indiana	566,239	129,479	227,561	246,902	1,170,181	12,428	1,306,476	1,318,904
Iowa	44,809	16,032	67,193	107,822	235,856	26,682	282,534	309,216
Kansas	208,976	701,805	101,197	253,804	1,265,782	22,340	557,763	580,103
Kentucky	426,505	1,116,100	76,415	283,306	1,902,326	25,279	743,822	769,101
Louisiana	260,685	591,520	127,790	375,383	1,355,378	289,691	1,858,425	2,148,116
Maine	252,986	145,938	41,033	144,486	584,443	146	924,398	924,544
Maryland	1,532,608	941,705	129,195	704,417	3,307,925	62,873	4,193,268	4,256,141
Massachusetts	435,408	242,331	131,596	272,116	1,081,451	35,065	5,070,796	5,105,861
Michigan	353,082	110,585	130,084	284,201	877,952	33,419	1,568,301	1,601,720
Minnesota	96,187	32,622	104,869	169,064	402,742	65,382	1,071,144	1,136,526
Mississippi	385,165	444,683	113,715	302,691	1,246,254	98,430	1,756,691	1,855,121
Missouri	551,371	460,365	137,164	417,404	1,566,304	96,981	6,049,629	6,146,610
Montana	35,525	105,681	29,881	86,807	257,894	4,405	59,013	63,418
Nebraska	124,217	273,193	40,034	174,897	612,341	13,043	296,896	309,939
Nevada	69,486	220,458	20,808	331,965	642,717	4,117	269,954	274,071
New Hampshire	52,458	22,610	21,923	138,855	235,846	709	368,274	368,983
New Jersey	798,195	314,199	104,159	307,335	1,523,888	117,795	2,916,589	3,034,384
New Mexico	293,809	414,946	33,504	313,446	1,055,705	23,664	634,601	658,265
New York	551,412	752,727	187,769	401,747	1,893,655	40,479	3,588,867	3,629,346
North Carolina	570,728	2,585,791	114,066	915,397	4,185,982	49,715	1,112,896	1,162,611
North Dakota	53,545	214,314	34,148	38,392	340,399	18,153	101,827	119,980
Ohio	1,226,391	352,646	144,283	492,037	2,215,357	16,907	2,948,603	2,965,510
Oklahoma	628,721	860,602	93,967	431,806	2,015,096	11,092	748,084	759,176
Oregon	110,819	31,948	70,035	283,688	496,490	32,204	98,554	130,758
Pennsylvania	1,551,437	260,765	261,364	572,464	2,646,030	62,047	2,698,082	2,760,129
Rhode Island	169,581	150,978	27,789	87,660	436,008	3,450	418,218	421,668
South Carolina	530,057	1,186,602	128,781	683,349	2,528,789	30,150	967,960	998,110
South Dakota	38,508	126,750	24,974	60,406	250,638	18,240	56,541	74,781
Tennessee	211,081	202,959	125,006	529,336	1,068,382	68,316	1,104,468	1,172,784
Texas	1,751,277	2,585,447	243,639	2,620,711	7,201,074	126,940	8,018,490	8,145,430
Utah	532,307	151,998	69,514	152,426	906,245	2,914	518,256	521,170
Vermont	20,139	5,651	28,406	39,667	93,863	541	56,893	57,434
Virginia	4,510,502	4,771,560	99,857	2,100,774	11,482,693	64,197	7,952,885	8,017,082
Washington	1,016,468	1,293,938	127,688	978,096	3,416,190	79,257	1,781,477	1,860,734
West Virginia	48,459	16,538	47,483	111,582	224,062	87,167	88,615	175,782
Wisconsin	115,308	30,260	106,223	168,183	419,974	35,029	738,635	773,664
Wyoming	32,995	89,337	15,480	51,511	189,323	4,507	51,893	56,400
Total U. S.	30,587,452	37,693,923	5,153,854	26,386,374	99,821,603	2,334,740	107,981,212	110,315,952

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DoD ESTIMATED PAYROLL AND PRIME CONTRACTS BY STATE/AREA
(THOUSANDS OF DOLLARS)
FISCAL YEAR 1994

Place	Civilian Pay	Military Active Duty Pay	Reserve & National Guard Pay	Retired Military Pay	Total Compens-sation	Civil Functions Contracts	Military Functions Contracts	Total Contracts
Guam	149,324	253,595	2,291	23,308	428,518	0	295,241	295,241
Puerto Rico	80,398	79,996	72,015	67,795	300,204	15,673	204,612	220,285
Other U.S. Possessions	23,298	62,223	90	4,687	90,298	11,365	334,837	346,202
Total U.S. Possessions	253,020	395,814	74,396	95,790	819,020	27,038	834,690	861,728
Australia	508	11,937	0	6,474	18,919	0	6,774	6,774
Belgium	22,017	71,843	0	4,187	98,047	0	30,344	30,344
Bermuda	12,350	13,374	0	533	26,257	0	5,859	5,859
Canada	9,749	15,877	0	9,148	34,774	1,086	179,407	180,493
Egypt	5,745	45,153	0	662	51,560	0	116,402	116,402
Germany	686,399	2,727,646	13,324	136,046	3,563,415	0	791,755	791,755
Greece	3,929	16,338	0	3,702	23,969	0	80,636	80,636
Iceland	41,088	66,117	0	169	107,374	0	89,410	89,410
Italy	164,982	410,280	0	10,244	585,506	0	411,006	411,006
Japan	216,715	1,605,790	0	25,365	1,847,870	36	795,504	795,540
Korea	282,609	937,357	0	19,149	1,239,115	0	425,455	425,455
Netherlands	13,744	28,134	0	3,326	45,204	38	57,526	57,564
Panama	147,840	258,711	1,849	8,199	416,599	964	60,704	61,668
Philippines	575	7,794	0	45,782	54,151	0	1,955	1,955
Portugal	28,982	31,270	0	786	61,038	0	18,233	18,233
[illegible]di Arabia	9,990	26,228	0	16,441	52,659	0	591,008	591,008
[illegible]ain	17,302	94,718	0	9,238	121,258	0	243,830	243,830
Turkey	18,107	116,083	0	2,948	137,138	0	110,649	110,649
United Kingdom	81,745	420,997	763	40,069	543,574	34	419,028	419,062
Other Foreign Nations	32,975	206,133	5,302	33,285	277,695	6,120	2,492,630	2,498,750
Total Foreign Nations	1,797,351	7,111,780	21,238	375,753	9,306,122	8,278	6,928,115	6,936,393

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UNITED STATES - TOTAL

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	3,622,519	1,704,444	968,029	818,248	131,798
Active Duty Military	1,130,744	416,018	359,460	355,266	0
Civilian	810,240	254,483	244,066	179,893	131,798
Reserve & National Guard	1,681,535	1,033,943	364,503	283,089	0
II. Expenditures - Total	$210,137,555	$61,128,639	$69,045,767	$63,689,282	$16,273,867
A. Payroll Outlays - Total	99,821,603	34,284,521	33,933,951	26,627,254	4,975,877
Active Duty Military Pay	37,693,923	13,054,058	15,044,098	9,595,767	0
Civilian Pay	30,587,452	9,127,123	10,484,442	6,000,010	4,975,877
Reserve & National Guard Pay	5,153,854	3,553,510	487,978	1,112,366	0
Retired Military Pay	26,386,374	8,549,830	7,917,433	9,919,111	0
B. Prime Contracts Over $25,000 Total	110,315,952	26,844,118	35,111,816	37,062,028	11,297,990
Supply and Equipment Contracts	48,641,591	8,576,820	15,150,905	17,658,907	7,254,959
RDT&E Contracts	21,513,458	4,658,613	5,798,594	9,640,423	1,415,828
Service Contracts	33,040,005	8,091,368	12,810,439	9,513,766	2,624,432
Construction Contracts	4,786,158	3,182,577	1,351,878	248,932	2,771
Civil Function Contracts	2,334,740	2,334,740	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
St. Louis, MO	$6,086,503	$390,894	$5,695,609	Fort Bragg, NC	46,487	40,363	6,124
San Diego, CA	4,748,224	2,683,196	2,065,028	Arlington, VA	41,711	15,803	25,908
Long Beach, CA	3,550,195	330,892	3,219,303	San Diego, CA	38,871	25,897	12,974
Arlington, VA	3,284,492	2,272,245	1,012,247	Fort Hood, TX	33,695	29,552	4,143
Pico Rivera, CA	3,272,224	4,824	3,267,400	Norfolk, VA	31,777	16,749	15,028
Norfolk, VA	3,227,924	2,564,906	663,018	Camp Pendleton, CA	30,761	28,394	2,367
Sunnyvale, CA	3,088,332	93,664	2,994,668	Camp Lejeune, NC	30,738	27,859	2,879
Marietta, GA	2,827,612	89,010	2,738,602	Washington, DC	25,304	11,403	13,901
Fort Worth, TX	2,491,622	189,070	2,302,552	Fort Campbell, KY	24,268	21,076	3,192
Washington, DC	2,347,191	1,251,287	1,095,905	Wright Pat. AFB, OH	21,791	7,721	14,070

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$114,145,419	$27,790,320	$37,354,460	$36,834,288	$12,166,351
Fiscal Year 1992	112,284,649	28,386,656	38,369,184	33,946,290	11,582,519
Fiscal Year 1991	124,119,298	31,686,758	39,916,551	40,086,667	12,429,322

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in the United States	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. MCDONNELL DOUGLAS CORPORATION	$9,245,728	Aircraft Fixed Wing	$6,276,509
2. LOCKHEED CORPORATION	6,508,020	RDTE/Aircraft-Engineering Development	1,769,082
3. NORTHROP GRUMMAN CORPORATION	5,200,804	Aircraft Fixed Wing	3,271,279
4. MARTIN MARIETTA CORPORATION	3,130,280	RDTE/Missile and Space Systems-Op Systems	1,486,751
5. GENERAL MOTORS CORPORATION	3,035,209	Guided Missiles	493,956
Total of Above	$27,120,041	(24.6% of total awards over $25,000)	

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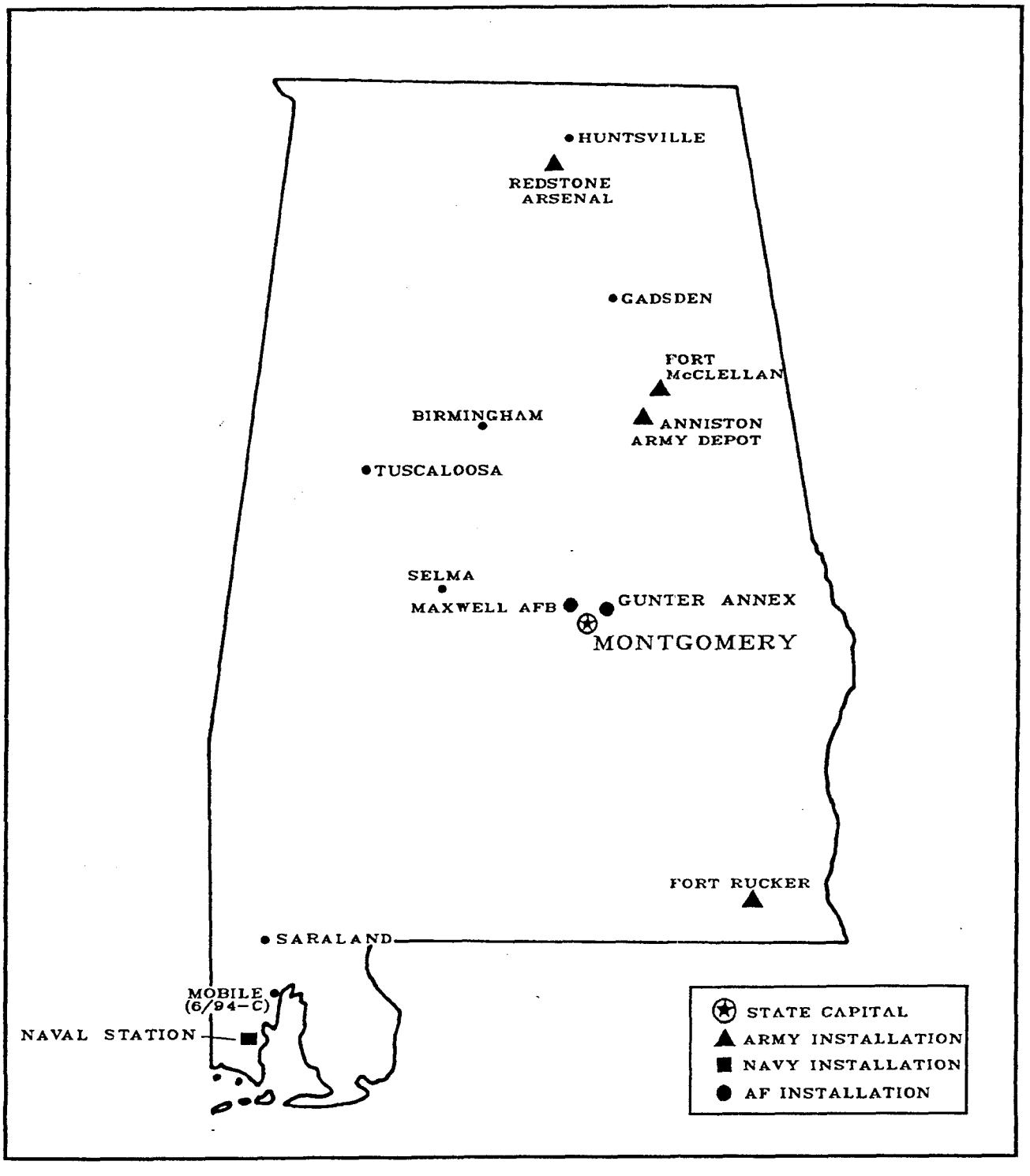
MAP NO. 1

ALABAMA



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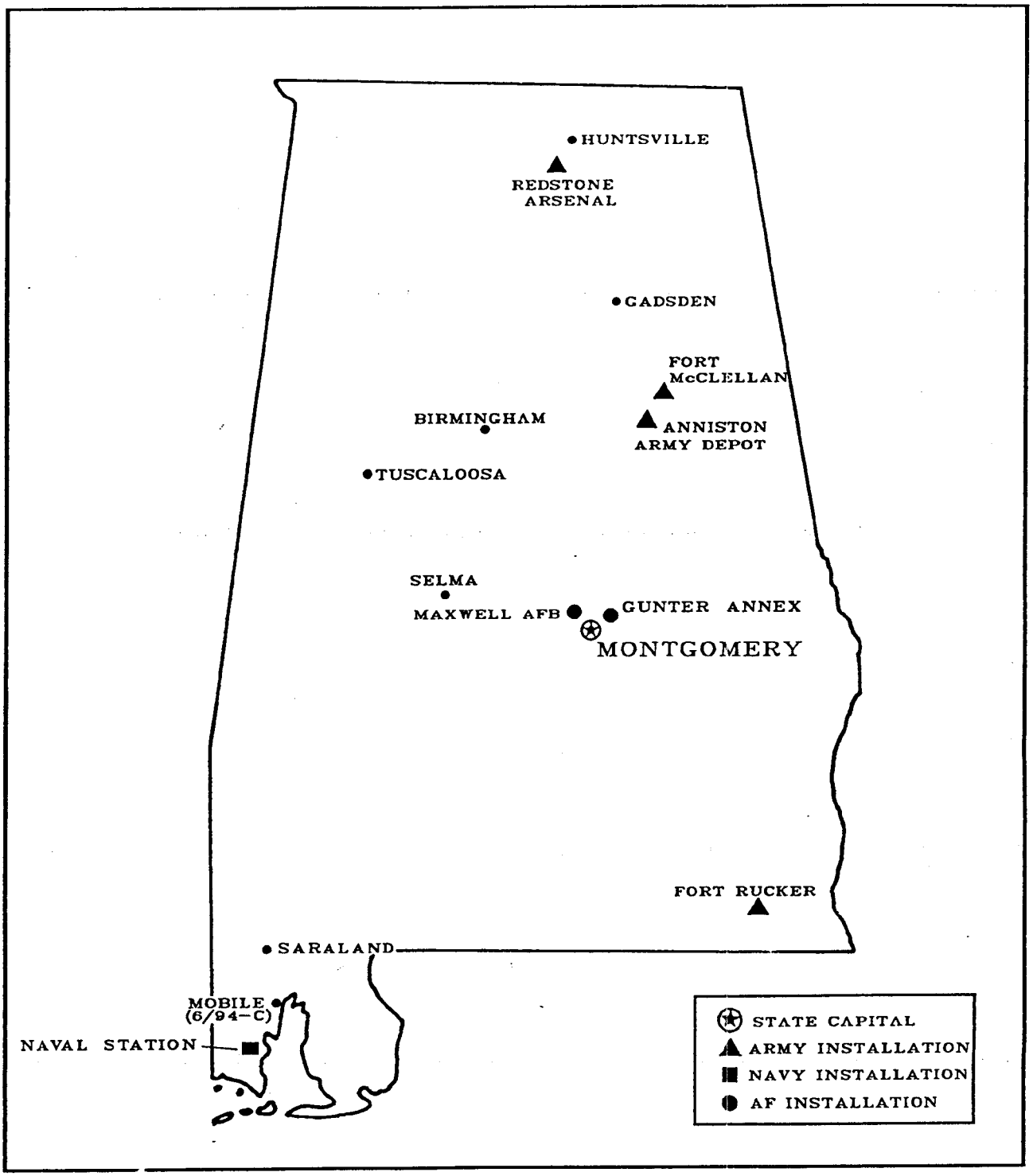
MAP NO. 1

ALABAMA



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Operations and Reports

ALABAMA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	87,654	65,377	7,065	12,986	2,226
Active Duty Military	16,651	10,602	971	5,078	0
Civilian	24,343	18,967	110	3,040	2,226
Reserve & National Guard	46,660	35,808	5,984	4,868	0
II. Expenditures - Total	$3,992,647	$2,637,981	$307,316	$764,270	$283,080
A. Payroll Outlays - Total	2,319,558	1,613,598	148,946	483,353	73,661
Active Duty Military Pay	577,355	373,235	35,413	168,707	0
Civilian Pay	860,727	725,168	4,852	57,046	73,661
Reserve & National Guard Pay	206,490	176,707	5,207	24,576	0
Retired Military Pay	674,986	338,488	103,474	233,024	0
B. Prime Contracts Over $25,000 Total	1,673,089	1,024,383	158,370	280,917	209,419
Supply and Equipment Contracts	458,987	144,536	68,653	84,610	161,188
RDT&E Contracts	467,154	396,613	10,256	28,364	31,921
Service Contracts	597,330	333,519	79,558	167,943	16,310
Construction Contracts	96,932	97,029	97-	0	0
Civil Function Contracts	52,686	52,686	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Huntsville	$970,246	$167,290	$802,956	Redstone Arsenal	9,063	1,567	7,496
Fort Rucker	478,121	285,992	192,129	Fort Rucker	6,149	3,520	2,629
Redstone Arsenal	443,281	358,012	85,269	Maxwell AFB	5,253	3,458	1,795
Montgomery	399,293	297,560	101,733	Fort McClellan	5,133	4,034	1,099
Anniston	204,936	196,139	8,797	Anniston	4,189	83	4,106
Birmingham	202,703	77,613	125,090	Huntsville	2,845	251	2,594
Fort McClellan	181,580	146,804	34,776	Gunter Annex	2,722	1,525	1,197
Mobile	121,513	69,915	51,598	Montgomery	1,229	555	674
Gunter Annex	87,020	70,531	16,489	Mobile	1,091	38	1,053
Saraland	63,124	1,400	61,724	Birmingham	1,039	426	613

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$1,744,313	$1,174,022	$166,617	$292,684	$110,990
Fiscal Year 1992	1,949,201	1,388,854	136,389	277,198	146,760
Fiscal Year 1991	1,833,621	1,185,326	97,343	335,296	215,656

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. NICHOLS RESEARCH CORPORATION	$101,082	RDTE/Other Defense-Exploratory Development	$43,180
2. PRECISION STANDARD INC	88,846	Maint & Repair of Eq/Aircraft Structural C	86,355
3. DYNCORP	85,075	Maint & Repair of Eq/Aircraft Structural C	85,075
4. BOEING COMPANY THE	79,323	Guided Missile Components	69,915
5. INTERGRAPH CORPORATION	71,487	Computer Aided Design/Computer Aided Mfg S	60,094
Total of Above	$425,813	(25.5% of total awards over $25,000)	

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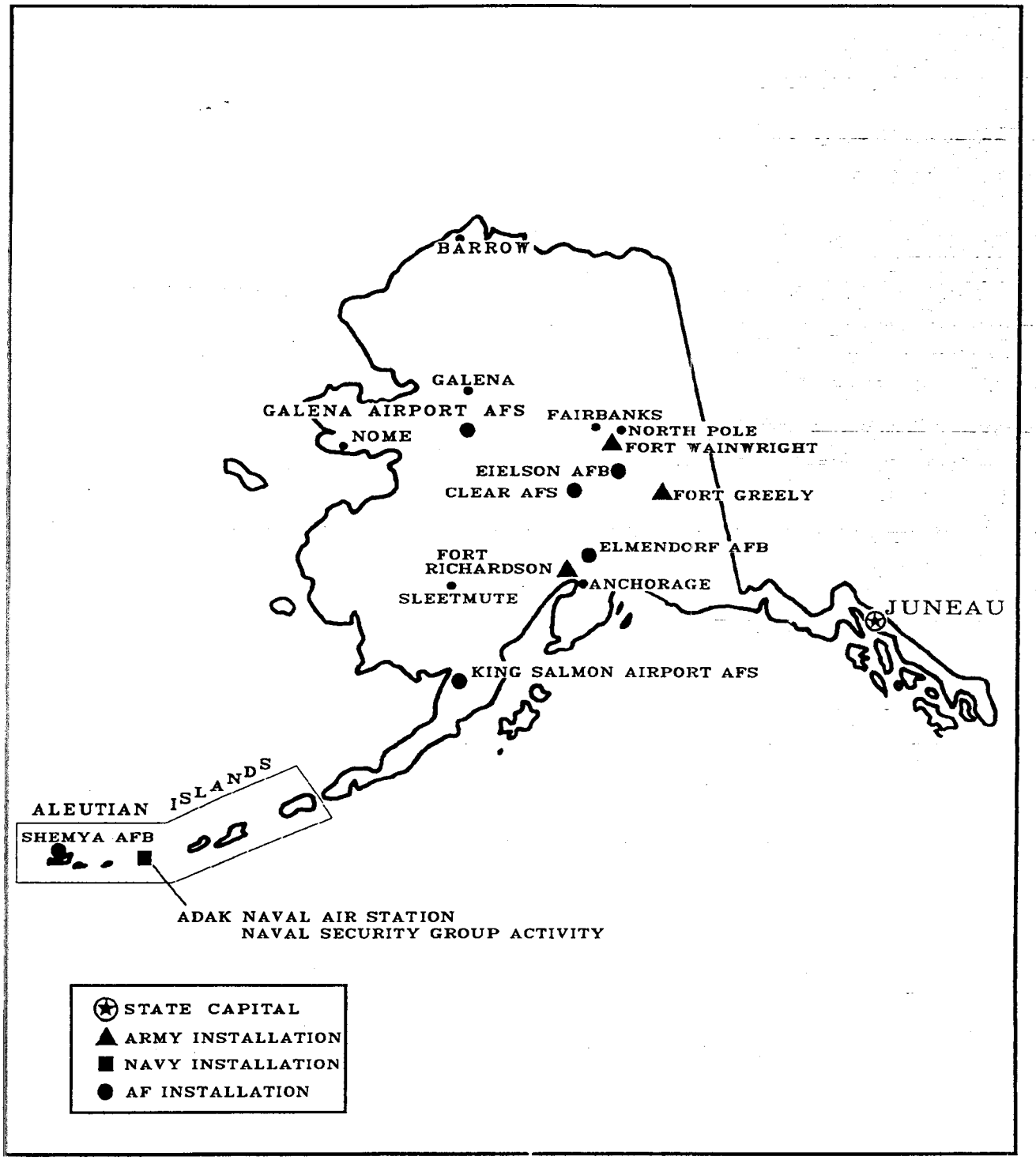
MAP NO. 2

ALASKA



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ALASKA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	31,671	14,998	1,782	14,511	380
Active Duty Military	19,046	7,632	1,118	10,296	0
Civilian	4,664	2,618	75	1,591	380
Reserve & National Guard	7,961	4,748	589	2,624	0
II. Expenditures - Total	$1,549,988	$693,209	$81,813	$610,589	$164,377
A. Payroll Outlays - Total	922,716	423,917	48,927	438,114	11,758
Active Duty Military Pay	606,289	267,942	34,102	304,245	0
Civilian Pay	191,982	102,448	5,856	71,920	11,758
Reserve & National Guard Pay	31,152	19,160	677	11,315	0
Retired Military Pay	93,293	34,367	8,292	50,634	0
B. Prime Contracts Over $25,000 Total	627,272	269,292	32,886	172,475	152,619
Supply and Equipment Contracts	81,109	1,511	0	4,515	75,083
RDT&E Contracts	867	867	0	0	0
Service Contracts	353,932	87,137	31,280	157,979	77,536
Construction Contracts	177,634	166,047	1,606	9,981	0
Civil Function Contracts	13,730	13,730	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Elmendorf AFB	$446,097	$255,286	$190,811	Elmendorf AFB	7,907	6,555	1,352
Fort Wainwright	206,619	172,708	33,911	Fort Wainwright	5,108	4,321	787
Fort Richardson	200,524	159,475	41,049	Fort Richardson	4,102	2,827	1,275
Anchorage	181,400	82,061	99,339	Eielson AFB	3,430	2,931	499
Eielson AFB	140,628	106,823	33,805	Adak Nav Air Station	1,033	974	59
Adak Nav Air Station	49,693	42,283	7,410	Anchorage	618	268	350
North Pole	29,895	5,005	24,890	Shemya AFB	505	496	9
Fairbanks	27,641	14,234	13,407	Sleetmute	407	407	0
Barrow	27,326	129	27,197	Fort Greely	251	0	251
Clear AFS	24,691	3,098	21,593	King Salmon	154	154	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$554,331	$230,056	$34,795	$145,902	$143,578
Fiscal Year 1992	385,307	51,249	29,348	176,965	127,745
Fiscal Year 1991	560,073	141,362	63,079	171,927	183,705

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. MORTENSON M A COMPANIES	$46,588	Other Miscellaneous Buildings	$46,588
2. PACIFICORP	45,543	Other ADP & Telecommunication Services	44,811
3. HARRIS CORPORATION	36,277	Miscellaneous Communication Equipment	36,277
4. GENERAL ELECTRIC COMPANY	29,050	Operation/Electronic & Communication Facil	24,606
5. INTERNATIONAL TECHNOLOGY CORP	26,916	Architect-Engineering Services	17,607
Total of Above	$184,374	(29.4% of total awards over $25,000)	

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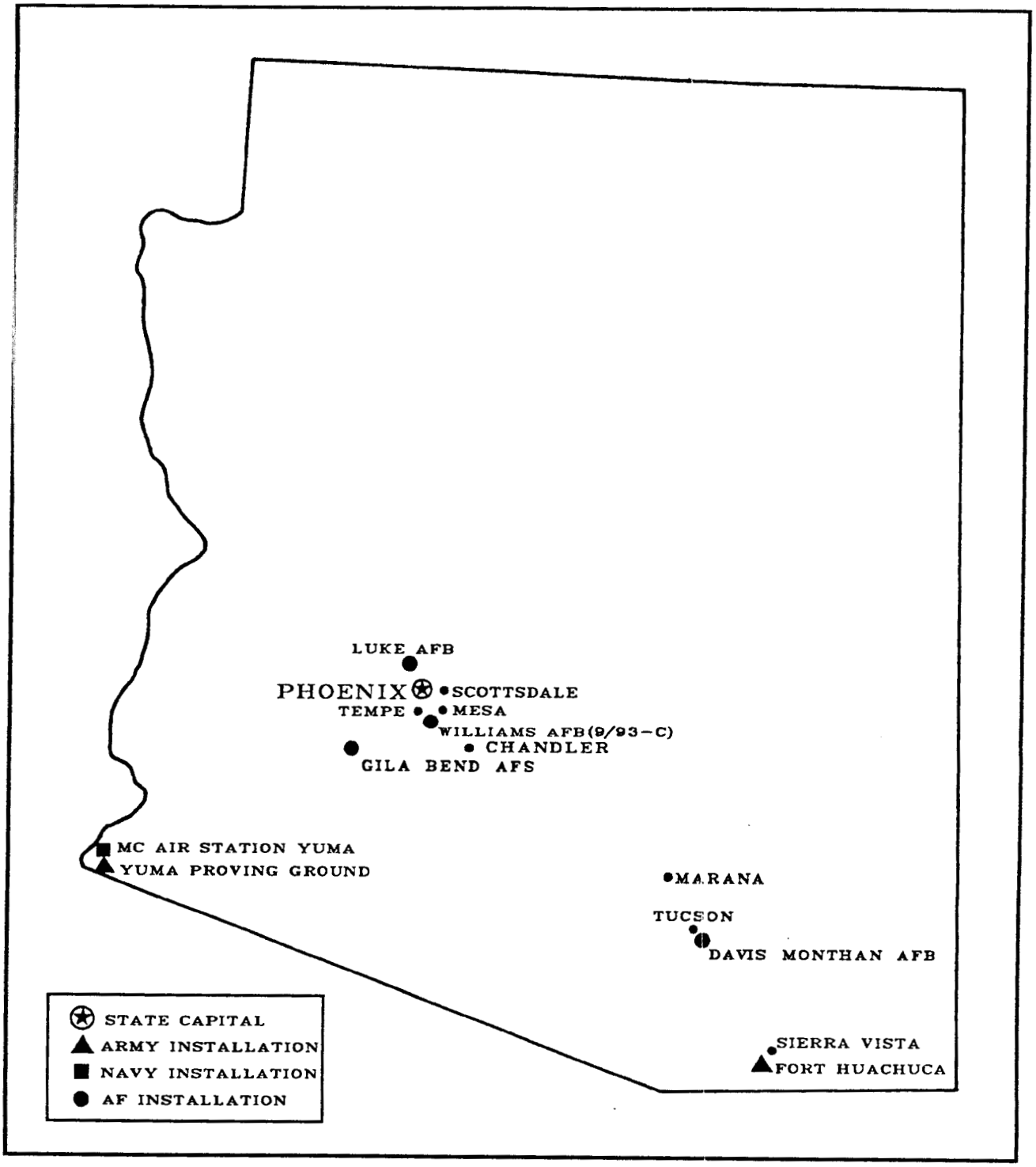
MAP NO. 3

ARIZONA



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ARIZONA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	56,452	22,700	10,156	22,383	1,213
Active Duty Military	21,911	5,340	4,516	12,055	0
Civilian	9,271	3,974	428	3,656	1,213
Reserve & National Guard	25,270	13,386	5,212	6,672	0
II. Expenditures - Total	$3,617,258	$1,347,658	$847,330	$1,325,676	$96,594
A. Payroll Outlays - Total	1,642,395	541,034	261,292	799,042	41,027
Active Duty Military Pay	531,308	142,634	100,565	288,109	0
Civilian Pay	331,661	149,932	16,010	124,692	41,027
Reserve & National Guard Pay	71,667	43,615	5,706	22,346	0
Retired Military Pay	707,759	204,853	139,011	363,895	0
B. Prime Contracts Over $25,000 Total	1,974,863	806,624	586,038	526,634	55,567
Supply and Equipment Contracts	1,279,696	385,572	513,004	342,142	38,978
RDT&E Contracts	254,198	143,687	43,132	53,860	13,519
Service Contracts	356,256	202,771	28,525	121,890	3,070
Construction Contracts	77,090	66,971	1,377	8,742	0
Civil Function Contracts	7,623	7,623	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Tucson	$1,113,085	$193,432	$919,653	Fort Huachuca	7,700	4,936	2,764
Sierra Vista	424,214	283,734	140,480	Davis-Monthan AFB	7,222	5,722	1,500
Mesa	350,802	62,834	287,968	Luke AFB	6,963	5,660	1,303
Phoenix	323,110	188,335	134,775	Yuma	5,507	4,246	1,261
Davis-Monthan AFB	238,819	196,377	42,442	Phoenix	1,295	413	882
Luke AFB	228,635	177,017	51,618	Tucson	1,193	314	879
Scottsdale	208,002	27,293	180,709	Gila Bend	181	88	93
Yuma	205,462	157,934	47,528	Marana	155	16	139
Tempe	99,652	20,901	78,751	Mesa	146	44	102
Chandler	59,064	17,613	41,451	Sierra Vista	125	20	105

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$2,593,378	$1,427,485	$248,030	$851,190	$66,673
Fiscal Year 1992	1,945,939	1,071,625	227,449	564,425	82,440
Fiscal Year 1991	2,510,578	1,337,898	138,864	982,291	51,525

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. GENERAL MOTORS CORPORATION	$883,605	Guided Missiles	$483,702
2. MCDONNELL DOUGLAS CORPORATION	274,581	Aircraft Rotary Wing	124,056
3. MOTOROLA INC	186,201	Engineering Technical Services	76,480
4. ALLIED SIGNAL INC	105,976	Gas Turbines and Jet Eng, Ex Acft & Comps	39,849
5. LITTON INDUSTRIES INC	36,373	Night Vision Equipment, Emitted and Reflec	35,990
Total of Above	$1,486,736	(75.3% of total awards over $25,000)	

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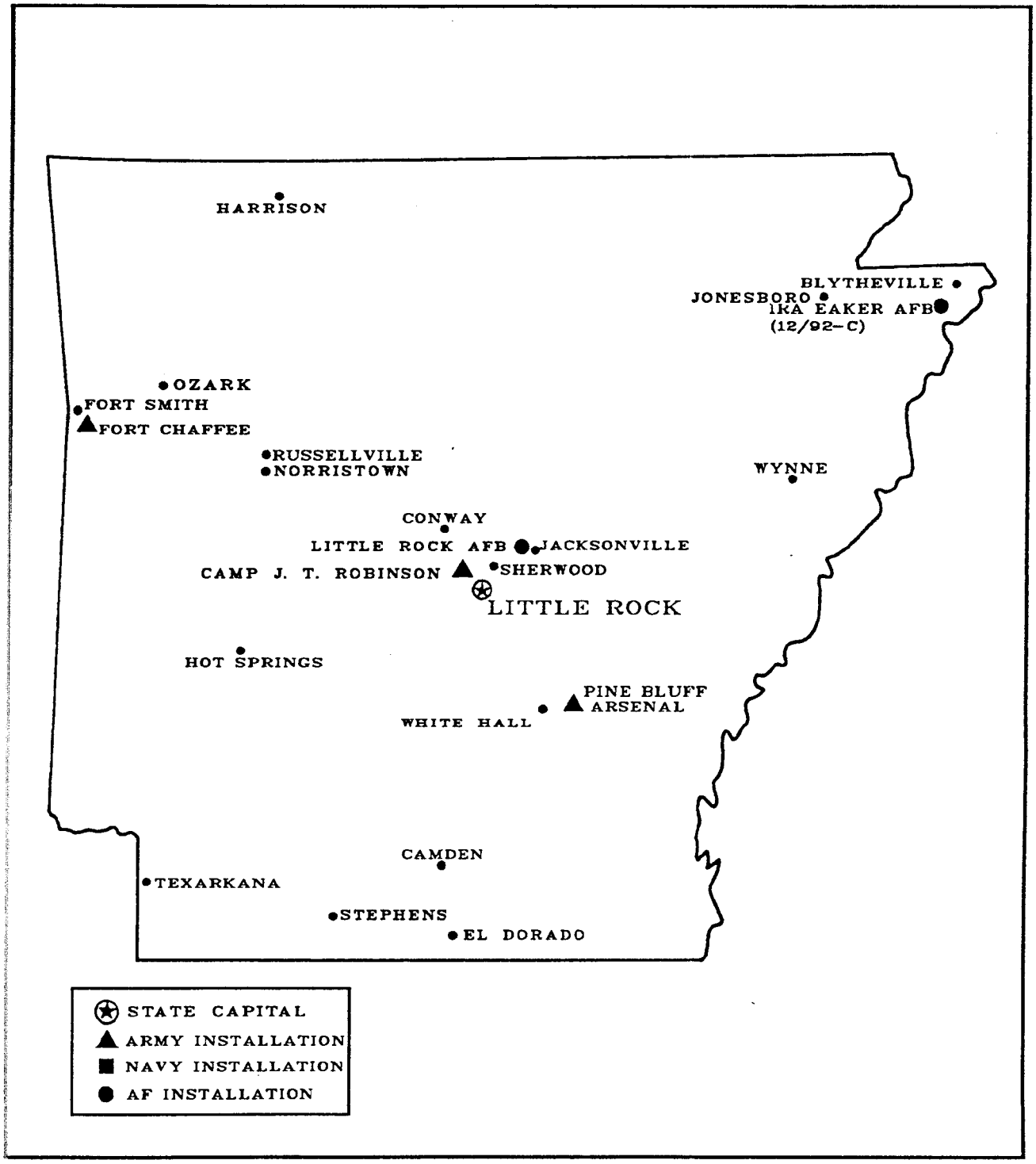
MAP NO. 4

ARKANSAS



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ARKANSAS

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	34,387	22,403	2,601	9,214	169
Active Duty Military	5,878	1,102	101	4,675	0
Civilian	4,194	3,101	11	913	169
Reserve & National Guard	24,315	18,200	2,489	3,626	0
II. Expenditures - Total	$1,074,282	$442,839	$159,556	$407,557	$64,330
A. Payroll Outlays - Total	700,776	310,513	79,191	306,598	4,474
Active Duty Military Pay	159,246	36,918	3,286	119,042	0
Civilian Pay	144,080	116,581	372	22,653	4,474
Reserve & National Guard Pay	65,741	53,435	971	11,335	0
Retired Military Pay	331,709	103,579	74,562	153,568	0
B. Prime Contracts Over $25,000 Total	373,506	132,326	80,365	100,959	59,856
Supply and Equipment Contracts	152,566	9,363	79,681	6,348	57,174
RDT&E Contracts	31,161	31,161	0	0	0
Service Contracts	110,671	15,769	652	91,568	2,682
Construction Contracts	18,963	15,888	32	3,043	0
Civil Function Contracts	60,145	60,145	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Jacksonville	$192,140	$158,375	$33,765	Little Rock AFB	5,259	4,519	740
Little Rock	125,996	54,551	71,445	Pine Bluff	1,367	141	1,226
Camden	110,840	2,196	108,644	Little Rock	1,002	524	478
Pine Bluff	69,623	67,646	1,977	Fort Chaffee	406	62	344
Fort Smith	28,613	21,000	7,613	Camp Jos T. Robinson	379	7	372
North Little Rock	26,048	25,909	139	Fort Smith	305	55	250
Sherwood	25,895	25,895	0	Russellville	94	19	75
Fort Chaffee	23,709	21,084	2,625	North Little Rock	92	11	81
Pine Bluff Arsenal	20,803	0	20,803	Harrison	67	58	9
Hot Springs	16,922	16,346	576	Jonesboro	52	36	16

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$329,160	$140,076	$77,936	$51,023	$60,125
Fiscal Year 1992	288,091	111,068	48,163	66,806	62,054
Fiscal Year 1991	306,363	144,986	12,365	77,393	71,619

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. GENERAL MOTORS CORPORATION	$63,426	Guided Missile Components	$62,449
2. INTERNATIONAL CHARTER EXPRESS	38,240	Air Charter for Things	36,749
3. LTV CORPORATION	31,161	RDTE/Missile and Space Systems-Advanced De	31,161
4. AIR TRANSPORT INTERNATIONAL	27,992	Air Charter for Things	27,667
5. SECUA CORPORATION	13,011	Guided Missile Components	12,474
Total of Above	$173,830	(46.5% of total awards over $25,000)	

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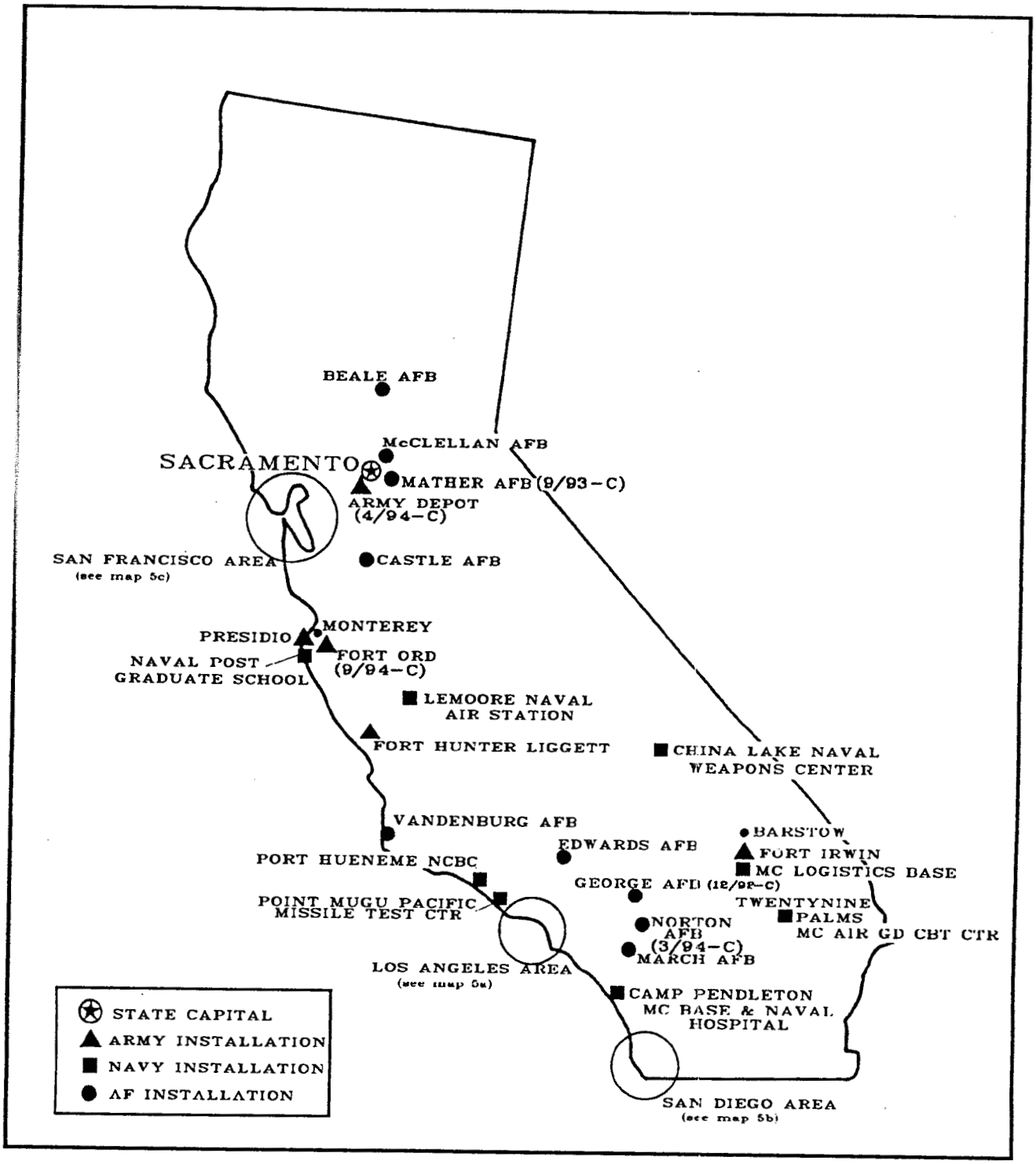
MAP NO. 5

CALIFORNIA



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CALIFORNIA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	374,554	84,068	201,952	74,881	13,653
Active Duty Military	143,220	13,696	97,700	31,824	0
Civilian	99,906	8,290	57,508	20,455	13,653
Reserve & National Guard	131,428	62,082	46,744	22,602	0
II. Expenditures - Total	$36,040,373	$4,701,109	$14,612,676	$14,088,392	$2,638,196
A. Payroll Outlays - Total	13,467,267	1,570,280	8,518,650	2,866,189	512,148
Active Duty Military Pay	5,623,613	455,757	4,297,227	870,629	0
Civilian Pay	4,078,390	301,311	2,512,997	751,934	512,148
Reserve & National Guard Pay	352,659	180,700	75,380	96,579	0
Retired Military Pay	3,412,605	632,512	1,633,046	1,147,047	0
B. Prime Contracts Over $25,000 Total	22,573,106	3,130,829	6,094,026	11,222,203	2,126,048
Supply and Equipment Contracts	11,822,927	959,587	2,788,174	7,060,256	1,014,910
RDT&E Contracts	4,278,899	1,017,963	684,280	1,887,332	689,324
Service Contracts	5,665,889	807,308	2,236,299	2,200,580	421,702
Construction Contracts	637,216	177,796	385,273	74,035	112
Civil Function Contracts	168,175	168,175	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
San Diego	$4,748,224	$2,683,196	$2,065,028	San Diego	38,871	25,897	12,974
Long Beach	3,550,195	330,892	3,219,303	Camp Pendleton	30,761	28,394	2,367
Pico Rivera	3,272,224	4,824	3,267,400	McClellan AFB	12,962	2,870	10,092
Sunnyvale	3,088,332	93,664	2,994,668	North Island NAS	10,527	5,142	5,385
Los Angeles	1,409,989	199,572	1,210,417	Travis AFB	9,683	7,677	2,006
Sacramento	928,313	137,557	790,756	Monterey	8,931	5,996	2,935
Camp Pendleton	923,961	803,482	120,479	Twentynine Palms	8,763	8,026	737
Travis AFB/Fairfield	517,962	356,453	161,509	Edwards AFB	8,137	4,690	3,447
North Island NAS	506,163	476,268	29,895	Oakland	7,486	1,974	5,512
Edwards AFB	493,650	249,240	244,410	El Toro	6,664	5,665	999

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$22,951,965	$2,917,702	$7,945,883	$9,419,942	$2,668,438
Fiscal Year 1992	23,843,135	3,538,823	8,069,838	10,106,398	2,128,076
Fiscal Year 1991	24,265,041	4,098,936	7,289,024	10,954,901	1,922,180

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. NORTHROP GRUMMAN CORPORATION	$3,464,882	Aircraft Fixed Wing	$3,199,600
2. MCDONNELL DOUGLAS CORPORATION	3,389,624	Aircraft Fixed Wing	2,928,741
3. LOCKHEED CORPORATION	2,602,749	Guided Missiles	1,087,459
4. GENERAL MOTORS CORPORATION	1,478,702	Expert Witness	200,761
5. TRW INC	729,883	Drones	123,376
Total of Above	$11,665,840	(51.7% of total awards over $25,000)	

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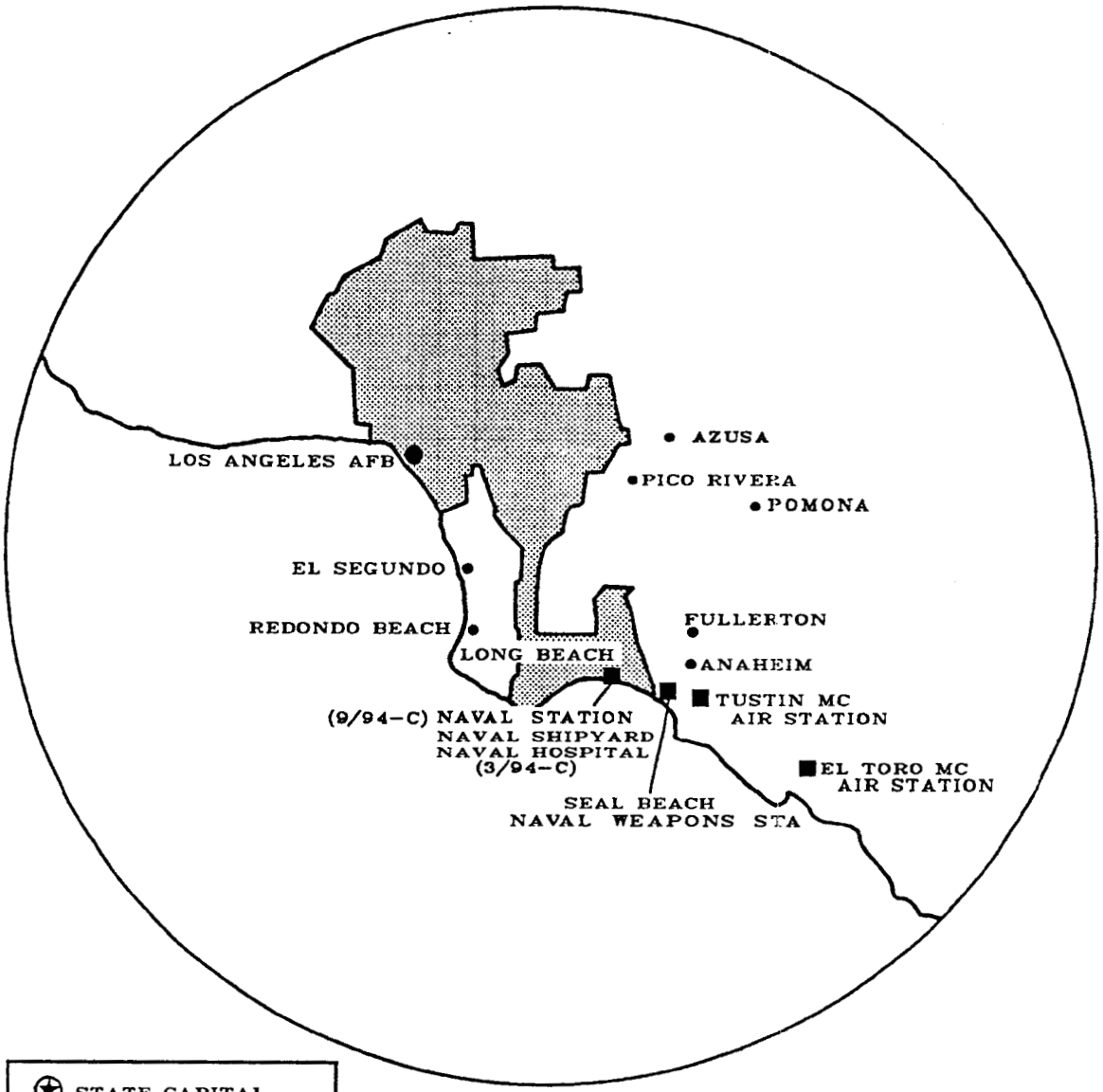
MAP NO. 5a

LOS ANGELES AREA



STATE CAPITAL
ARMY INSTALLATION
NAVY INSTALLATION
AF INSTALLATION

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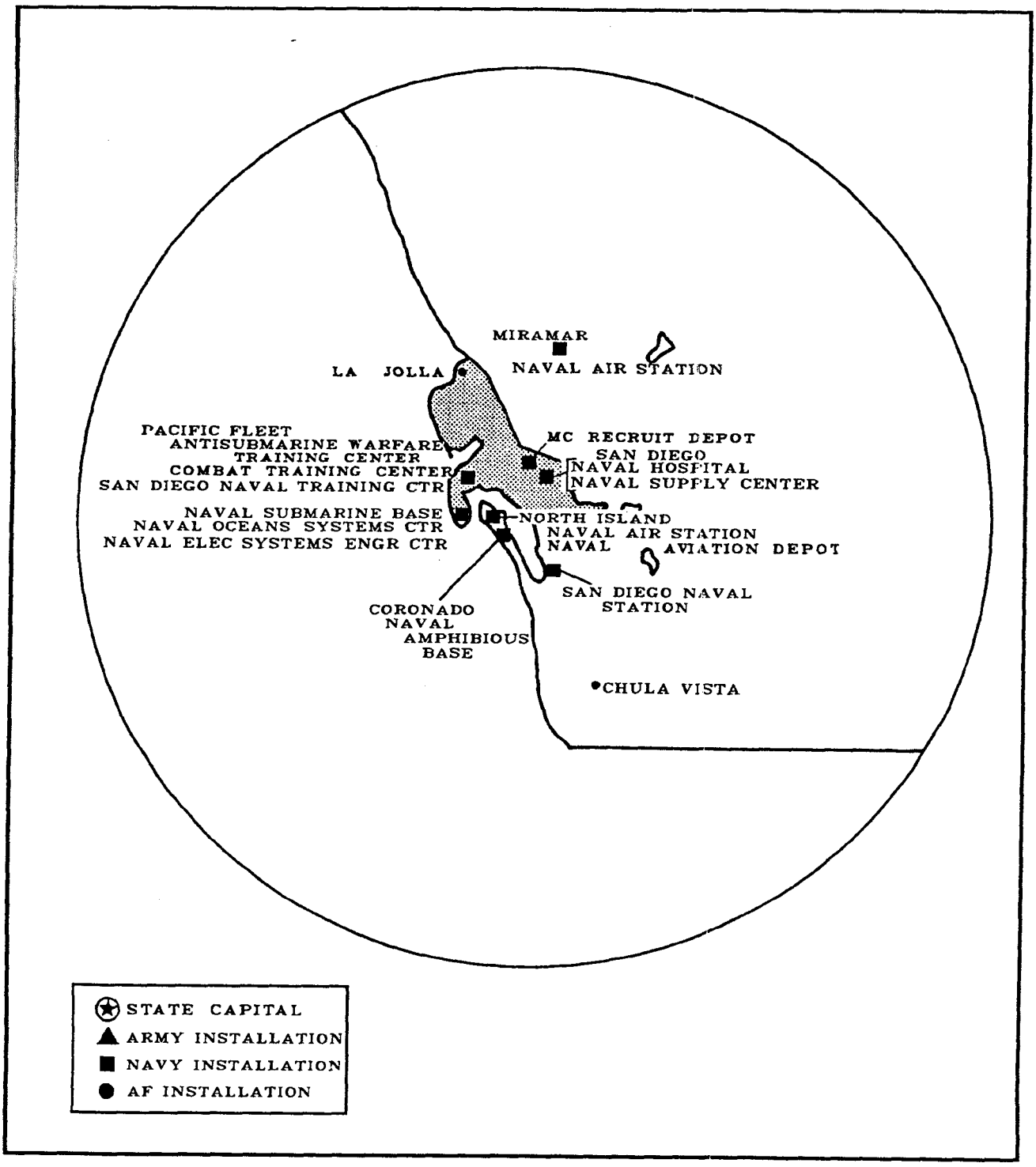
MAP NO. 5b

SAN DIEGO AREA



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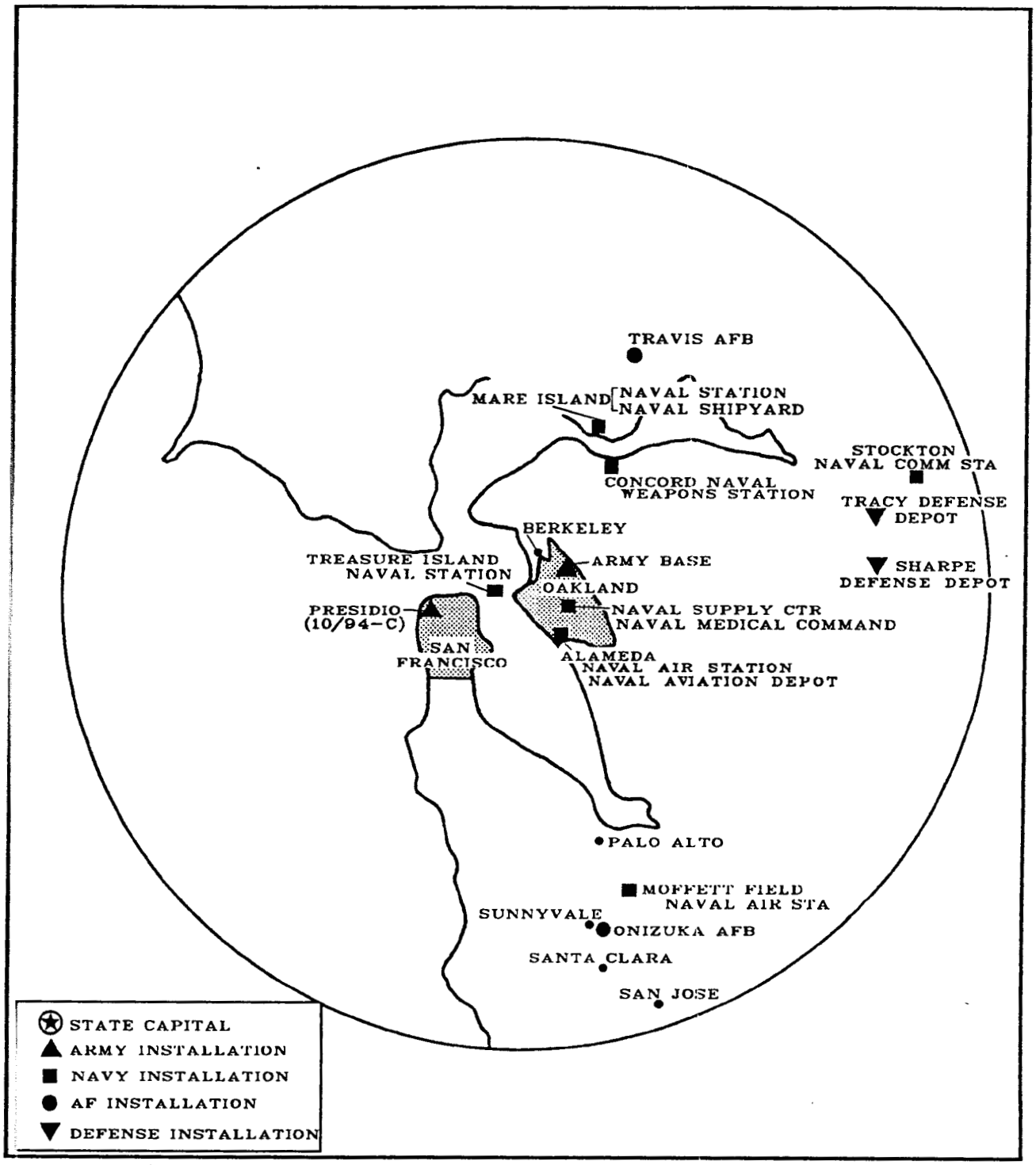
MAP NO. 5c

SAN FRANCISCO AREA



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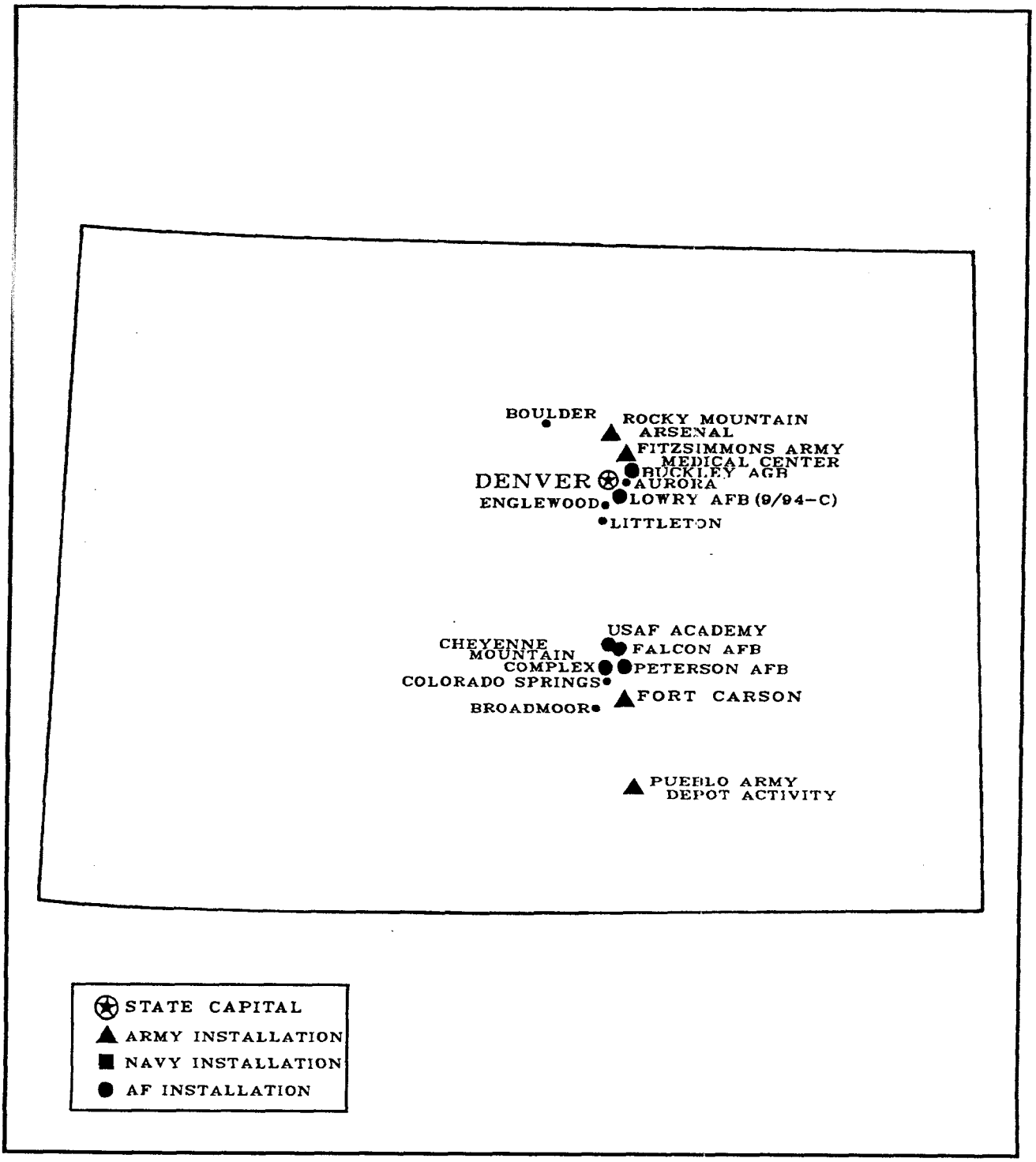
MAP NO. 6

COLORADO



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COLORADO

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	77,439	37,065	6,889	29,568	3,917
Active Duty Military	34,165	18,261	739	15,165	0
Civilian	13,325	4,289	69	5,050	3,917
Reserve & National Guard	29,949	14,515	6,081	9,353	0
II. Expenditures - Total	$4,917,792	$1,508,810	$186,591	$2,935,334	$287,057
A. Payroll Outlays - Total	2,297,885	1,027,141	119,469	998,055	153,220
Active Duty Military Pay	966,702	561,967	26,767	377,968	0
Civilian Pay	493,482	142,884	2,655	194,723	153,220
Reserve & National Guard Pay	122,521	73,982	4,796	43,743	0
Retired Military Pay	715,180	248,308	85,251	381,621	0
B. Prime Contracts Over $25,000 Total	2,619,907	481,669	67,122	1,937,279	133,837
Supply and Equipment Contracts	177,189	34,926	22,742	52,551	66,970
RDT&E Contracts	1,675,430	34,688	25,021	1,563,737	51,984
Service Contracts	556,729	202,750	19,359	319,737	14,883
Construction Contracts	177,135	175,881	0	1,254	0
Civil Function Contracts	33,424	33,424	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Denver	$1,674,281	$296,062	$1,378,219	Fort Carson	17,863	15,729	2,134
Colorado Springs	844,195	467,610	376,585	Air Force Academy	8,524	6,716	1,808
Fort Carson	649,990	534,341	115,649	Peterson AFB	5,051	3,568	1,483
Aurora	342,713	273,611	69,102	Aurora	3,629	1,881	1,748
Littleton	215,727	26,035	189,692	Denver	3,353	481	2,872
Air Force Academy	212,002	162,306	49,696	Falcon AFB	2,871	2,406	465
Falcon AFB	183,026	80,289	102,737	Colorado Springs	1,958	1,380	578
Buckley AGB	105,514	53,496	52,018	Buckley AGB	1,194	824	370
Boulder	90,009	11,634	78,375	Lowry AFB	1,191	445	746
Englewood	47,696	22,021	25,675	Pueblo	315	11	304

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$2,615,661	$273,969	$91,786	$2,043,013	$206,893
Fiscal Year 1992	2,471,313	308,623	80,220	1,746,386	336,084
Fiscal Year 1991	2,663,798	277,113	61,342	2,050,859	274,484

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. MARTIN MARIETTA CORPORATION	$1,540,573	RDTE/Missile and Space Systems-Op Systems	$1,361,504
2. LORAL CORPORATION	101,435	RDTE/Electronics & Communication Eq-Engr D	33,876
3. RAYTHEON COMPANY	59,186	Engineering Technical Services	39,540
4. KAMAN CORPORATION	47,892	Other ADP & Telecommunication Services	22,331
5. INTERNATIONAL BUS MCHS CORP	46,897	Space Vehicle Components	22,290
Total of Above	$1,795,983	(68.6% of total awards over $25,000)	

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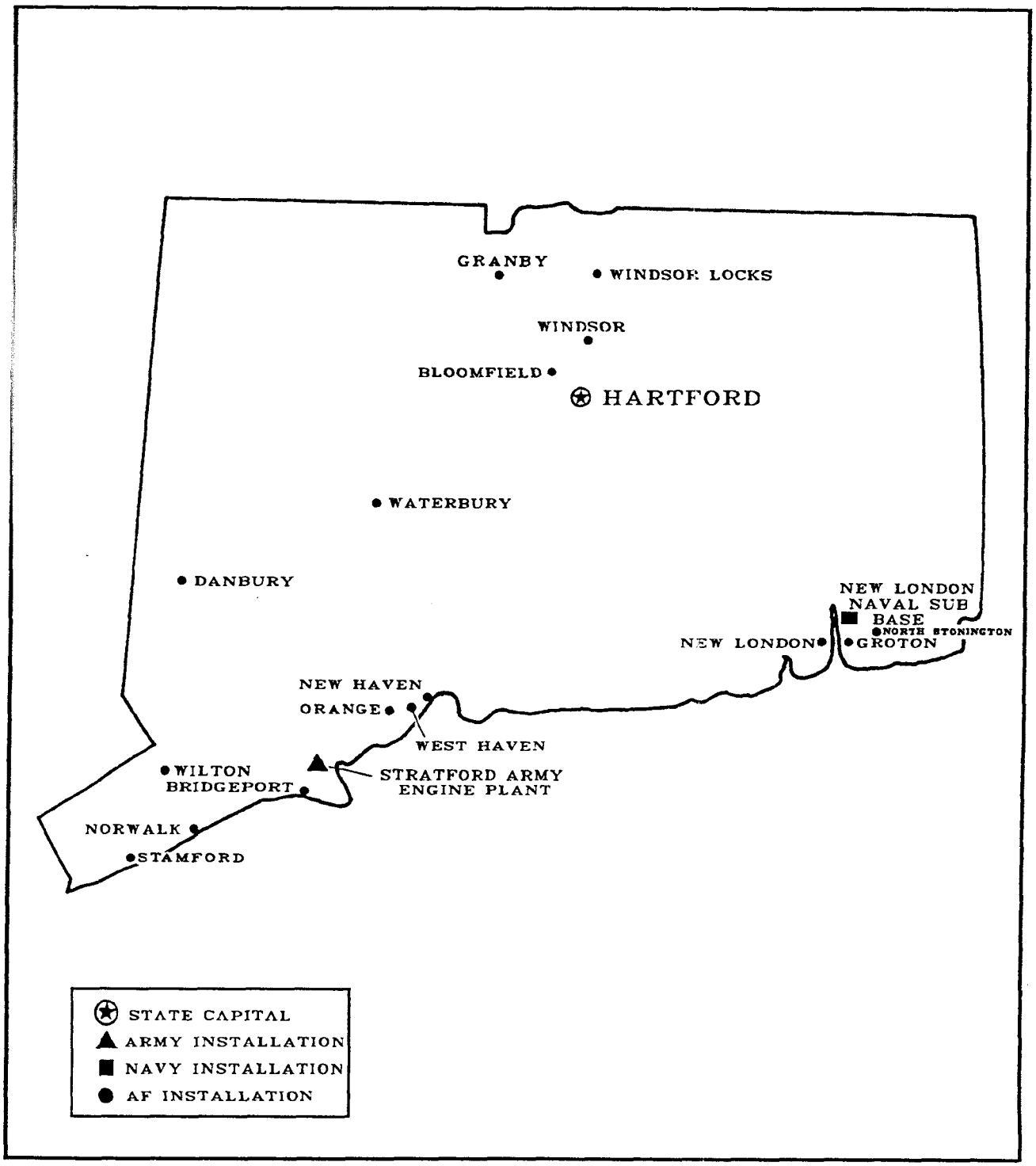
MAP NO. 7

CONNECTICUT



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CONNECTICUT

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	24,858	10,855	10,804	2,194	1,005
Active Duty Military	5,571	31	5,429	111	0
Civilian	4,213	420	2,516	272	1,005
Reserve & National Guard	15,074	10,404	2,859	1,811	0
II. Expenditures - Total	$3,071,292	$684,845	$1,999,443	$263,255	$123,749
A. Payroll Outlays - Total	621,223	94,443	429,892	51,832	45,056
Active Duty Military Pay	237,690	1,109	232,586	3,995	0
Civilian Pay	183,061	13,260	114,604	10,141	45,056
Reserve & National Guard Pay	49,900	40,600	2,659	6,641	0
Retired Military Pay	150,572	39,474	80,043	31,055	0
B. Prime Contracts Over $25,000 Total	2,450,069	590,402	1,569,551	211,423	78,693
Supply and Equipment Contracts	1,721,722	529,032	935,986	184,580	72,124
RDT&E Contracts	234,234	11,286	205,094	14,433	3,421
Service Contracts	465,955	27,530	422,867	12,410	3,148
Construction Contracts	18,143	12,539	5,604	0	0
Civil Function Contracts	10,015	10,015	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Stratford	$1,176,514	$19,900	$1,156,614	Groton	6,399	4,907	1,492
Groton	917,886	279,108	638,778	New London	1,604	352	1,252
New London	226,444	91,175	135,269	Stratford	377	22	355
Windsor Locks	78,634	19,990	58,644	Hartford	245	87	158
East Hartford	77,913	10,956	66,957	Windsor Locks	232	72	160
Danbury	57,229	3,040	54,189	East Hartford	229	3	226
North Stonington	32,263	2,011	30,252	East Granby	221	0	221
Hartford	31,148	18,139	13,009	Orange	49	9	40
Bridgeport	25,466	3,134	22,332	New Haven	45	25	20
Stamford	23,627	2,305	21,322	Windsor	32	29	3

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$2,894,638	$580,275	$1,972,879	$239,072	$102,412
Fiscal Year 1992	3,099,444	956,084	1,696,929	358,146	88,285
Fiscal Year 1991	4,978,594	1,026,598	3,037,046	800,958	113,992

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. UNITED TECHNOLOGIES CORP	$1,233,489	Aircraft Rotary Wing	$477,989
2. GENERAL DYNAMICS CORPORATION	621,778	Submarines	269,961
3. TEXTRON INC	68,971	Gas Turbines and Jet Eng, Ex Acft & Comps	38,671
4. ANALYSIS & TECHNOLOGY INC	45,393	Logistics Support Services	22,147
5. GENERAL MOTORS CORPORATION	29,874	Radar Equipment, Airborne	26,708
Total of Above	$1,999,505	(81.6% of total awards over $25,000)	

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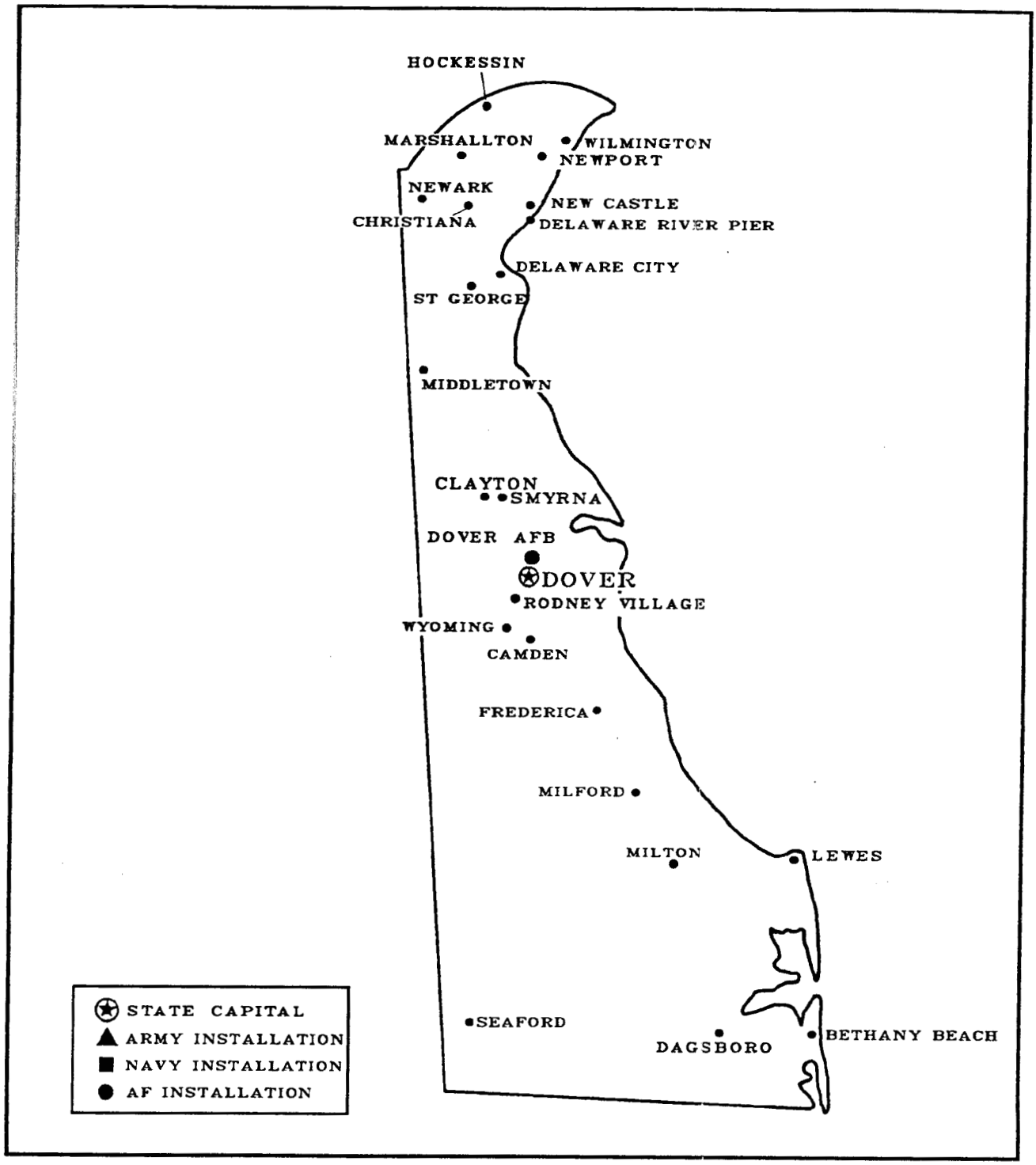
MAP NO. 8

DELAWARE



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DELAWARE

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	14,157	3,644	951	9,449	113
Active Duty Military	4,583	27	18	4,538	0
Civilian	1,636	196	0	1,327	113
Reserve & National Guard	7,938	3,421	933	3,584	0
II. Expenditures - Total	$392,374	$95,969	$18,451	$265,835	$12,119
A. Payroll Outlays - Total	284,769	39,943	15,020	226,669	3,137
Active Duty Military Pay	109,543	1,036	633	107,874	0
Civilian Pay	54,427	6,316	0	44,974	3,137
Reserve & National Guard Pay	35,142	13,435	1,622	20,085	0
Retired Military Pay	85,657	19,156	12,765	53,736	0
B. Prime Contracts Over $25,000 Total	107,605	56,026	3,431	39,166	8,982
Supply and Equipment Contracts	44,535	26,282	2,466	8,335	7,452
RDT&E Contracts	3,111	1,303	621	1,187	0
Service Contracts	37,635	6,187	344	29,574	1,530
Construction Contracts	12,689	12,619	0	70	0
Civil Function Contracts	9,635	9,635	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Dover	$228,845	$189,145	$39,700	Dover AFB	5,690	4,449	1,241
Frederica	30,265	1,809	28,456	New Castle	279	0	279
Wilmington	19,156	7,846	11,310	Newport	75	75	0
New Castle	16,790	13,910	2,880	Marshallton	46	3	43
Newark	9,088	5,558	3,530	Wilmington	32	18	14
Camden	7,385	44	7,341	Dover	27	3	24
Smyrna	3,680	1,914	1,766	Newark	13	10	3
Wyoming	3,579	273	3,306	Seaford	13	6	7
Milford	3,103	3,062	41	Georgetown	10	9	1
Christiana	2,916	2,160	756	Bethany Beach	6	0	6

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$135,601	$77,018	$8,010	$38,630	$11,943
Fiscal Year 1992	103,478	37,318	6,677	38,618	20,865
Fiscal Year 1991	132,729	40,839	9,184	53,067	29,639

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. PIERCE ENTERPRISES, INC	$20,863	Safety and Rescue Equipment	$20,729
2. I L C INDUSTRIES DELAWARE	7,443	Specilized Flight Clothing & Accessories	6,634
3. CAESAR RODNEY SCHOOL DIST	7,341	Faculty Salaries for Dependent Schools	7,341
4. IRVIN & LEIGHTON, INC	6,118	Other Residential Buildings	6,013
5. DAMES & MOORE INC	5,888	Other Environ Svcs, Studies, & Analytical	5,888
Total of Above	$47,653	(44.3% of total awards over $25,000)	

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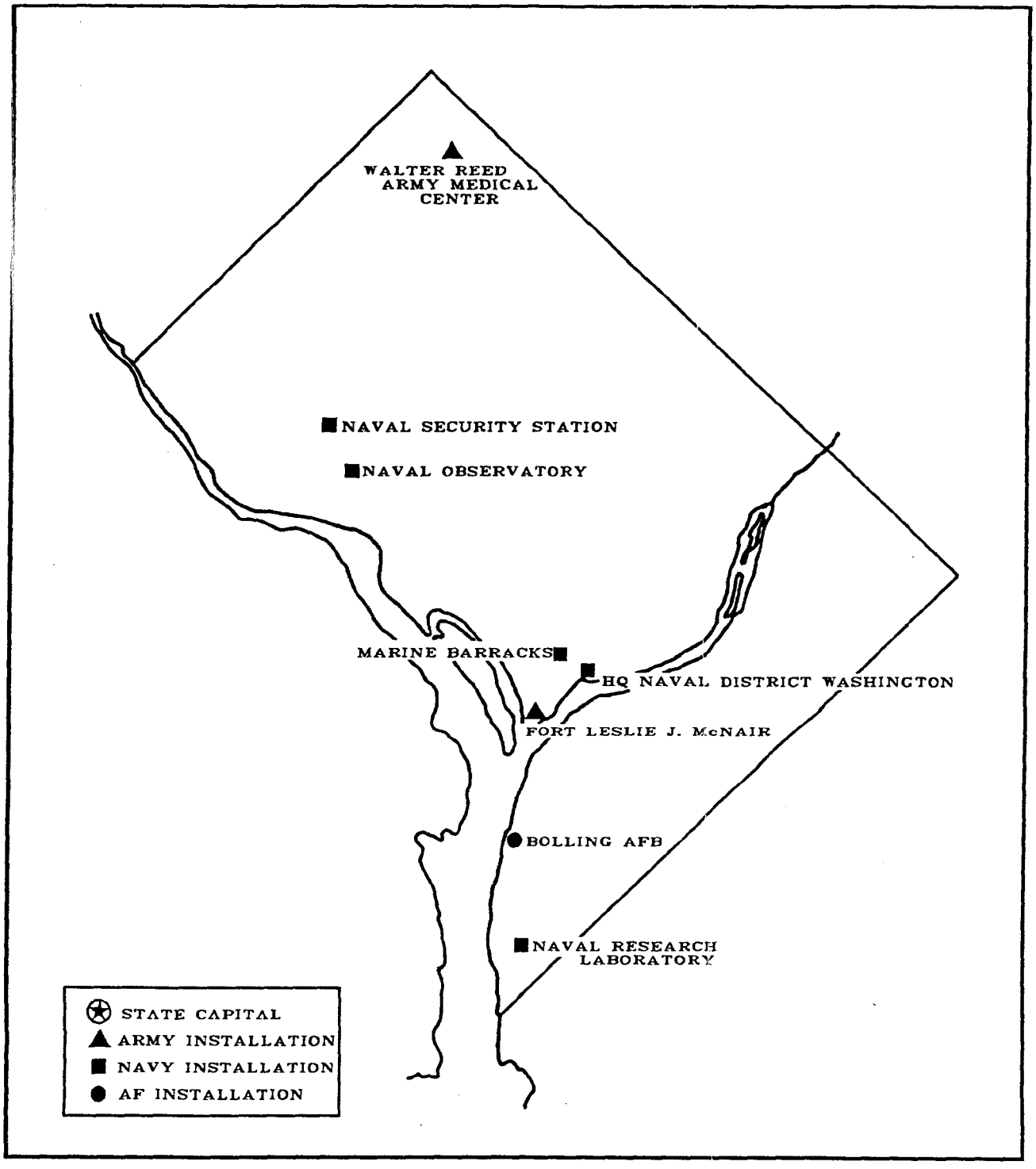
MAP NO. 9

DISTRICT OF COLUMBIA



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DISTRICT OF COLUMBIA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	43,171	15,160	21,862	5,356	793
Active Duty Military	13,785	4,447	5,642	3,696	0
Civilian	15,790	5,752	7,875	1,370	793
Reserve & National Guard	13,596	4,961	8,345	290	0
II. Expenditures - Total	$2,347,191	$631,426	$1,173,661	$304,508	$237,596
A. Payroll Outlays - Total	1,251,287	407,609	597,039	213,869	32,770
Active Duty Military Pay	480,677	174,166	162,637	143,874	0
Civilian Pay	681,975	195,968	401,563	51,674	32,770
Reserve & National Guard Pay	38,207	19,193	18,685	329	0
Retired Military Pay	50,428	18,282	14,154	17,992	0
B. Prime Contracts Over $25,000 Total	1,095,904	223,817	576,622	90,639	204,826
Supply and Equipment Contracts	249,056	40,398	154,902	9,577	44,179
RDT&E Contracts	117,959	15,922	92,866	5,353	3,818
Service Contracts	642,661	118,763	291,360	75,709	156,829
Construction Contracts	52,574	15,080	37,494	0	0
Civil Function Contracts	33,654	33,654	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Washington	$2,347,191	$1,251,287	$1,095,905	Washington	25,304	11,403	13,901
				Bolling AFB	3,705	2,222	1,483
				Fort McNair	566	160	406

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$1,691,559	$204,770	$884,810	$87,306	$514,673
Fiscal Year 1992	1,545,833	120,794	634,263	80,865	709,911
Fiscal Year 1991	1,516,385	152,008	958,344	114,960	291,073

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. AT&T CORP	$94,091	Other ADP & Telecommunication Services	$88,833
2. XEROX CORPORATION	75,781	Printing, Duplicating & Bookbinding Equip	71,999
3. INTERNATIONAL SHIPHOLDING CORP	63,413	Marine Charter For Things	60,966
4. GOVERNMENT OF UNITED STATES	60,315	Nuclear Reactors	59,462
5. HARNISCHFEGER INDUSTRIES INC	36,855	ADP System Acquisition Support Services	10,529
Total of Above	$330,455	(30.2% of total awards over $25,000)	

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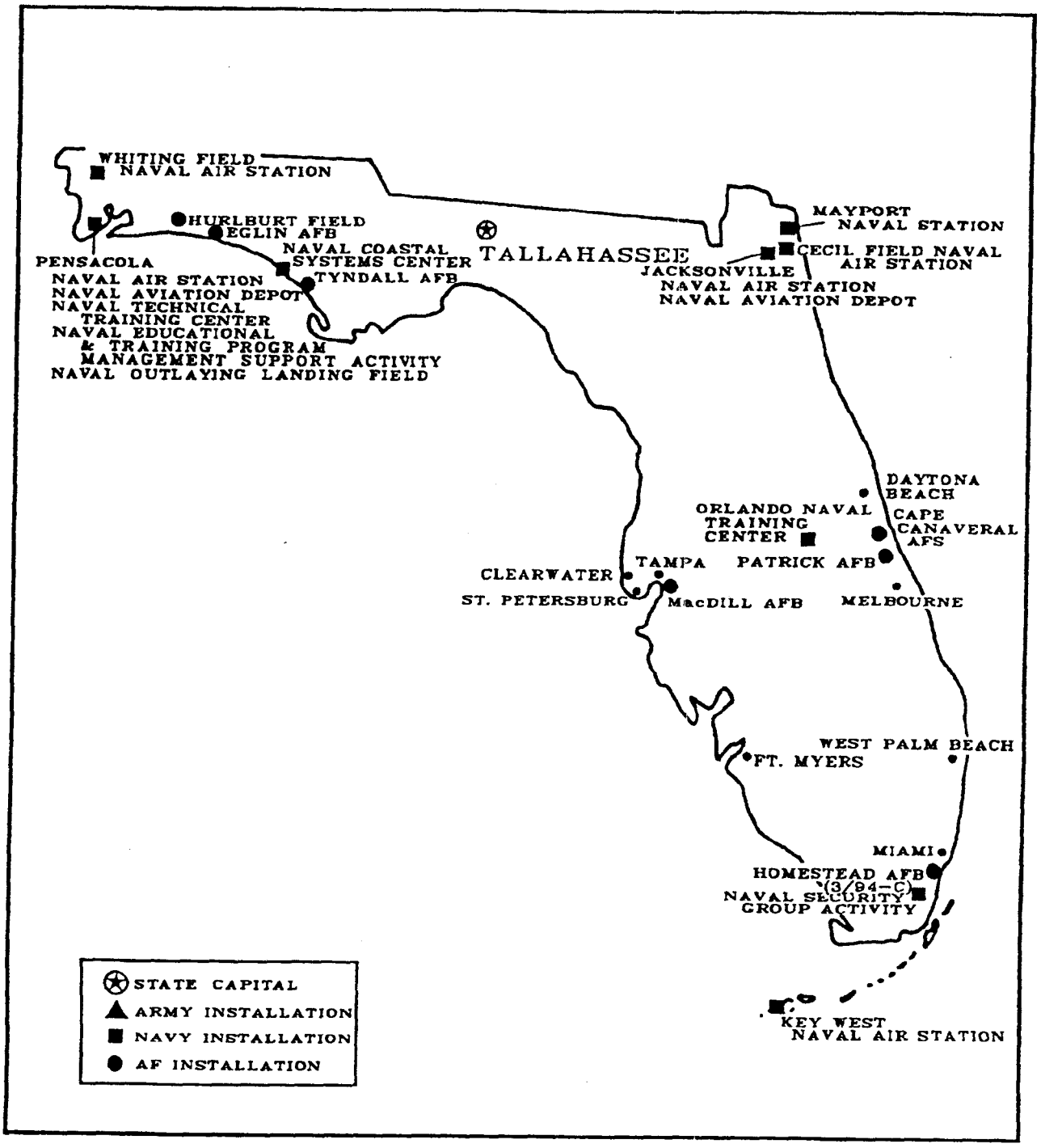
MAP NO. 10

FLORIDA



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FLORIDA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	163,465	42,841	69,425	47,794	3,405
Active Duty Military	60,801	2,296	31,603	26,902	0
Civilian	30,289	1,884	15,857	9,143	3,405
Reserve & National Guard	72,375	38,661	21,965	11,749	0
II. Expenditures - Total	$12,074,556	$2,112,645	$4,263,437	$5,411,905	$286,569
A. Payroll Outlays - Total	6,164,058	918,951	3,023,490	2,104,226	117,391
Active Duty Military Pay	2,192,854	80,414	1,380,863	731,577	0
Civilian Pay	1,025,116	62,208	621,102	224,415	117,391
Reserve & National Guard Pay	156,585	93,256	31,019	32,310	0
Retired Military Pay	2,789,503	683,073	990,506	1,115,924	0
B. Prime Contracts Over $25,000 Total	5,910,498	1,193,694	1,239,947	3,307,679	169,178
Supply and Equipment Contracts	2,508,889	556,372	353,212	1,487,761	111,544
RDT&E Contracts	1,581,102	227,611	171,517	1,171,140	10,734
Service Contracts	1,594,266	250,784	652,832	643,861	46,789
Construction Contracts	164,435	97,121	62,286	4,917	111
Civil Function Contracts	61,806	61,806	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Jacksonville	$1,600,303	$1,236,730	$363,573	Eglin AFB	13,179	8,775	4,404
West Palm Beach	1,449,721	28,276	1,421,445	Jacksonville	12,771	6,246	6,525
Orlando	1,266,506	477,494	789,012	Pensacola	12,623	6,323	6,300
Melbourne	972,669	132,790	839,879	Orlando	12,045	9,560	2,485
Pensacola	814,891	621,720	193,171	Hurlburt Fld	7,300	6,731	569
Eglin AFB	568,383	405,210	163,173	Tyndall AFB	6,021	4,924	1,097
Saint Petersburg	354,333	45,867	308,466	MacDill AFB	4,874	3,754	1,120
Tampa	320,763	275,173	45,590	Patrick AFB	3,864	2,525	1,339
Daytona Beach	290,033	17,753	272,280	Mayport Nav Station	3,562	2,690	872
Cape Canaveral AFS	267,354	17,291	250,063	Cecil Field NAS	3,280	2,764	516

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$6,485,989	$1,870,113	$1,389,187	$3,110,959	$115,730
Fiscal Year 1992	4,994,866	1,431,940	1,363,943	2,090,262	108,721
Fiscal Year 1991	5,166,419	1,491,392	1,201,943	2,385,053	88,031

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. UNITED TECHNOLOGIES CORP	$1,407,015	Gas Turbines and Jet Engines, Acft & Comps	$1,037,673
2. MARTIN MARIETTA CORPORATION	801,706	Msl Aircraft Accessories and Components	169,228
3. NORTHROP GRUMMAN CORPORATION	643,750	RDTE/Electronics & Communication Eq-Engr D	637,566
4. OLIN CORPORATION	195,673	RDTE/Ammunition-Exploratory Development	92,107
5. HARRIS CORPORATION	193,279	RDTE/Missile and Space Systems-Op Systems	56,563
Total of Above	$3,241,423	(54.8% of total awards over $25,000)	

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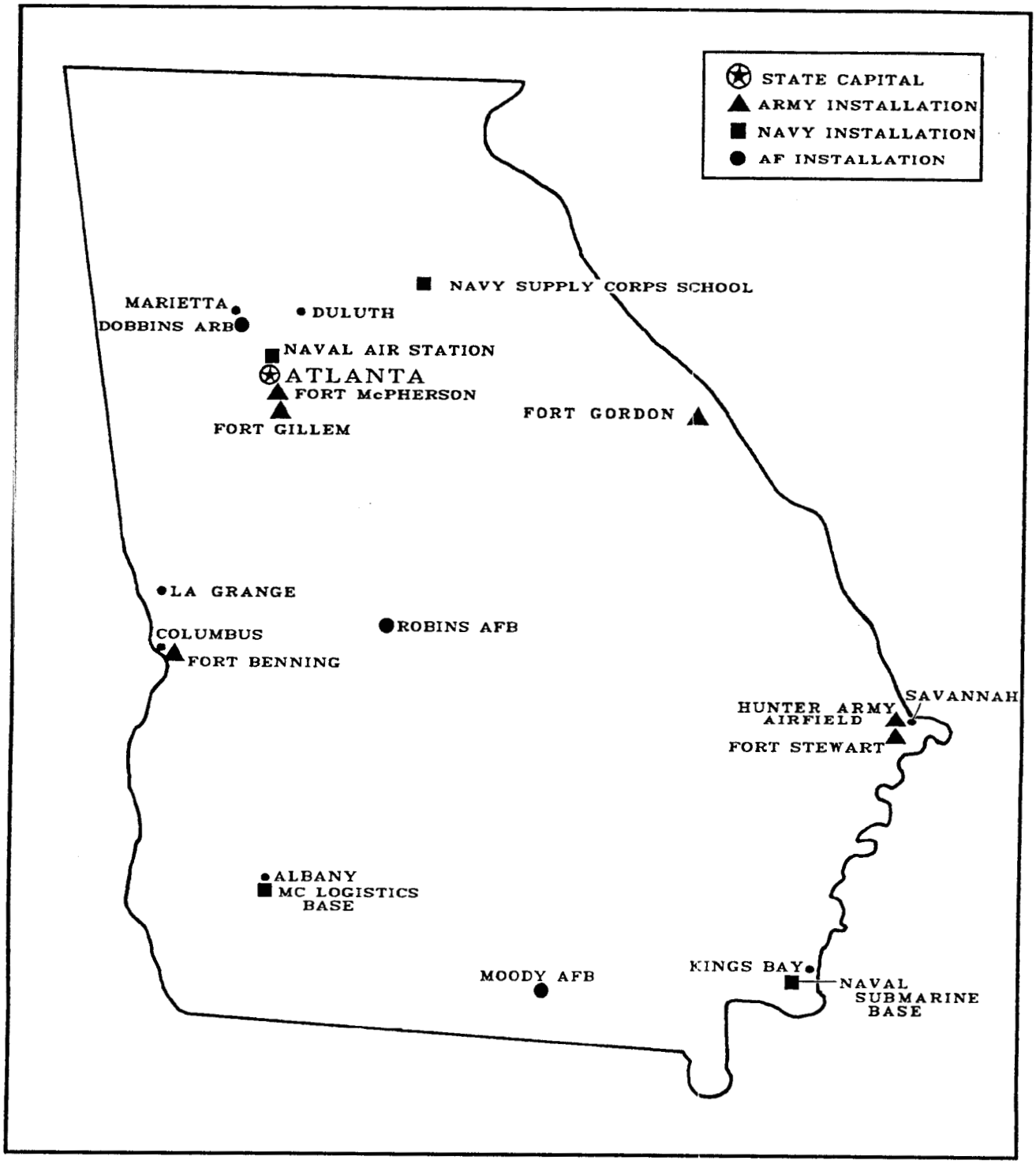
MAP NO. 11

GEORGIA



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GEORGIA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	151,409	94,859	21,335	30,787	4,428
Active Duty Military	61,841	47,564	5,321	8,956	0
Civilian	34,955	12,696	5,088	12,743	4,428
Reserve & National Guard	54,613	34,599	10,926	9,088	0
II. Expenditures - Total	$8,393,409	$3,201,359	$924,526	$4,019,522	$247,902
A. Payroll Outlays - Total	4,272,694	2,598,493	612,325	925,868	135,408
Active Duty Military Pay	1,989,987	1,520,910	239,243	229,834	0
Civilian Pay	1,087,712	407,405	177,400	367,499	135,408
Reserve & National Guard Pay	207,827	143,612	18,344	45,871	0
Retired Military Pay	987,168	526,566	177,938	282,664	0
B. Prime Contracts Over $25,000 Total	4,120,715	602,866	311,701	3,093,654	112,494
Supply and Equipment Contracts	1,276,427	89,202	73,547	1,015,289	98,389
RDT&E Contracts	1,779,598	18,235	3,799-	1,764,981	181
Service Contracts	788,418	235,719	234,964	303,811	13,924
Construction Contracts	220,969	204,407	6,989	9,573	0
Civil Function Contracts	55,303	55,303	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Marietta	$2,827,612	$89,010	$2,738,602	Fort Benning	19,420	15,341	4,079
Fort Stewart	664,487	603,379	61,108	Fort Stewart	18,200	15,834	2,366
Fort Benning	659,722	548,026	111,696	Robins AFB	16,738	4,209	12,529
Robins AFB	633,114	479,958	153,156	Fort Gordon	10,095	7,759	2,336
Atlanta	555,468	304,203	251,265	Kings Bay	5,096	3,055	2,041
Fort Gordon	423,394	338,714	84,680	Hunter Army Airfield	4,662	4,209	453
Kings Bay	296,723	238,908	57,815	Moody AFB	4,500	4,006	494
Savannah	295,448	222,648	72,800	Albany	4,046	1,058	2,988
Albany	160,124	150,535	9,589	Fort McPherson	3,816	1,982	1,834
Moody AFB	115,951	96,416	19,535	Atlanta	1,757	567	1,190

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$4,017,518	$464,898	$429,105	$2,982,455	$141,060
Fiscal Year 1992	3,795,685	435,821	449,667	2,812,701	97,496
Fiscal Year 1991	1,983,797	700,664	330,956	820,210	131,967

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. LOCKHEED CORPORATION	$2,727,904	RDTE/Aircraft-Engineering Development	$1,724,115
2. CSX CORPORATION	105,897	Vessel Freight	105,897
3. ROCKWELL INTERNATIONAL CORP	82,945	Bombs	55,360
4. JOHNSON CONTROLS INC	62,202	Facilities Operations Support Services	60,931
5. CONNER BROTHERS CNSTR CO	57,843	Troop Housing Facilities	35,502
Total of Above	$3,036,791	(73.7% of total awards over $25,000)	

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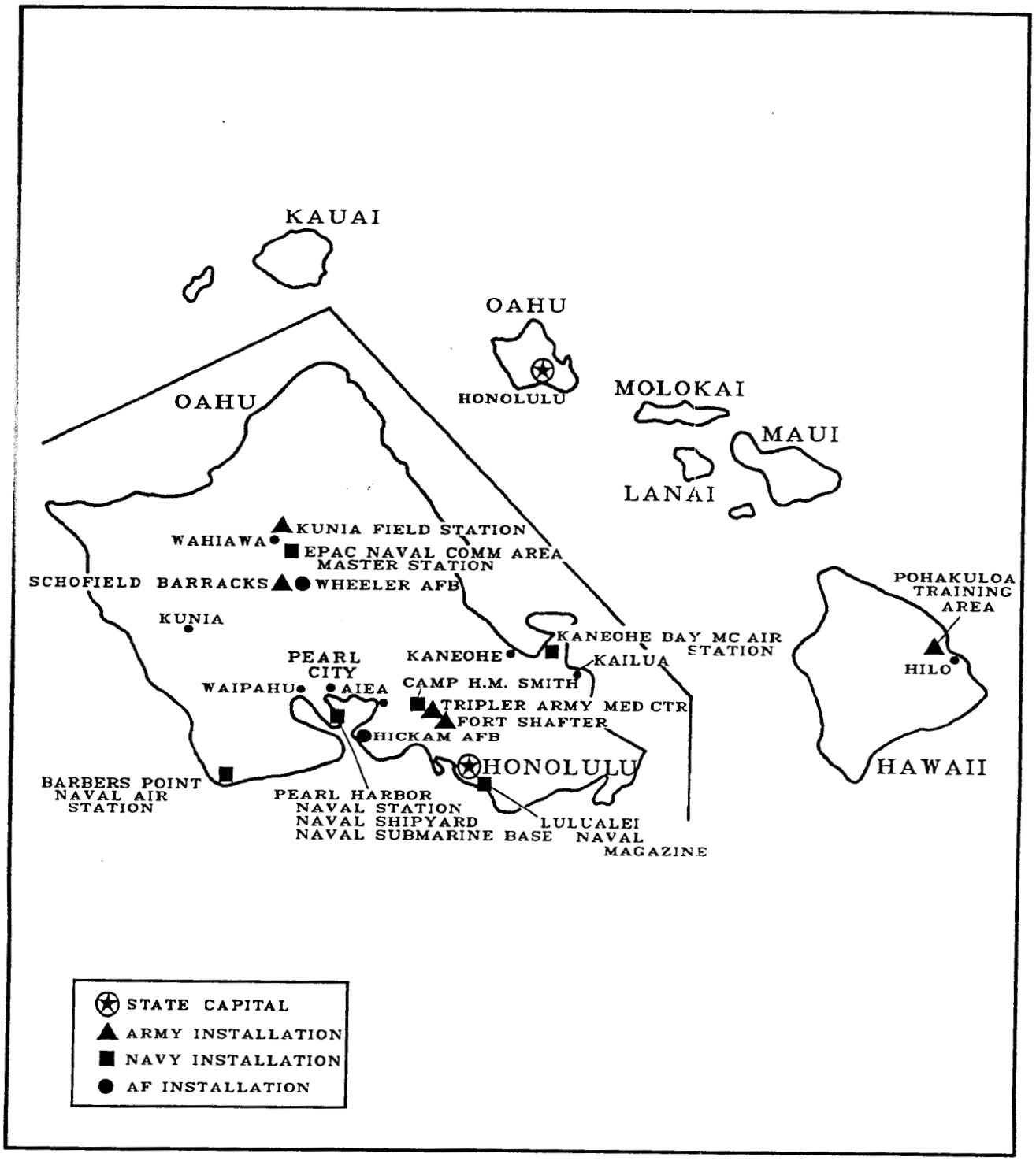
MAP NO. 12

HAWAII



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HAWAII

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	73,023	32,501	30,101	9,324	1,097
Active Duty Military	42,161	19,485	17,994	4,682	0
Civilian	17,038	4,647	9,923	1,371	1,097
Reserve & National Guard	13,824	8,369	2,184	3,271	0
II. Expenditures - Total	$3,220,143	$1,157,024	$1,652,302	$334,905	$75,912
A. Payroll Outlays - Total	2,416,846	893,841	1,226,304	266,614	30,087
Active Duty Military Pay	1,475,729	620,436	707,176	148,117	0
Civilian Pay	670,801	159,172	435,653	45,889	30,087
Reserve & National Guard Pay	51,911	34,287	3,392	14,232	0
Retired Military Pay	218,405	79,946	80,083	58,376	0
B. Prime Contracts Over $25,000 Total	803,297	263,183	425,998	68,291	45,825
Supply and Equipment Contracts	51,341	5,166	5,599	1,627	38,949
RDT&E Contracts	15,454	2,796	468	12,190	0
Service Contracts	485,515	119,326	306,202	53,111	6,876
Construction Contracts	249,301	134,209	113,729	1,363	0
Civil Function Contracts	1,686	1,686	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Pearl Harbor	$1,074,092	$771,554	$302,538	Schofield Barracks	17,219	16,248	971
Schofield Barracks	637,774	555,678	82,096	Pearl Harbor	15,710	6,942	8,768
Honolulu	431,179	324,493	106,686	Kaneohe	6,720	6,187	533
Hickam AFB	220,828	164,315	56,513	Hickam AFB	4,805	3,515	1,290
Kaneohe	202,280	193,490	8,790	Barbers Point NAS	3,085	2,671	414
Barbers Point NAS	118,944	106,541	12,403	Tripler Army Med Ctr	3,052	1,890	1,162
Pearl City	41,833	15,196	26,637	Fort Shafter	3,013	1,189	1,824
Aiea	39,418	36,861	2,557	Wheeler AFB	1,073	628	445
Wheeler AFB	38,745	32,332	6,413	Camp H.M. Smith	730	705	25
Wahiawa	34,905	24,116	10,789	Honolulu	604	322	282

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$631,021	$244,275	$237,579	$59,948	$89,219
Fiscal Year 1992	622,728	173,655	282,644	76,366	90,063
Fiscal Year 1991	697,127	218,607	250,164	158,866	69,490

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. HUNT BUILDING CORPORATION	$87,906	Family Housing Facilities	$87,906
2. MORRISON KNUDSEN CORP DEL CORP	43,532	Family Housing Facilities	42,141
3. OGDEN CORPORATION	38,759	Other Architect & Engineering Services	38,478
4. BROKEN HILL PROPRIETARY CO MPA	27,517	Fuel Oils	25,020
5. KIEWIT PETER SONS DE CORP	25,428	Other Miscellaneous Buildings	18,152
Total of Above	$223,142	(27.8% of total awards over $25,000)	

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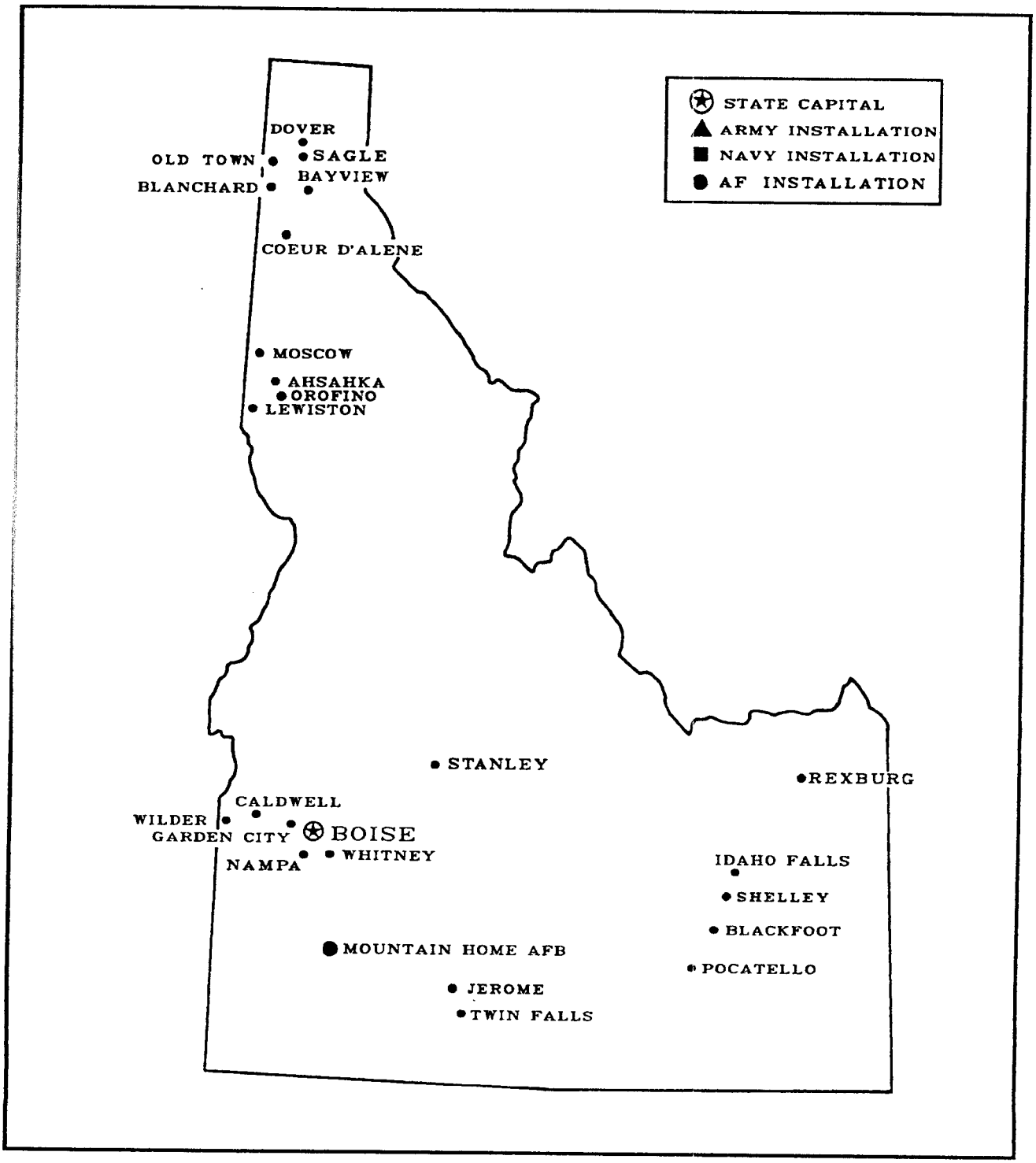
MAP NO. 13

IDAHO



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IDAHO

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	15,934	7,124	2,302	6,408	100
Active Duty Military	4,312	23	694	3,595	0
Civilian	1,495	574	74	747	100
Reserve & National Guard	10,127	6,527	1,534	2,066	0
II. Expenditures - Total	$380,985	$87,163	$71,270	$203,243	$19,309
A. Payroll Outlays - Total	314,826	60,256	68,426	183,693	2,451
Active Duty Military Pay	109,461	758	23,921	84,782	0
Civilian Pay	37,898	6,539	3,217	25,691	2,451
Reserve & National Guard Pay	33,509	22,939	1,664	8,906	0
Retired Military Pay	133,958	30,020	39,624	64,314	0
B. Prime Contracts Over $25,000 Total	66,159	26,907	2,844	19,550	16,858
Supply and Equipment Contracts	17,434	1,815	774	1,437	13,408
RDT&E Contracts	7,447	2,456	1,844	182	2,965
Service Contracts	29,406	10,914	226	17,781	485
Construction Contracts	9,298	9,148	0	150	0
Civil Function Contracts	2,574	2,574	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Mountain Home AFB	$137,068	$107,178	$29,890	Mountain Home AFB	3,857	3,342	515
Boise	80,401	61,716	18,685	Boise	1,016	242	774
Idaho Falls	31,806	30,014	1,792	Idaho Falls	641	616	25
Rexburg	6,704	296	6,408	Bayview	53	1	52
Coeur d'Alene	6,511	6,483	28	Moscow	53	52	1
Pocatello	6,287	5,039	1,248	Ahsahka	44	0	44
Lewiston	5,983	4,464	1,519	Wilder	30	29	1
Bayview	4,834	2,990	1,844	Old Town	29	0	29
Caldwell	4,780	4,601	179	Lewiston	27	23	4
Moscow	4,700	4,373	327	Mountain Home	16	0	16

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$67,484	$27,927	$1,868	$21,848	$15,841
Fiscal Year 1992	66,269	15,092	2,335	29,202	19,640
Fiscal Year 1991	77,974	33,672	2,800	16,069	25,433

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. MICRON TECHNOLOGY INC	$7,495	RDTE/Other Defense-Advanced Development	$2,868
2. HORKLEYS INC	6,408	Fuel Oils	6,184
3. ALL AMERICAN CONTRACTORS	3,590	Maint/Other Industrial Buildings	3,590
4. RECORD STEEL AND CONSTRUCTION	3,412	Office Buildings	3,412
5. PARSON JACK B COMPANIES	3,100	Maint/Other Airfield Structures	3,100
Total of Above	$24,005	(36.3% of total awards over $25,000)	

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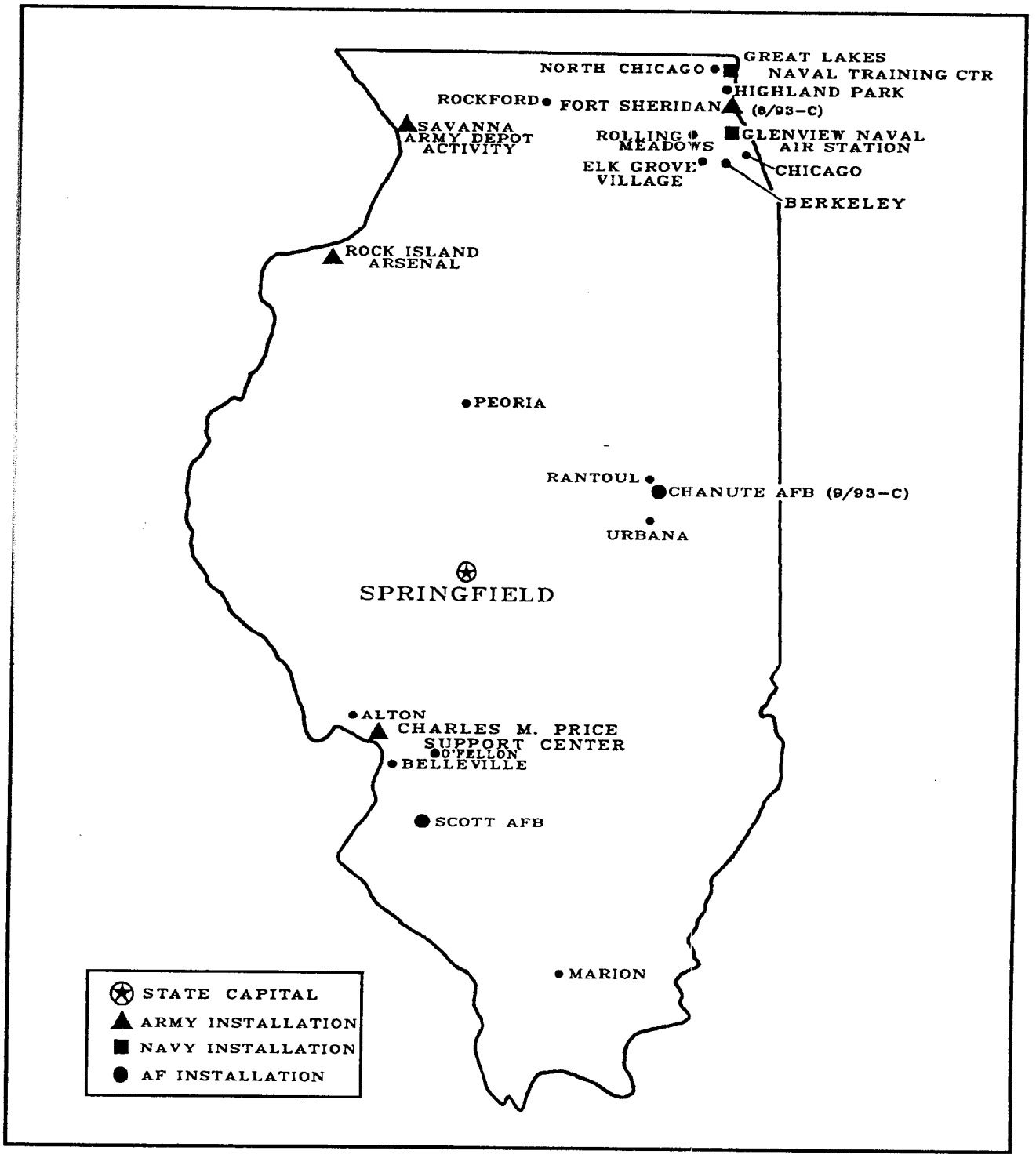
MAP NO. 14

ILLINOIS



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ILLINOIS

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	104,909	47,770	34,941	20,694	1,504
Active Duty Military	27,311	1,189	19,005	7,117	0
Civilian	16,825	9,162	2,130	4,029	1,504
Reserve & National Guard	60,773	37,419	13,806	9,548	0
II. Expenditures - Total	$3,066,458	$948,583	$714,393	$1,068,118	$335,364
A. Payroll Outlays - Total	1,810,068	579,731	588,509	583,766	58,062
Active Duty Military Pay	678,406	48,396	389,880	240,130	0
Civilian Pay	588,694	319,034	71,153	140,445	58,062
Reserve & National Guard Pay	141,950	89,263	19,075	33,612	0
Retired Military Pay	401,018	123,038	108,401	169,579	0
B. Prime Contracts Over $25,000 Total	1,256,390	368,852	125,884	484,352	277,302
Supply and Equipment Contracts	643,483	98,886	40,339	288,502	215,756
RDT&E Contracts	89,335	15,587	15,379	57,113	1,256
Service Contracts	344,193	77,937	68,339	137,627	60,290
Construction Contracts	38,849	35,912	1,827	1,110	0
Civil Function Contracts	140,530	140,530	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Great Lakes	$490,239	$437,124	$53,115	Great Lakes	20,438	18,324	2,114
Scott AFB	450,518	351,890	98,628	Scott AFB	9,902	6,887	3,015
Rock Island	306,143	241,833	64,310	Rock Island	6,810	122	6,688
Rolling Meadows	278,226	1,208	277,018	Chicago	1,458	106	1,352
Chicago	203,658	70,539	133,119	Springfield	869	118	751
Peoria	80,263	26,026	54,237	Glenview	542	365	177
Glenview	59,670	34,322	25,348	Champaign	497	30	467
Springfield	53,076	52,743	333	Peoria	432	83	349
Rockford	46,192	9,402	36,790	Savanna Army Depot	415	0	415
O'Fallon	43,828	21,937	21,891	North Chicago	227	30	197

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$1,359,421	$381,270	$139,151	$522,686	$316,314
Fiscal Year 1992	1,353,550	388,100	236,743	416,749	311,958
Fiscal Year 1991	1,790,834	449,380	246,551	652,396	442,507

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. NORTHROP GRUMMAN CORPORATION	$274,360	Elct Countermeasures & Quick Reaction Eq	$174,418
2. I I T RESEARCH INSTITUTE	53,870	RDTE/Other Research & Development-Op Sys D	39,888
3. CATERPILLAR INC	41,783	Tractor, Full Tracked, Low Speed	11,477
4. MCI TELECOMMUNICATIONS CORP	32,029	Other ADP & Telecommunication Services	32,029
5. SUNDSTRAND CORPORATION	27,963	Generators and Generator Sets, Electrical	4,298
Total of Above	$430,005	(34.2% of total awards over $25,000)	

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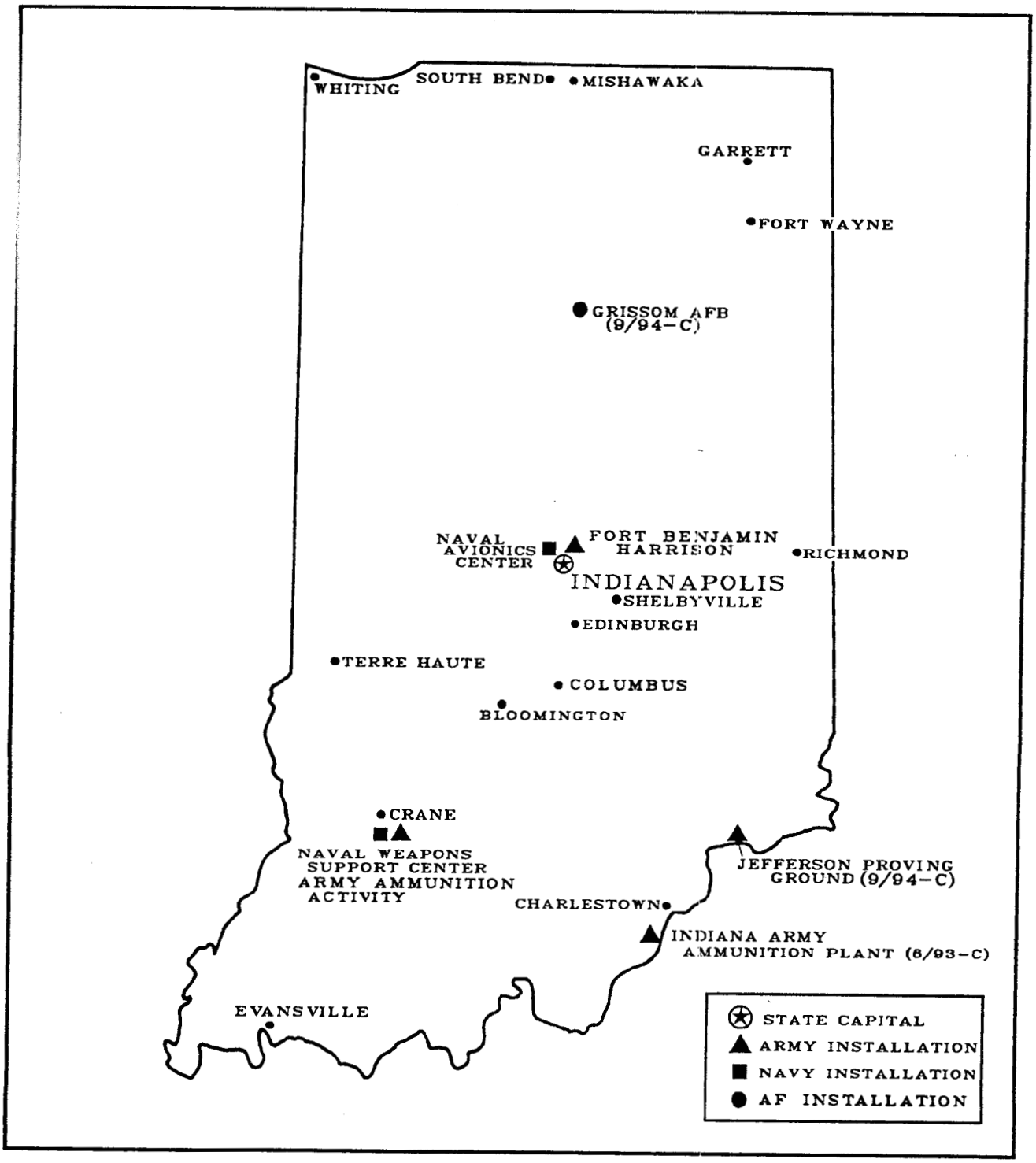
MAP NO. 15

INDIANA



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Operations and Reports

INDIANA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	58,697	33,663	13,025	7,978	4,031
Active Duty Military	3,813	2,463	544	806	0
Civilian	14,341	2,594	6,430	1,286	4,031
Reserve & National Guard	40,543	28,606	6,051	5,886	0
II. Expenditures - Total	$2,489,085	$1,235,728	$536,120	$435,439	$281,798
A. Payroll Outlays - Total	1,170,181	485,011	374,120	165,215	145,835
Active Duty Military Pay	129,479	82,577	16,950	29,952	0
Civilian Pay	566,239	98,201	292,568	29,535	145,835
Reserve & National Guard Pay	227,561	200,265	3,929	23,367	0
Retired Military Pay	246,902	103,968	60,573	82,361	0
B. Prime Contracts Over $25,000 Total	1,318,904	750,717	162,000	270,224	135,963
Supply and Equipment Contracts	880,431	554,214	52,884	171,494	101,839
RDT&E Contracts	67,201	40,280	13,067	13,854	0
Service Contracts	339,515	131,057	89,651	84,683	34,124
Construction Contracts	19,329	12,738	6,398	193	0
Civil Function Contracts	12,428	12,428	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Indianapolis	$919,446	$576,197	$343,249	Indianapolis	7,447	502	6,945
Fort Wayne	407,678	31,466	376,212	Crane	4,047	103	3,944
Mishawaka	221,109	1,642	219,467	Ft Benjamin Harrison	2,965	1,650	1,315
Crane	195,319	171,897	23,422	Grissom AFB	1,272	448	824
South Bend	98,744	9,603	89,141	Fort Wayne	462	114	348
Grissom AFB	58,308	49,170	9,138	Terre Haute	310	77	233
Columbus	54,878	3,586	51,292	Jefferson Prov Grnd	198	10	188
Terre Haute	33,314	17,537	15,777	Edinburgh	146	42	104
Evansville	33,276	11,906	21,370	Shelbyville	112	29	83
Whiting	28,391	205	28,186	South Bend	101	41	60

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$1,761,204	$861,673	$348,731	$307,583	$243,217
Fiscal Year 1992	1,517,308	956,509	237,559	199,788	123,452
Fiscal Year 1991	2,189,522	1,108,259	322,044	545,879	213,340

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work: FSC or Service Code Description	Amount
1. RENCO GROUP, THE INC	$254,996	Trucks and Truck Tractors, Wheeled	$237,523
2. ITT CORPORATION	217,431	Radio & TV Comm Equipment, Except Airborne	128,581
3. CDA HOLDING INC	216,712	Gas Turbines and Jet Engines, Acft & Comps	107,309
4. MESC HOLDINGS INC	156,000	Miscellaneous Communication Equipment	56,724
5. ALLIED SIGNAL INC	51,548	Acft Maint & Repair Shop Specilized Equip	16,738
Total of Above	$896,687	(68.0% of total awards over $25,000)	

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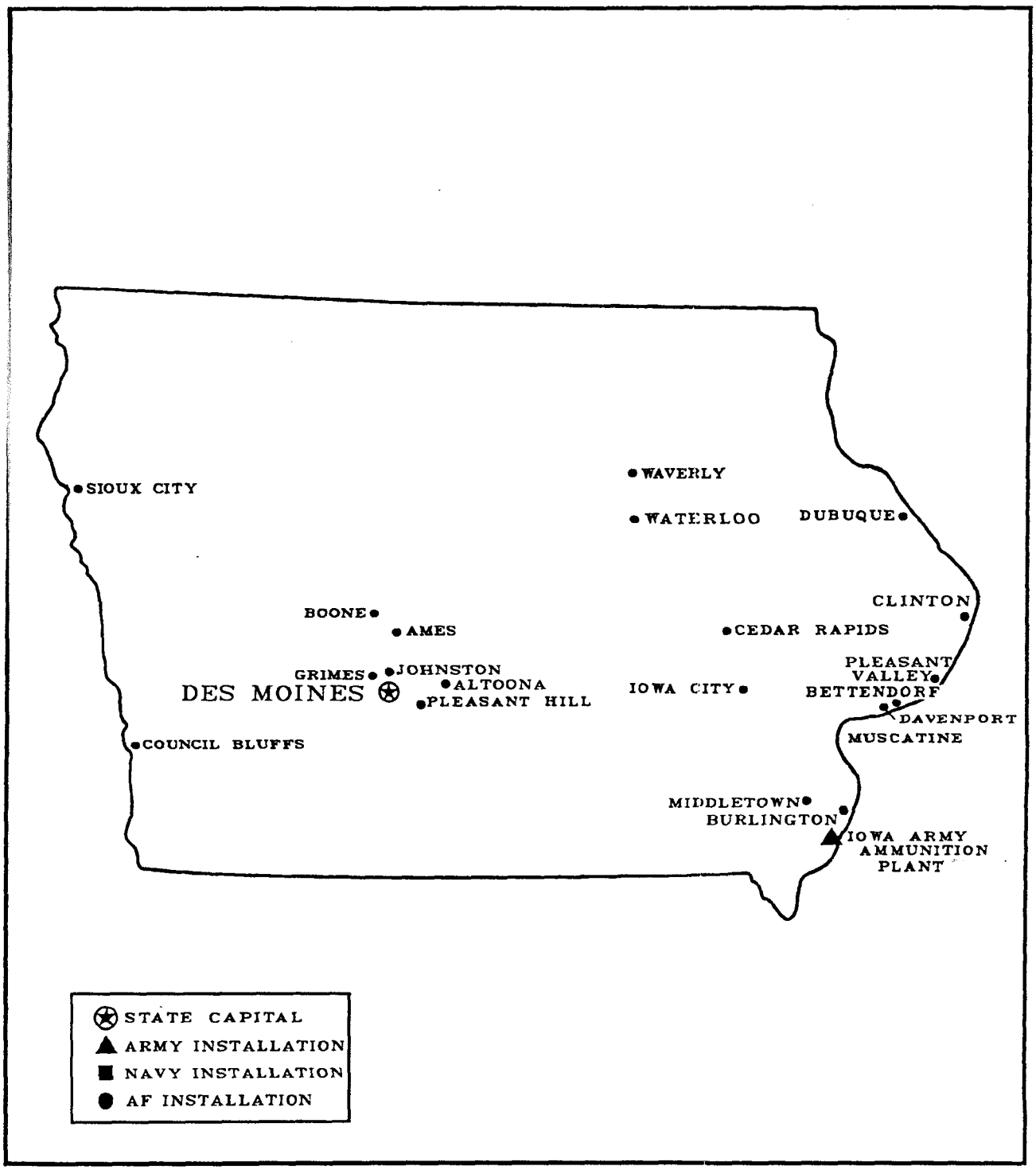
MAP NO. 16

IOWA



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IOWA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	23,647	16,154	3,610	3,801	82
Active Duty Military	445	220	63	162	0
Civilian	1,375	761	4	528	82
Reserve & National Guard	21,827	15,173	3,543	3,111	0
II. Expenditures - Total	$545,072	$213,877	$118,298	$188,919	$23,978
A. Payroll Outlays - Total	235,856	123,446	37,276	70,528	4,606
Active Duty Military Pay	16,032	8,379	2,344	5,309	0
Civilian Pay	44,809	23,457	123	16,623	4,606
Reserve & National Guard Pay	67,193	53,632	1,581	11,980	0
Retired Military Pay	107,822	37,978	33,228	36,616	0
B. Prime Contracts Over $25,000 Total	309,216	90,431	81,022	118,391	19,372
Supply and Equipment Contracts	149,928	9,391	50,752	71,943	17,842
RDT&E Contracts	63,195	10,126	7,065	46,004	0
Service Contracts	56,630	31,451	23,205	444	1,530
Construction Contracts	12,781	12,781	0	0	0
Civil Function Contracts	26,682	26,682	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Cedar Rapids	$213,284	$12,273	$201,011	Des Moines	352	103	249
Des Moines	57,969	25,196	32,773	Sioux City	329	70	259
Sioux City	22,301	21,648	653	Camp Dodge/Grimes	296	0	296
Iowa AAP	19,097	0	19,097	Pleasant Hill	139	0	139
Davenport	18,886	8,285	10,601	Cedar Rapids	117	25	92
Camp Dodge/Grimes	14,756	14,756	0	Boone	65	30	35
Muscatine	9,316	1,241	8,075	Waterloo	60	14	46
Johnston	8,058	7,817	241	Fort Dodge	51	12	39
Ames	7,289	4,419	2,870	Ames	49	41	8
Council Bluffs	6,893	6,853	40	Davenport	47	1	46

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$363,500	$108,263	$79,963	$150,508	$24,766
Fiscal Year 1992	441,980	151,328	83,190	171,880	35,582
Fiscal Year 1991	458,455	207,266	41,850	148,501	60,838

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. ROCKWELL INTERNATIONAL CORP	$199,852	Radio and TV Comm Equipment, Airborne	$53,771
2. COMPUTER RELIANCE	17,811	Operation/Ammunition Facilities	18,164
3. LITTON INDUSTRIES INC	8,781	Aircraft AC, Heating and Pressurizing Eq	6,431
4. TAYLOR BALL, INC	6,077	Other Airfield Structures	4,476
5. CAL WESTERN PACKAGING CORP	5,072	Food, Oils and Fats	5,072
Total of Above	$237,593	(76.8% of total awards over $25,000)	

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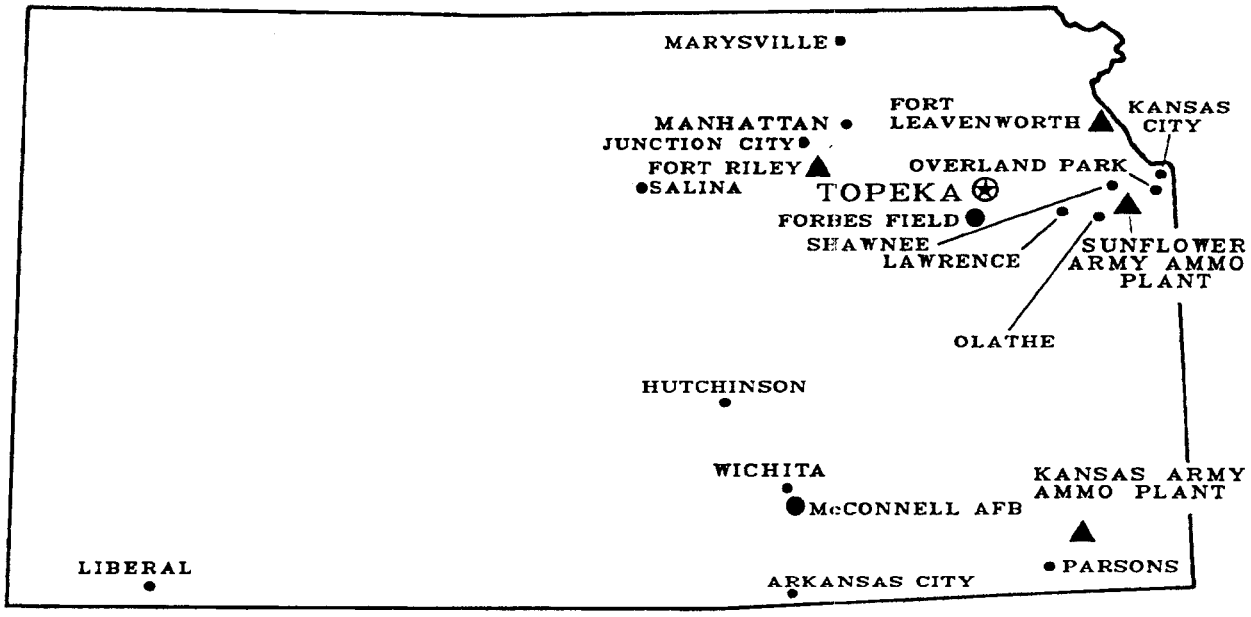
MAP NO. 17

KANSAS



STATE CAPITAL
ARMY INSTALLATION
NAVY INSTALLATION
AF INSTALLATION

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KANSAS

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	51,232	37,193	5,077	8,285	677
Active Duty Military	21,851	17,480	319	4,052	0
Civilian	6,197	4,344	137	1,039	677
Reserve & National Guard	23,184	15,369	4,621	3,194	0
II. Expenditures - Total	$1,845,885	$1,186,151	$108,334-	$668,517	$99,551
A. Payroll Outlays - Total	1,265,782	932,027	74,499	237,519	21,737
Active Duty Military Pay	701,805	592,055	11,307	98,443	0
Civilian Pay	208,976	145,717	5,072	36,450	21,737
Reserve & National Guard Pay	101,197	74,609	14,403	12,185	0
Retired Military Pay	253,804	119,646	43,717	90,441	0
B. Prime Contracts Over $25,000 Total	580,103	254,124	182,833-	430,998	77,814
Supply and Equipment Contracts	188,913	52,501	184,125-	245,743	74,794
RDT&E Contracts	8,440	980	859	6,601	0
Service Contracts	317,717	136,264	433	178,000	3,020
Construction Contracts	42,693	42,039	0	654	0
Civil Function Contracts	22,340	22,340	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Fort Riley	$637,818	$561,079	$76,739	Fort Riley	16,061	14,000	2,061
Wichita	308,791	47,200	261,591	Fort Leavenworth	5,067	3,162	1,905
Fort Leavenworth	257,051	187,004	70,047	McConnell AFB	4,515	3,652	863
McConnell AFB	148,557	120,281	28,276	Wichita	410	173	237
Topeka	48,708	27,993	20,715	Topeka	409	132	277
Leavenworth	33,821	25,402	8,419	Forbes Field	299	83	216
Junction City	25,195	22,440	2,755	Junction City	152	18	134
Olathe	24,546	9,898	14,648	Overland Park	104	19	85
Liberal	20,048	850	19,198	Salina	103	61	42
Manhattan	17,808	16,926	882	Lawrence	102	86	16

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$658,655	$255,596	$12,044	$312,979	$78,036
Fiscal Year 1992	855,130	289,121	11,727	491,340	62,942
Fiscal Year 1991	852,466	318,189	46,947	427,837	59,493

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. MCDONNELL DOUGLAS CORPORATION	$156,005	Aircraft Fixed Wing	$155,862
2. RAYTHEON COMPANY	44,133	Guided Missiles	25,377
3. BOMBARDIER INC	33,998	Program Management/Support Services	33,583
4. WESTERN RESOURCES INC	23,870	Gases, Compressed and Liquefied	12,845
5. LOGICON INC	21,632	Education Services	21,632
Total of Above	$279,638	(48.2% of total awards over $25,000)	

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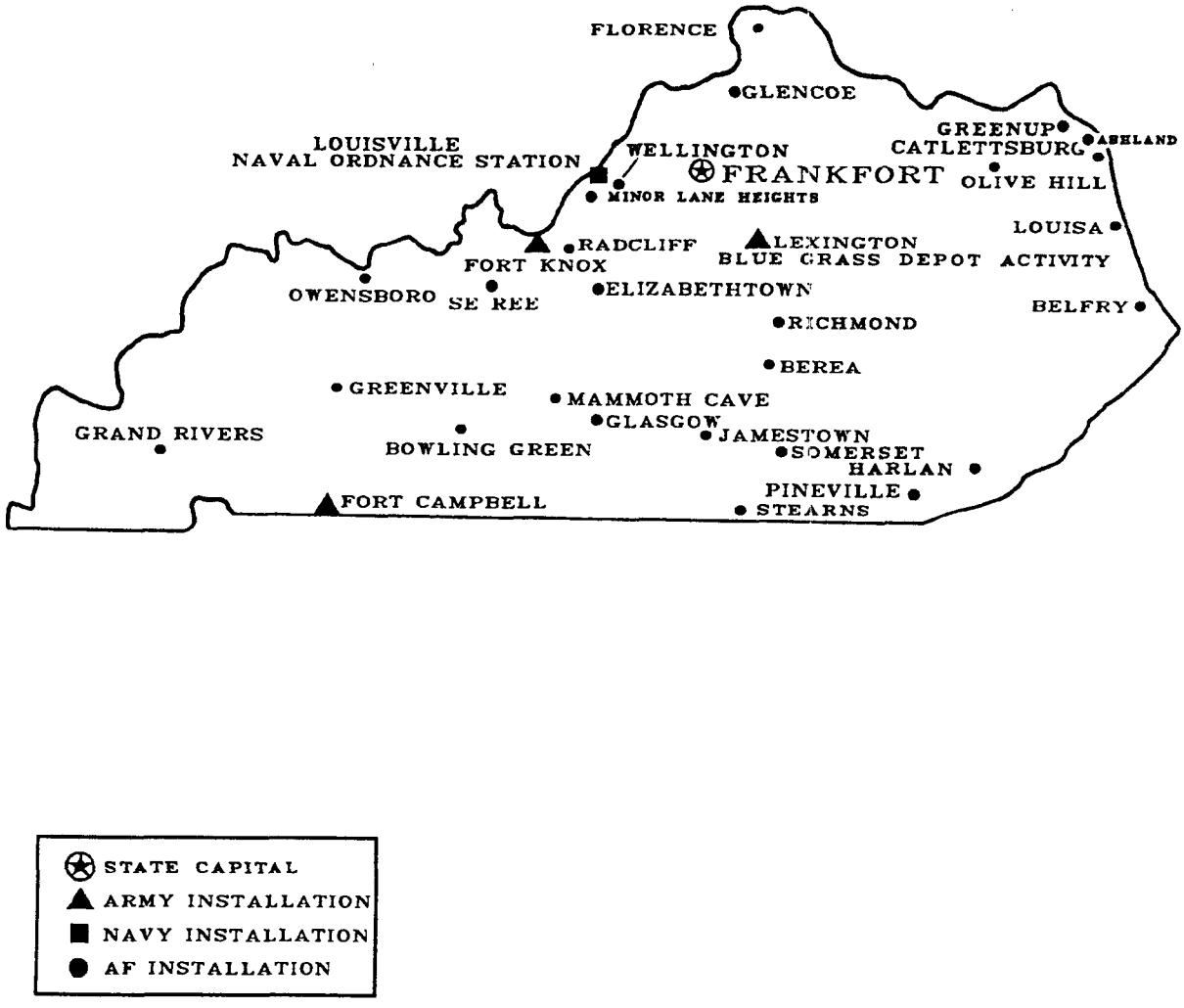
MAP NO. 18

KENTUCKY



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KENTUCKY

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	72,495	61,679	6,035	2,847	1,934
Active Duty Military	33,595	33,026	272	297	0
Civilian	12,188	8,013	2,001	240	1,934
Reserve & National Guard	26,712	20,640	3,762	2,310	0
II. Expenditures - Total	$2,671,427	$1,928,932	$160,278	$118,430	$463,787
A. Payroll Outlays - Total	1,902,326	1,616,416	144,292	87,926	53,692
Active Duty Military Pay	1,116,100	1,100,147	7,040	8,913	0
Civilian Pay	426,505	280,413	85,270	7,130	53,692
Reserve & National Guard Pay	76,415	65,412	3,421	7,582	0
Retired Military Pay	283,306	170,444	48,561	64,301	0
B. Prime Contracts Over $25,000 Total	769,101	312,516	15,986	30,504	410,095
Supply and Equipment Contracts	158,168	51,350	7,766	15,909	83,143
RDT&E Contracts	1,537	1,377	0	160	0
Service Contracts	469,932	120,376	8,169	14,435	326,952
Construction Contracts	114,185	114,134	51	0	0
Civil Function Contracts	25,279	25,279	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Fort Campbell	$953,634	$831,569	$122,065	Fort Campbell	24,268	21,076	3,192
Fort Knox	629,217	518,675	110,542	Fort Knox	15,985	11,528	4,457
Lexington	383,386	16,058	367,328	Louisville	3,340	239	3,101
Louisville	208,855	164,876	43,979	Richmond	657	78	579
Richmond	39,687	38,230	1,457	Frankfort	464	170	294
Radcliff	31,836	31,836	0	Lexington	140	49	91
Frankfort	26,898	24,579	2,319	Hopkinsville	115	17	98
Florence	25,076	2,409	22,667	Radcliff	91	90	1
Stearns	22,717	292	22,425	Wellington	52	52	0
Elizabethtown	17,547	17,178	369	Ashland	37	23	14

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$847,091	$560,318	$17,069	$117,539	$152,145
Fiscal Year 1992	437,121	308,763	23,419	20,835	84,104
Fiscal Year 1991	590,634	400,826	48,251	15,032	126,525

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. E-SYSTEMS INC	$325,249	Maint & Repair of Eq/Miscellaneous Equipme	$325,249
2. PENCE, HOWARD W INC	38,132	Troop Housing Facilities	20,558
3. HENSEL PHELPS CONSTRUCTION CO	28,317	Troop Housing Facilities	28,266
4. OUTDOOR VENTURE CORPORATION	22,425	Tents and Tarpaulins	22,425
5. KECO INDUSTRIES, INC	21,848	Refrigeration Equip	9,260
Total of Above	$435,971	(56.7% of total awards over $25,000)	

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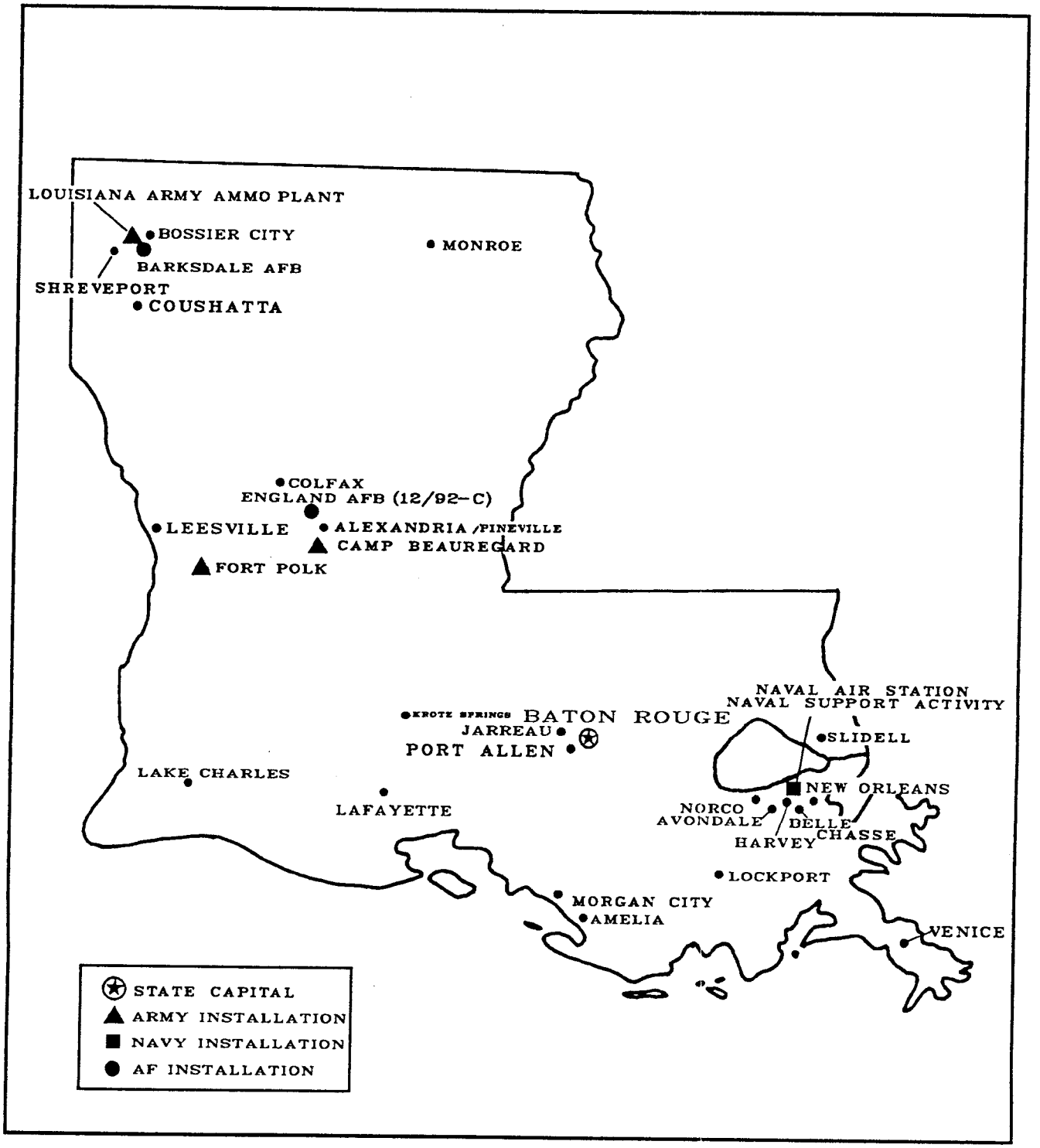
MAP NO. 19

LOUISIANA



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LOUISIANA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	69,507	41,948	12,880	13,963	716
Active Duty Military	20,322	12,510	1,652	6,160	0
Civilian	8,643	4,359	1,791	1,777	716
Reserve & National Guard	40,542	25,079	9,437	6,026	0
II. Expenditures - Total	$3,503,494	$1,113,636	$1,386,020	$438,520	$565,318
A. Payroll Outlays - Total	1,355,378	709,097	218,714	406,518	21,049
Active Duty Military Pay	591,520	385,999	55,851	149,670	0
Civilian Pay	260,685	118,836	62,047	58,753	21,049
Reserve & National Guard Pay	127,790	81,650	20,268	25,872	0
Retired Military Pay	375,383	122,612	80,548	172,223	0
B. Prime Contracts Over $25,000 Total	2,148,116	404,539	1,167,306	32,002	544,269
Supply and Equipment Contracts	1,530,370	8,128	977,419	2,283	542,540
RDT&E Contracts	5,824	2,995	1,393	1,331	105
Service Contracts	247,829	57,599	161,757	26,849	1,624
Construction Contracts	74,402	46,126	26,737	1,539	0
Civil Function Contracts	289,691	289,691	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
New Orleans	$1,355,949	$224,524	$1,131,425	Fort Polk	14,127	11,637	2,490
Fort Polk	529,252	432,050	97,202	Barksdale AFB	7,111	5,893	1,218
Baton Rouge	300,260	19,724	280,536	New Orleans	5,320	1,819	3,501
Bossier City	275,738	240,900	34,838	Belle Chasse	586	89	497
Lake Charles	122,010	13,056	108,954	Shreveport	421	389	32
Krotz Springs	116,562	214	116,348	Camp Beauregard	191	4	187
Shreveport	89,999	45,375	44,624	Baton Rouge	123	81	42
Alexandria	41,436	13,324	28,112	Bossier City	104	42	62
Port Allen	39,272	290	38,982	Pineville	104	103	1
Coushatta	38,735	1,725	37,010	Leesville	83	0	83

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$1,554,603	$421,452	$860,847	$33,243	$239,061
Fiscal Year 1992	1,204,078	473,329	432,737	47,485	250,527
Fiscal Year 1991	1,246,478	365,045	589,135	60,106	232,192

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. AVONDALE INDUSTRIES INC	$900,486	Miscellaneous Vessels	$480,392
2. EXXON CORPORATION	244,648	Liquid Propellants & Fuel, Petroleum Base	244,648
3. SALOMON INC	116,348	Liquid Propellants & Fuel, Petroleum Base	116,348
4. GOLD LINE REFINING LTD	96,981	Liquid Propellants & Fuel, Petroleum Base	96,981
5. SHORE MANAGEMENT INC	50,230	Vessel Freight	48,393
Total of Above	$1,408,693	(65.6% of total awards over $25,000)	

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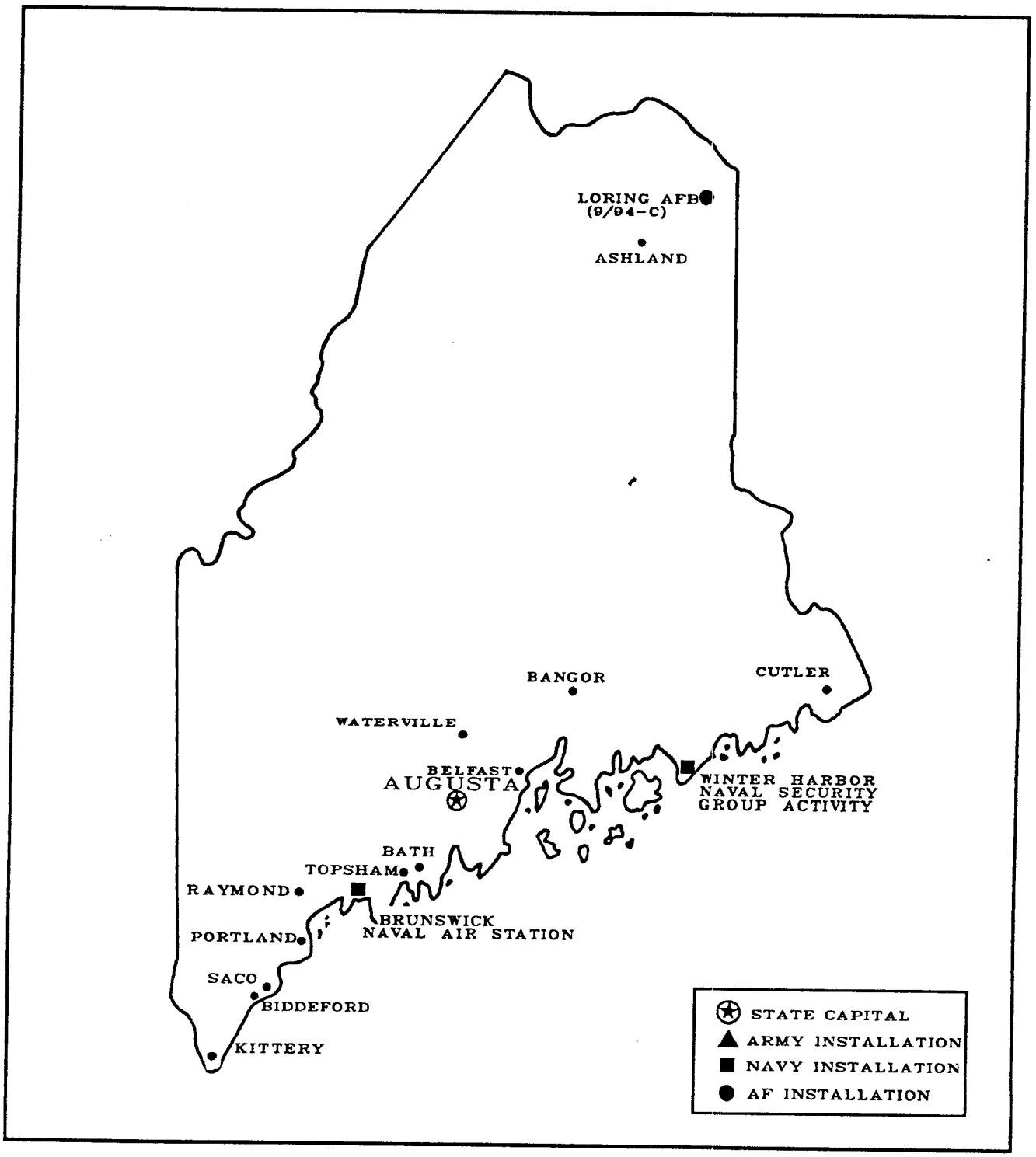
MAP NO. 20

MAINE



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Operations and Reports

MAINE

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	17,591	6,231	8,830	2,361	169
Active Duty Military	2,151	252	1,751	148	0
Civilian	5,971	290	5,165	347	169
Reserve & National Guard	9,469	5,689	1,914	1,866	0
II. Expenditures - Total	$1,508,987	$132,315	$1,213,463	$126,685	$36,524
A. Payroll Outlays - Total	584,443	82,377	398,761	98,374	4,931
Active Duty Military Pay	145,938	8,425	108,679	28,834	0
Civilian Pay	252,986	8,467	227,146	12,442	4,931
Reserve & National Guard Pay	41,033	31,670	1,874	7,489	0
Retired Military Pay	144,486	33,815	61,062	49,609	0
B. Prime Contracts Over $25,000 Total	924,544	49,938	814,702	28,311	31,593
Supply and Equipment Contracts	837,875	30,752	777,636	721	28,766
RDT&E Contracts	5,115	3,635	945	574	39-
Service Contracts	53,999	2,959	33,827	14,347	2,866
Construction Contracts	27,409	12,446	2,294	12,669	0
Civil Function Contracts	146	146	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Bath	$824,856	$23,956	$800,900	Kittery	4,447	122	4,325
Kittery	202,558	202,514	44	Brunswick	1,429	1,013	416
Brunswick	114,183	105,250	8,933	Winter Harbor	504	418	86
Loring AFB	53,035	28,471	24,564	Bangor	448	110	338
Bangor	45,789	28,019	17,770	Bath	332	59	273
Saco	32,287	2,008	30,279	Augusta	211	5	206
Belfast	22,231	1,576	20,655	Cutler	203	104	99
Augusta	18,102	18,041	61	Topsham	181	146	35
Winter Harbor	15,362	13,668	1,694	Loring AFB	101	5	96
Portland	8,687	7,164	1,523	Portland	53	21	32

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$1,109,861	$45,110	$1,031,412	$21,122	$12,217
Fiscal Year 1992	1,304,968	72,283	1,195,889	11,417	25,379
Fiscal Year 1991	1,065,372	67,357	959,649	15,259	23,107

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. FULCRUM II LIMITED PARTNERSHIP	$797,425	Destroyers	$774,348
2. DUCHOSSOIS INDUSTRIES INC	29,571	Guns, over 30 mm up to 75 mm	23,906
3. CREATIVE APPAREL ASSOCIATES	20,655	Clothing, Special Purpose	20,655
4. RAZEL USA INC	10,993	Other Airfield Structures	10,993
5. HENSEL PHELPS CONSTRUCTION CO	9,892	Pollution Abatement & Control Facilities	9,892
Total of Above	$868,536	(93.9% of total awards over $25,000)	

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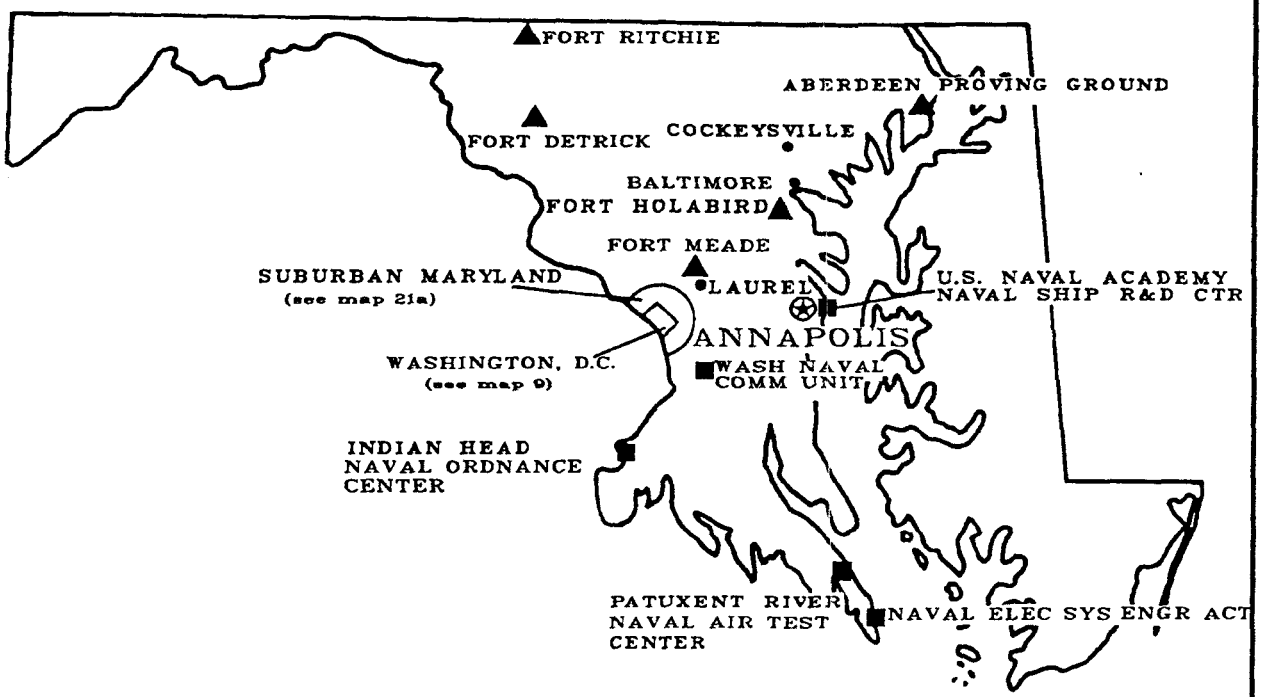
MAP NO. 21

MARYLAND



STATE CAPITAL
ARMY INSTALLATION
NAVY INSTALLATION
AF INSTALLATION

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MARYLAND

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	106,776	48,872	35,333	16,267	6,304
Active Duty Military	31,811	10,690	14,747	6,374	0
Civilian	37,475	14,596	14,243	2,332	6,304
Reserve & National Guard	37,490	23,586	6,343	7,561	0
II. Expenditures - Total	$7,564,066	$2,151,755	$3,370,224	$1,357,963	$684,124
A. Payroll Outlays - Total	3,307,925	1,243,390	1,312,077	506,581	245,877
Active Duty Military Pay	941,705	356,570	395,629	189,506	0
Civilian Pay	1,532,608	516,328	667,572	102,831	245,877
Reserve & National Guard Pay	129,195	77,188	21,741	30,266	0
Retired Military Pay	704,417	293,304	227,135	183,978	0
B. Prime Contracts Over $25,000 Total	4,256,141	908,365	2,058,147	851,382	438,247
Supply and Equipment Contracts	1,084,747	170,163	377,672	431,457	105,455
RDT&E Contracts	913,546	100,969	660,055	124,558	27,964
Service Contracts	1,914,383	368,787	951,961	288,843	304,792
Construction Contracts	280,592	205,573	68,459	6,524	36
Civil Function Contracts	62,873	62,873	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Baltimore	$705,004	$108,566	$596,438	Aberdeen Prov Grnd	11,889	4,278	7,611
Aberdeen Prov Grnd	663,060	416,778	246,282	Annapolis	8,180	5,575	2,605
Bethesda	656,556	289,336	367,220	Fort Meade	8,115	5,256	2,859
Laurel	460,619	14,843	445,776	Andrews AFB	7,861	5,721	2,140
Annapolis	409,948	233,864	176,084	Bethesda	6,757	4,308	2,449
Rockville	388,645	23,406	365,239	Patuxent River NATC	5,820	2,569	3,251
Patuxent River NATC	362,969	226,624	136,345	Indian Head	2,883	486	2,397
Fort Meade	350,041	298,601	51,440	Brookmont	2,573	8	2,565
Andrews AFB	347,035	279,344	67,691	Fort Detrick	2,198	924	1,274
Gaithersburg	248,150	10,696	237,454	Baltimore	1,953	293	1,660

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$3,992,356	$697,518	$1,875,179	$1,060,292	$359,367
Fiscal Year 1992	4,050,284	661,607	2,224,458	795,644	368,565
Fiscal Year 1991	4,128,541	753,129	1,801,705	1,162,852	410,855

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. WESTINGHOUSE ELECTRIC CORP	$568,028	Radar Equipment, Airborne	$246,729
2. JOHNS HOPKINS UNIVERSITY	442,281	RDTE/Weapons-Engineering Development	440,293
3. TRACOR INC	198,862	Engineering Technical Services	76,267
4. INTERNATIONAL BUS MCHS CORP	187,095	Modification of Eq/Communication Equipment	125,606
5. MARTIN MARIETTA CORPORATION	151,637	Launchers, Guided Missile	80,126
Total of Above	$1,547,903	(36.4% of total awards over $25,000)	

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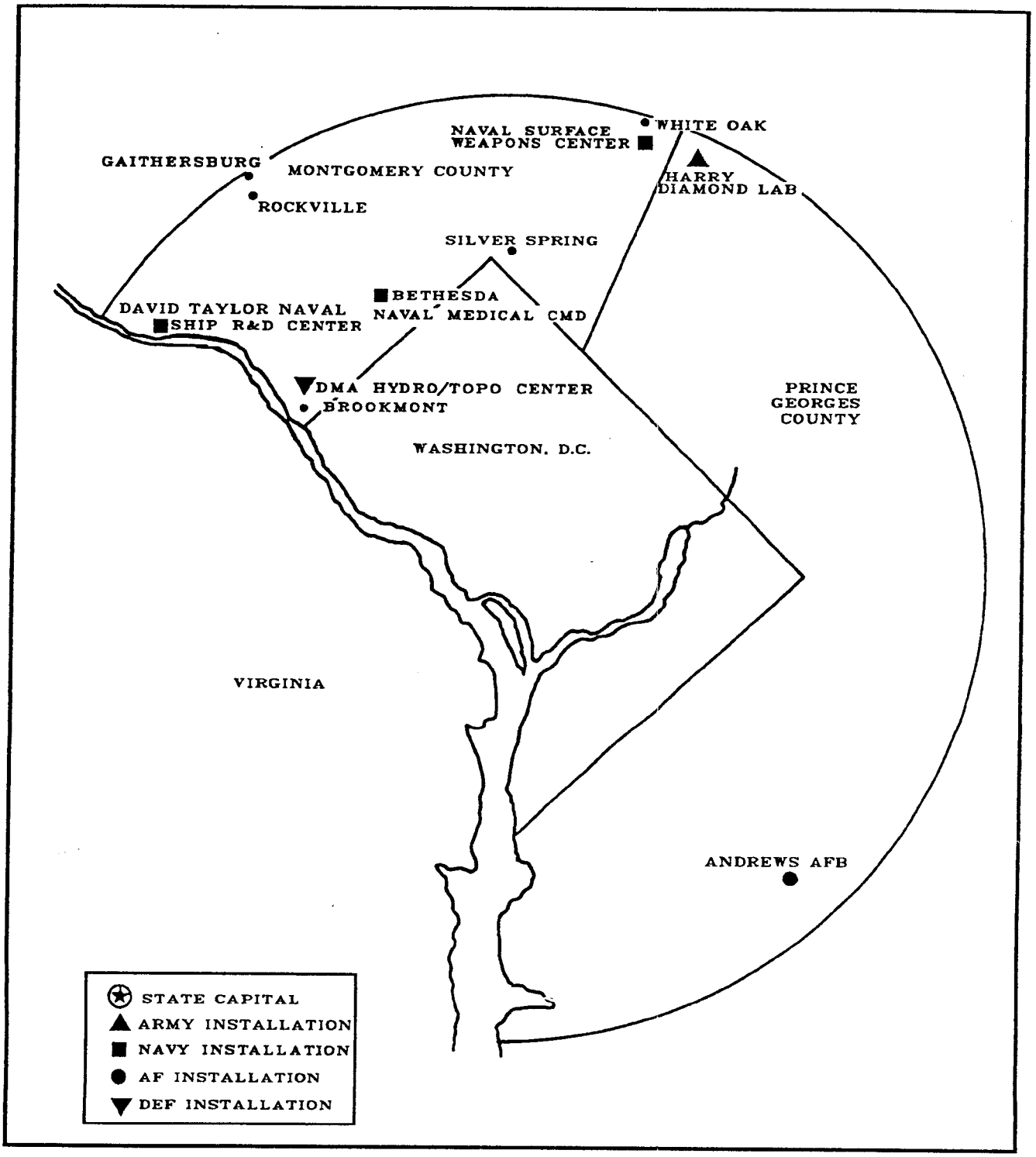
MAP NO. 21a

SUBURBAN MARYLAND



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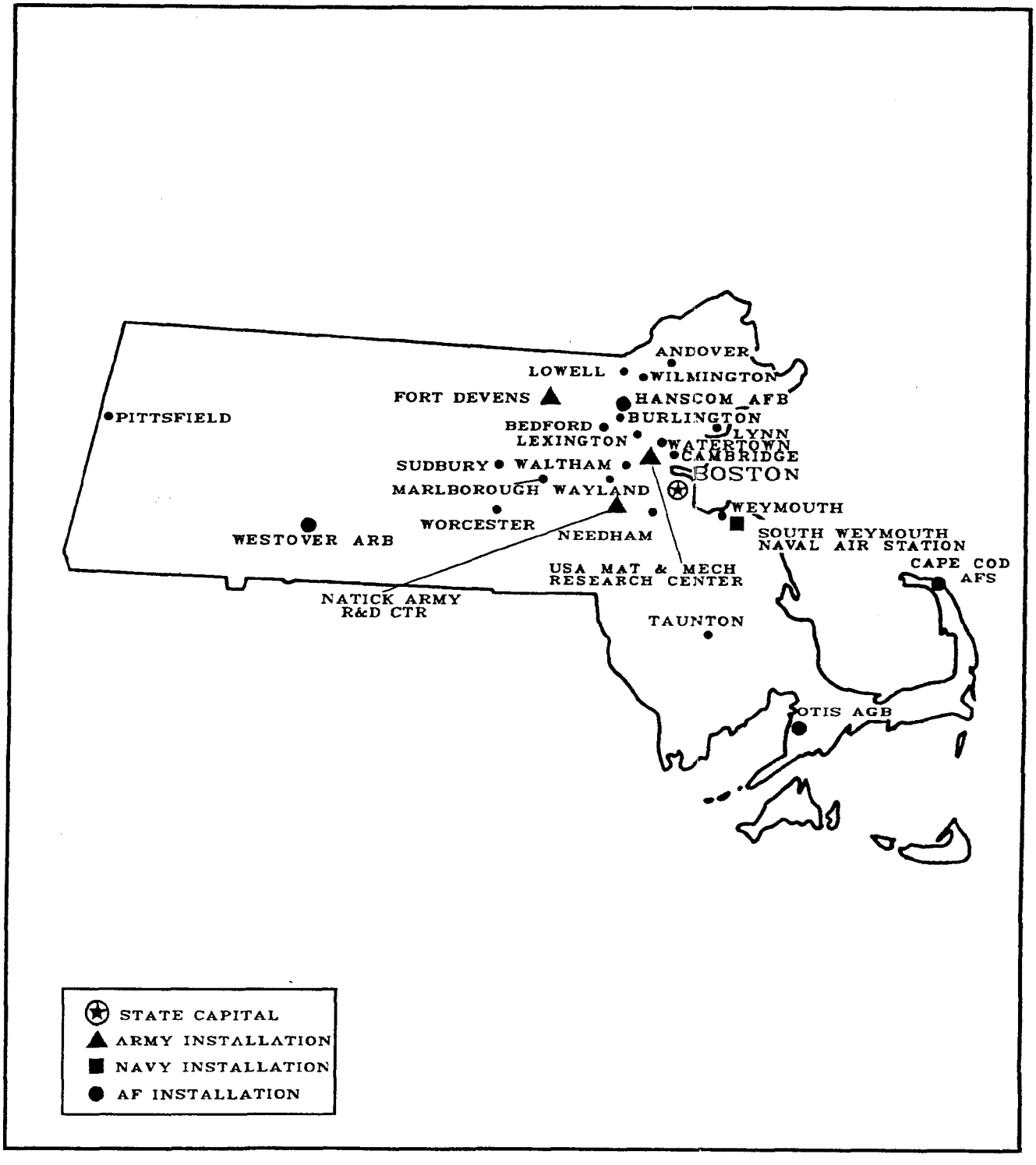
MAP NO. 22

MASSACHUSETTS



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MASSACHUSETTS

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	50,396	27,524	8,147	12,955	1,770
Active Duty Military	6,126	3,262	537	2,227	0
Civilian	9,901	3,425	703	4,003	1,770
Reserve & National Guard	34,369	20,837	6,807	6,725	0
II. Expenditures - Total	$6,187,312	$2,207,986	$1,826,459	$1,895,013	$257,854
A. Payroll Outlays - Total	1,081,451	465,216	151,699	387,503	77,033
Active Duty Military Pay	242,331	144,406	23,028	74,897	0
Civilian Pay	435,408	139,452	27,999	190,924	77,033
Reserve & National Guard Pay	131,596	88,057	12,907	30,632	0
Retired Military Pay	272,116	93,301	87,765	91,050	0
B. Prime Contracts Over $25,000 Total	5,105,861	1,742,770	1,674,760	1,507,510	180,821
Supply and Equipment Contracts	2,243,971	871,504	781,202	515,240	76,025
RDT&E Contracts	1,922,045	418,918	639,395	762,629	101,103
Service Contracts	871,254	396,064	251,790	219,770	3,630
Construction Contracts	33,526	21,219	2,373	9,871	63
Civil Function Contracts	35,065	35,065	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Bedford	$729,575	$0	$729,575	Hanscom AFB	3,917	1,787	2,130
Lynn	707,821	8,674	699,147	Fort Devens	3,855	2,776	1,079
Andover	465,695	3,636	462,059	Boston	1,540	462	1,078
Wayland	377,829	2,166	375,663	Natick	1,213	158	1,055
Lexington	369,569	0	369,569	Westover ARB	1,007	8	999
Lowell	335,496	4,032	331,464	Waltham	539	1	538
Cambridge	296,069	8,947	287,122	Otis AGB	538	142	396
Hanscom AFB	232,961	171,431	61,530	Weymouth	397	146	251
Pittsfield	207,673	7,656	200,017	Watertown	380	10	370
Marlborough	206,197	2,068	204,129	Burlington	374	4	370

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$5,935,650	$2,127,833	$1,761,937	$1,741,122	$304,758
Fiscal Year 1992	5,686,386	1,532,512	1,970,163	1,902,882	280,829
Fiscal Year 1991	6,933,473	2,687,372	1,939,277	2,035,133	271,691

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. RAYTHEON COMPANY	$1,904,927	Guided Missiles	$457,777
2. GENERAL ELECTRIC COMPANY	875,589	Gas Turbines and Jet Engines, Acft & Comps	419,552
3. MASSACHUSETTS INST OF TECH	318,409	RDTE/Other Research & Development-Advanced	294,947
4. GTE CORPORATION	254,237	Miscellaneous Communication Equipment	56,232
5. MITRE CORPORATION	228,600	RDTE/Other Research & Development-Engr Dev	228,600
Total of Above	$3,581,762	(70.2% of total awards over $25,000)	

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MAP NO. 23

MICHIGAN

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MICHIGAN

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	59,574	34,715	11,745	11,321	1,793
Active Duty Military	3,751	661	437	2,653	0
Civilian	9,817	5,833	56	2,135	1,793
Reserve & National Guard	46,006	28,221	11,252	6,533	0
II. Expenditures - Total	$2,479,672	$1,543,336	$203,780	$531,215	$201,341
A. Payroll Outlays - Total	877,952	441,487	101,292	265,178	69,995
Active Duty Military Pay	110,585	24,736	13,733	72,116	0
Civilian Pay	353,082	205,552	2,419	75,116	69,995
Reserve & National Guard Pay	130,084	103,143	10,194	16,747	0
Retired Military Pay	284,201	108,056	74,946	101,199	0
B. Prime Contracts Over $25,000 Total	1,601,720	1,101,849	102,488	266,037	131,346
Supply and Equipment Contracts	1,172,718	814,124	80,653	158,007	119,934
RDT&E Contracts	147,999	96,614	18,405	30,552	2,428
Service Contracts	242,749	153,121	3,430	77,246	8,952
Construction Contracts	4,835	4,571	0	232	32
Civil Function Contracts	33,419	33,419	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Sterling Heights	$703,765	$6,312	$697,453	Warren	4,554	7	4,547
Warren	234,585	164,219	70,366	K. I. Sawyer AFB	2,860	2,236	624
St. Joseph	134,491	1,394	133,097	Battle Creek	1,752	89	1,663
Troy	96,862	2,354	94,508	Selfridge AGB	1,334	216	1,118
Selfridge AGB	93,836	84,403	9,433	Detroit	1,084	561	523
Battle Creek	91,862	56,852	35,010	Lansing	296	23	273
K. I. Sawyer AFB	89,788	78,917	10,871	Sault Ste. Marie	165	4	161
Grand Rapids	84,750	14,657	70,093	Grand Rapids	115	22	93
Detroit	76,123	45,912	30,211	Grand Ledge	111	36	75
Ann Arbor	58,585	7,503	51,082	Grayling	100	0	100

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$1,335,901	$763,222	$108,133	$305,658	$158,888
Fiscal Year 1992	1,568,117	1,139,477	133,260	179,417	115,963
Fiscal Year 1991	1,336,716	846,832	140,504	224,544	124,836

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. GENERAL DYNAMICS CORPORATION	$833,785	Combat Assault & Tactical Veh, Tracked	$622,752
2. ZENITH ELECTRONICS CORPORATION	137,738	ADPE Configuration	60,599
3. SMITHS INDUSTRIES PLC	37,743	RDTE/Electronics & Communication Eq-Engr D	14,016
4. AMERICAN INTERNATIONAL AIRWAYS	34,124	Air Charter for Things	33,958
5. AAR CORP	34,031	Maint & Repair of Eq/Aircraft Comps & Accy	18,096
Total of Above	$1,077,421	(67.3% of total awards over $25,000)	

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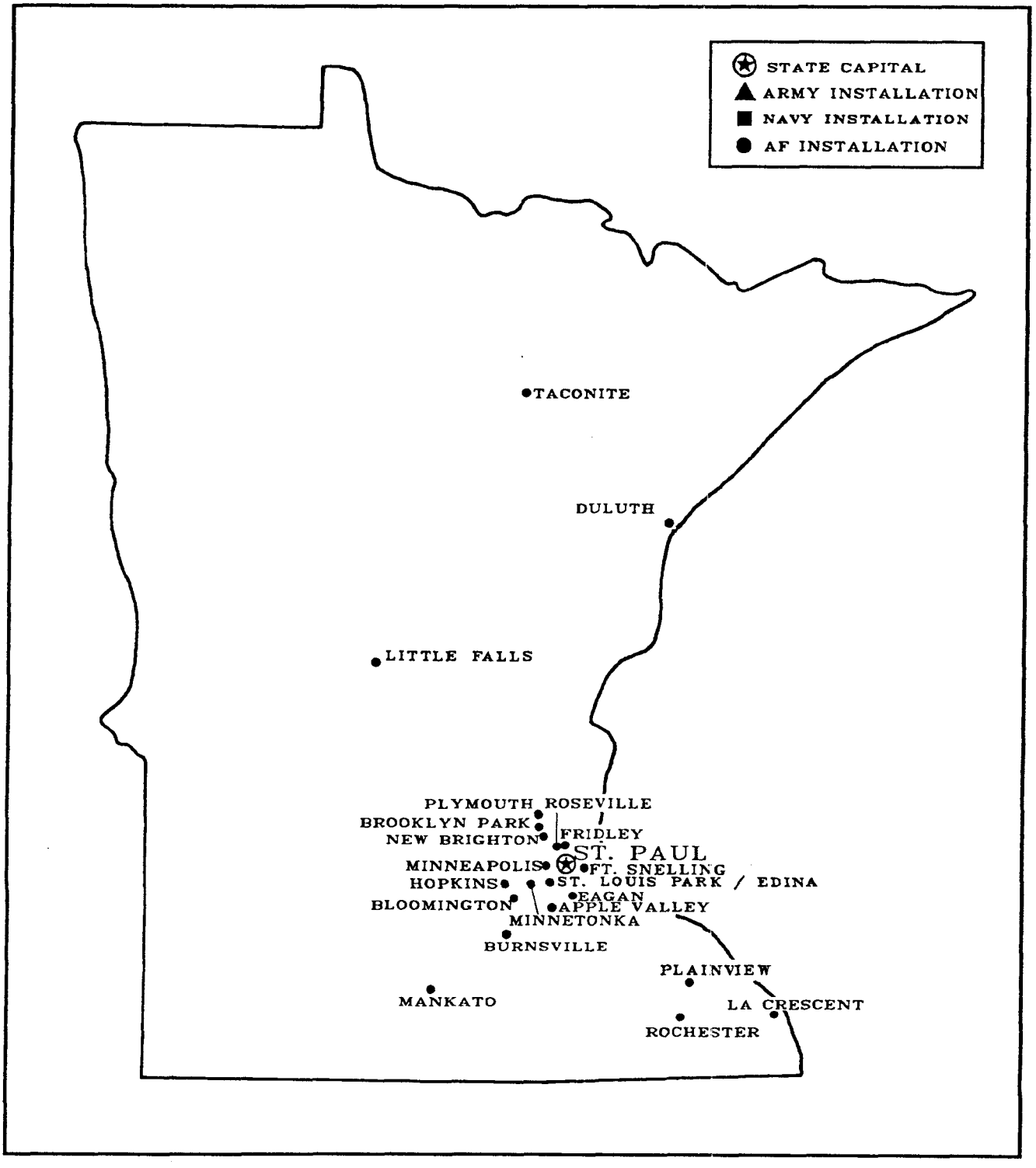
MAP NO. 24

MINNESOTA



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MINNESOTA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	36,135	23,532	6,128	6,029	446
Active Duty Military	939	352	319	268	0
Civilian	2,714	1,423	28	817	446
Reserve & National Guard	32,482	21,757	5,781	4,944	0
II. Expenditures - Total	$1,539,268	$708,337	$431,300	$218,124	$181,507
A. Payroll Outlays - Total	402,742	190,562	71,337	121,294	19,549
Active Duty Military Pay	32,622	13,517	9,625	9,480	0
Civilian Pay	96,187	45,704	1,066	29,868	19,549
Reserve & National Guard Pay	104,869	73,335	9,453	22,081	0
Retired Military Pay	169,064	58,006	51,193	59,865	0
B. Prime Contracts Over $25,000 Total	1,136,526	517,775	359,963	96,830	161,958
Supply and Equipment Contracts	800,309	358,144	266,044	41,008	135,113
RDT&E Contracts	145,760	71,519	14,483	37,709	22,049
Service Contracts	125,075	22,730	79,436	18,113	4,796
Construction Contracts	0	0	0	0	0
Civil Function Contracts	65,382	65,382	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Minneapolis	$358,942	$77,756	$281,186	Minneapolis	890	386	504
St. Paul	207,800	54,086	153,714	St. Paul	798	55	743
Brooklyn Park	171,249	2,088	169,161	Duluth	422	121	301
Hopkins	157,814	4,306	153,508	Camp Ripley	358	0	358
Bloomington	128,835	6,968	121,867	Ft Snelling Mil Res	325	183	142
Duluth	36,096	29,296	6,800	Bloomington	148	3	145
Edina	35,077	809	34,268	Fridley	60	2	58
Rochester	30,580	6,079	24,501	New Brighton	58	0	58
Pine Bend	30,424	0	30,424	Rochester	37	22	15
Arden Hills	27,836	0	27,836	Hopkins	33	0	33

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$1,497,124	$576,297	$637,701	$126,046	$157,080
Fiscal Year 1992	1,495,588	688,928	532,010	140,561	134,089
Fiscal Year 1991	1,779,751	855,607	567,261	166,106	190,777

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. GILES ALEXANDER	$220,140	Bombs	$98,148
2. ALLIANT TECHSYSTEMS INC	166,600	Ammunition, 75 mm through 125 mm	61,836
3. UNISYS CORPORATION	122,351	Electronic Modules	44,937
4. CERIDIAN CORPORATION	115,210	Miscellaneous Communication Equipment	75,209
5. FMC CORPORATION	113,110	Launchers, Guided Missile	29,190
Total of Above	$737,411	(64.9% of total awards over $25,000)	

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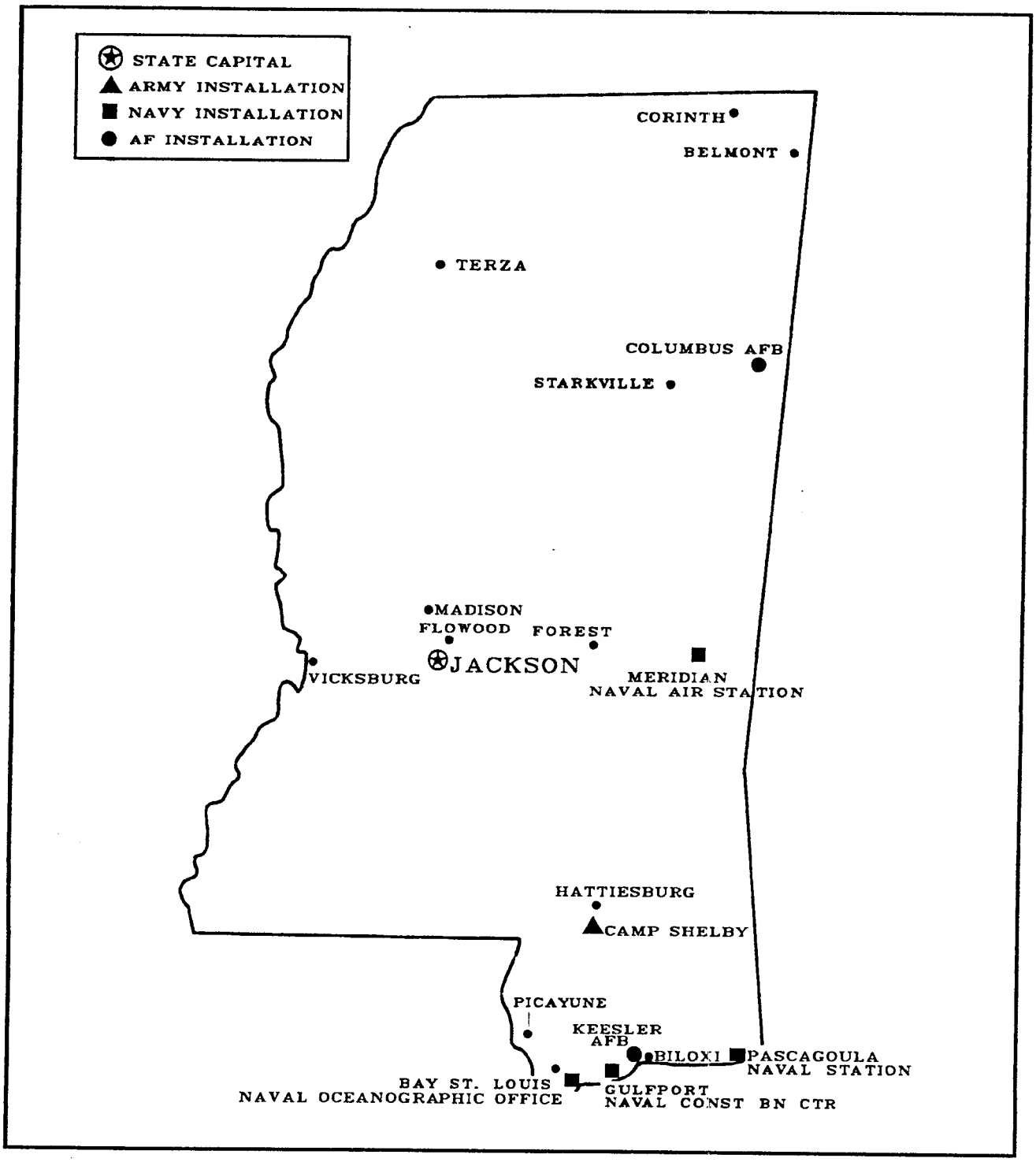
MAP NO. 25

MISSISSIPPI



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MISSISSIPPI

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	51,283	24,692	8,742	17,383	466
Active Duty Military	12,648	432	3,083	9,133	0
Civilian	10,881	4,511	2,810	3,094	466
Reserve & National Guard	27,754	19,749	2,849	5,156	0
II. Expenditures - Total	$3,101,375	$563,217	$1,820,939	$581,518	$135,701
A. Payroll Outlays - Total	1,246,254	341,386	419,737	471,178	13,953
Active Duty Military Pay	444,683	16,173	217,152	211,358	0
Civilian Pay	385,165	162,356	116,731	92,125	13,953
Reserve & National Guard Pay	113,715	86,365	2,046	25,304	0
Retired Military Pay	302,691	76,492	83,808	142,391	0
B. Prime Contracts Over $25,000 Total	1,855,121	221,831	1,401,202	110,340	121,748
Supply and Equipment Contracts	1,395,771	7,200	1,262,441	6,415	119,715
RDT&E Contracts	18,000	3,307	13,776	917	0
Service Contracts	326,760	104,478	117,400	102,849	2,033
Construction Contracts	16,160	8,416	7,585	159	0
Civil Function Contracts	98,430	98,430	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Pascagoula	$1,324,136	$106,549	$1,217,587	Keesler AFB	9,862	7,466	2,396
Biloxi	343,905	290,841	53,064	Vicksburg	3,065	69	2,996
Gulfport	240,798	146,103	94,695	Meridian	2,342	1,690	652
Madison	151,778	1,865	149,913	Columbus AFB	1,795	1,377	418
Vicksburg	150,496	121,921	28,575	Gulfport	1,600	839	761
Meridian	101,447	87,602	13,845	Bay St. Louis	1,399	84	1,315
Columbus AFB	86,032	46,804	39,228	Pascagoula	1,007	396	611
Bay St. Louis	76,289	74,864	1,425	Jackson	415	181	234
Jackson	53,452	38,402	15,050	Flowood	356	0	356
Terza	42,434	0	42,434	Biloxi	303	268	35

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$1,575,387	$254,365	$1,000,151	$116,783	$204,088
Fiscal Year 1992	2,566,969	295,282	2,062,956	103,875	104,856
Fiscal Year 1991	1,792,342	247,054	1,304,972	108,981	131,335

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. LITTON INDUSTRIES INC	$1,189,519	Amphibious Assault Ships	$744,485
2. RAYTHEON COMPANY	166,686	Maint & Repair of Eq/Miscellaneous Equipme	95,798
3. TRINITY INDUSTRIES INC	80,281	Special Service Vessels	79,130
4. GENERAL MOTORS CORPORATION	39,870	Torpedo Inert Components	39,870
5. BARRETT REFINING CORPORATION	38,358	Liquid Propellants & Fuel, Petroleum Base	36,489
Total of Above	$1,514,714	(81.7% of total awards over $25,000)	

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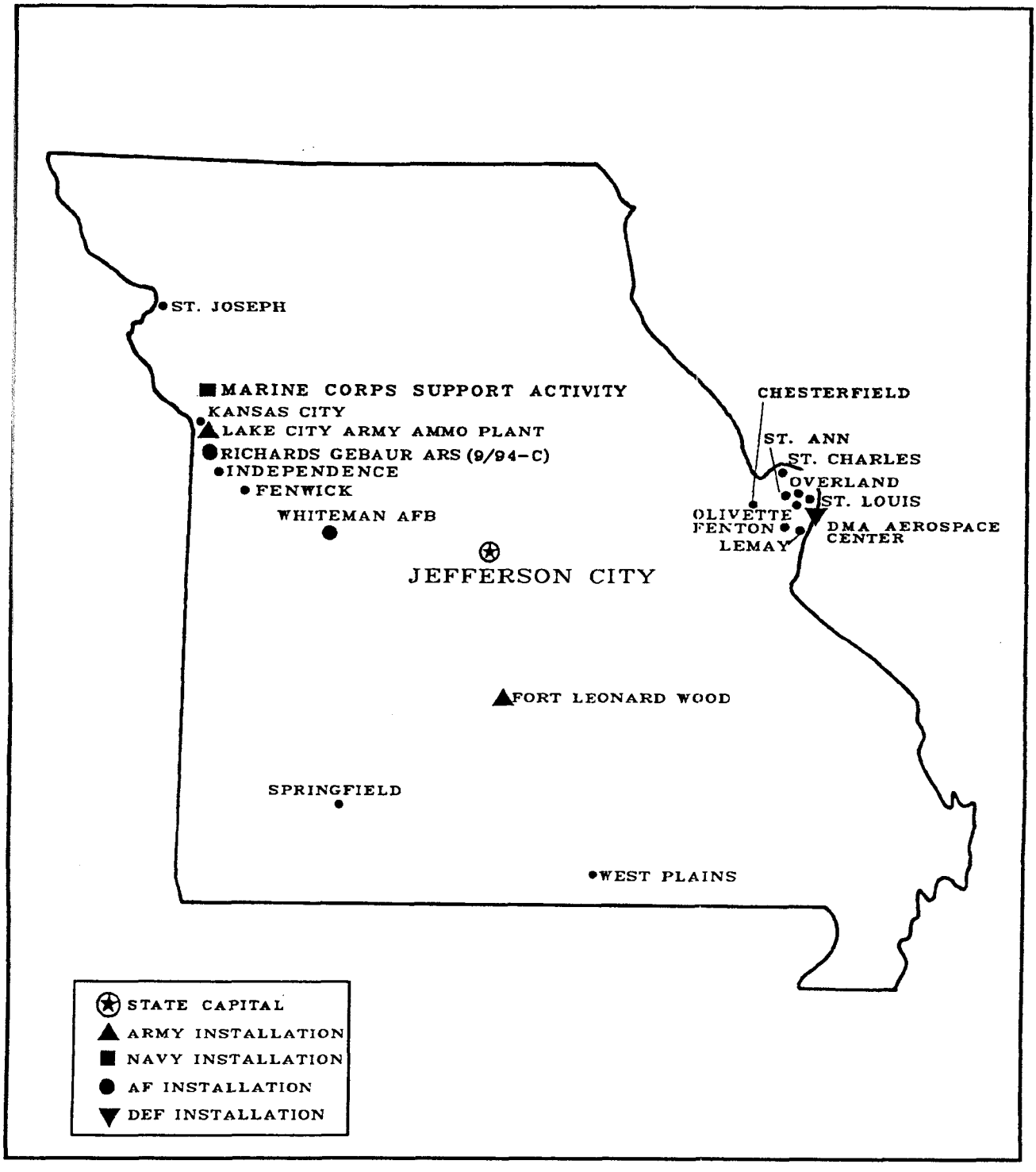
MAP NO. 26

MISSOURI



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MISSOURI

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	73,711	46,085	11,027	10,970	5,629
Active Duty Military	15,313	10,549	685	4,079	0
Civilian	16,638	9,619	162	1,228	5,629
Reserve & National Guard	41,760	25,917	10,180	5,663	0
II. Expenditures - Total	$7,712,914	$1,397,245	$4,004,179	$2,005,610	$305,880
A. Payroll Outlays - Total	1,566,304	879,155	140,418	320,996	225,735
Active Duty Military Pay	460,365	338,480	22,285	99,600	0
Civilian Pay	551,371	273,367	5,480	46,789	225,735
Reserve & National Guard Pay	137,164	105,121	8,298	23,745	0
Retired Military Pay	417,404	162,187	104,355	150,862	0
B. Prime Contracts Over $25,000 Total	6,146,610	518,090	3,863,761	1,684,614	80,145
Supply and Equipment Contracts	3,895,633	79,863	2,401,970	1,369,364	44,436
RDT&E Contracts	1,365,768	49,839	1,186,622	102,013	27,294
Service Contracts	702,272	217,479	275,339	201,039	8,415
Construction Contracts	85,956	73,928	170-	12,198	0
Civil Function Contracts	96,981	96,981	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
St. Louis	$6,086,503	$390,894	$5,695,609	Fort Leonard Wood	10,541	8,895	1,646
Fort Leonard Wood	376,582	313,281	63,301	St. Louis	9,881	783	9,098
Whiteman AFB	173,705	111,656	62,049	Whiteman AFB	4,473	3,741	732
Kansas City	138,557	107,983	30,574	Kansas City	2,360	633	1,727
Lake City AAP	103,723	0	103,723	Overland	1,596	2	1,594
Overland	47,931	47,931	0	Jefferson City	397	288	109
Springfield	36,752	33,334	3,418	St. Ann	298	0	298
West Plains	34,461	2,974	31,487	St. Joseph	203	8	195
Jefferson City	30,634	28,859	1,775	Lemay	181	32	149
Chesterfield	21,995	5,983	16,012	Springfield	172	91	81

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$5,605,884	$617,861	$3,560,002	$1,347,247	$80,774
Fiscal Year 1992	3,714,105	728,965	2,653,496	267,204	64,440
Fiscal Year 1991	6,298,111	758,164	3,688,878	1,759,280	91,789

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. MCDONNELL DOUGLAS CORPORATION	$5,384,833	Aircraft Fixed Wing	$3,191,906
2. OLIN CORPORATION	95,292	Operation/Ammunition Facilities	95,292
3. ESCO ELECTRONICS CORPORATION	78,123	Trailers	31,487
4. LIGHT HELICPTR TURBINE ENG CO	47,718	RDTE/Aircraft-Engineering Development	47,718
5. ENGINEERED SUPPORT SYSTEMS	47,117	Aircraft Ground Servicing Equipment	16,319
Total of Above	$5,653,083	(92.0% of total awards over $25,000)	

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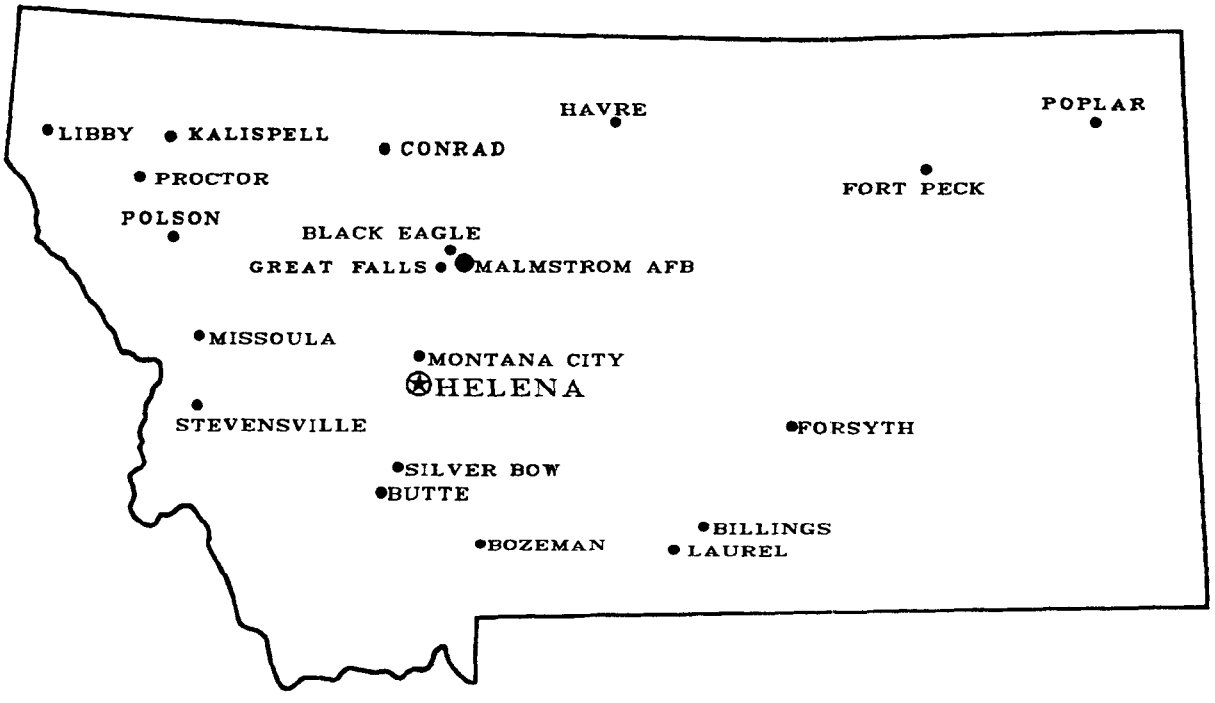
MAP NO. 27

MONTANA



STATE CAPITAL
ARMY INSTALLATION
NAVY INSTALLATION
AF INSTALLATION

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MONTANA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	14,566	6,074	1,417	7,004	71
Active Duty Military	4,629	28	18	4,583	0
Civilian	1,072	283	2	716	71
Reserve & National Guard	8,865	5,763	1,397	1,705	0
II. Expenditures - Total	$321,312	$80,943	$25,580	$198,488	$16,301
A. Payroll Outlays - Total	257,894	54,271	25,081	176,592	1,950
Active Duty Military Pay	105,681	1,070	592	104,019	0
Civilian Pay	35,525	9,270	70	24,235	1,950
Reserve & National Guard Pay	29,881	21,919	1,615	6,347	0
Retired Military Pay	86,807	22,012	22,804	41,991	0
B. Prime Contracts Over $25,000 Total	63,418	26,672	499	21,896	14,351
Supply and Equipment Contracts	21,152	4,816	179	2,459	13,698
RDT&E Contracts	470	100	320	50	0
Service Contracts	23,600	4,590	0	18,357	653
Construction Contracts	13,791	12,761	0	1,030	0
Civil Function Contracts	4,405	4,405	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Malmstrom AFB	$143,715	$117,236	$26,479	Malmstrom AFB	4,898	4,428	470
Great Falls	53,416	38,336	15,080	Great Falls	367	71	296
Helena	22,611	20,706	1,905	Helena	263	5	258
Billings	9,918	8,648	1,270	Forsyth	68	63	5
Missoula	8,840	6,649	2,191	Butte	45	42	3
Bozeman	6,859	6,117	742	Billings	17	12	5
Kalispell	5,501	4,510	991	Bozeman	14	6	8
Polson	5,225	1,126	4,099	Missoula	7	2	5
Butte-Silver Bow	4,027	3,710	317	Kalispell	6	0	6
Libby	2,973	1,360	1,613	Chinook	5	0	5

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$79,195	$19,519	$705	$28,692	$30,279
Fiscal Year 1992	56,068	15,848	2,908	22,375	14,937
Fiscal Year 1991	82,340	38,276	1,325	25,352	17,387

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. GLW ENTERPRISES INC	$8,793	Liquid Propellants & Fuel, Petroleum Base	$8,793
2. TRUCHOT CONSTRUCTION CO INC	5,222	Office Buildings	5,222
3. TECHNICAL & MGT SVCS CORP	4,099	Antennas, Waveguides & Related Equipment	4,453
4. MORGEN & OSWOOD CNSTR CO	2,954	Other Administrative & Service Buildings	2,920
5. MONTANA POWER COMPANY INC	2,768	Electric Services	2,768
Total of Above	$23,836	(37.6% of total awards over $25,000)	

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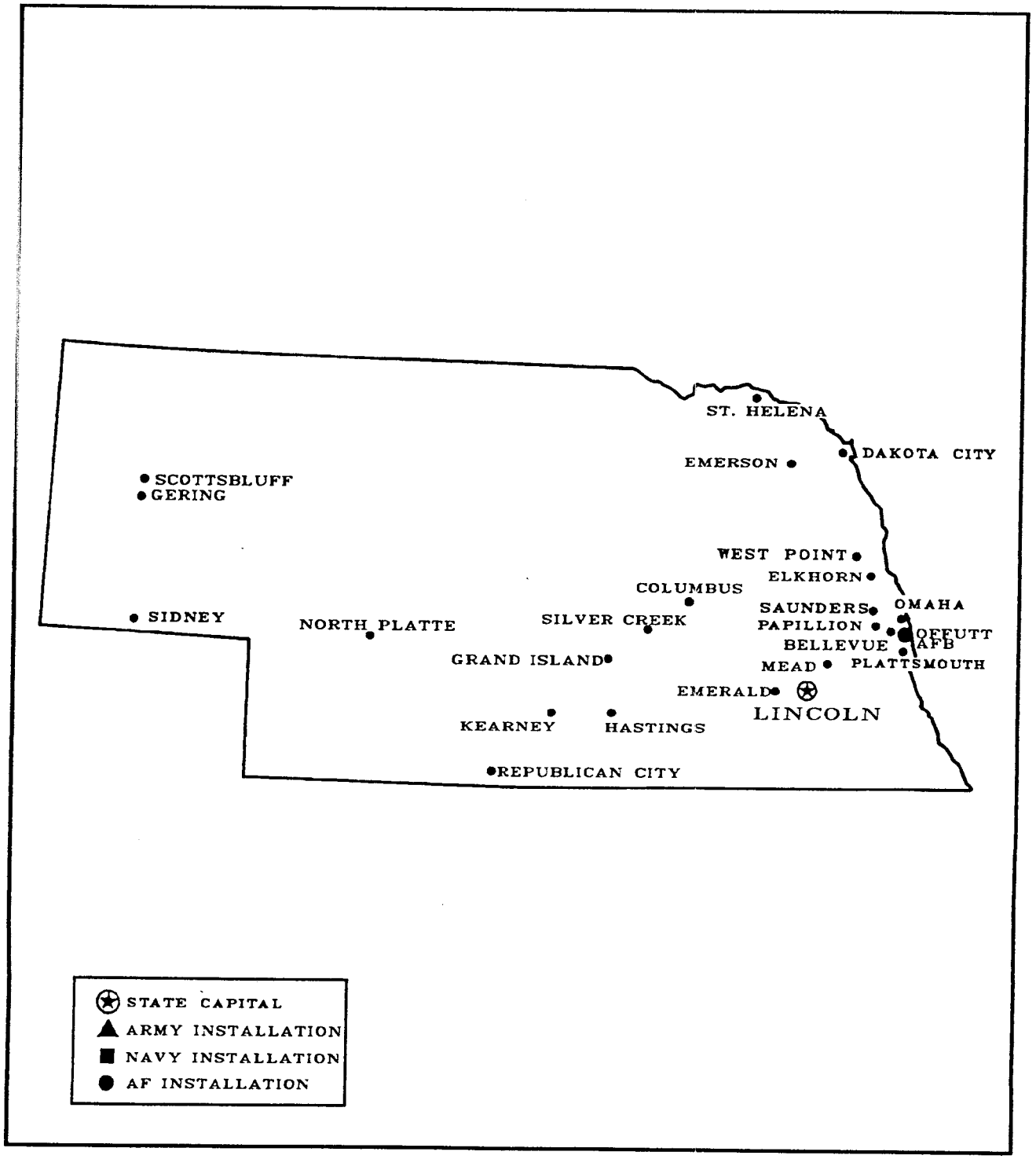
MAP NO. 28

NEBRASKA



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NEBRASKA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	26,874	10,655	2,753	13,293	173
Active Duty Military	9,670	79	518	9,073	0
Civilian	3,634	1,860	37	1,564	173
Reserve & National Guard	13,570	8,716	2,198	2,656	0
II. Expenditures - Total	$922,280	$201,620	$49,209	$587,227	$84,224
A. Payroll Outlays - Total	612,341	126,873	48,474	432,358	4,636
Active Duty Military Pay	273,193	2,905	20,172	250,116	0
Civilian Pay	124,217	66,679	1,115	51,787	4,636
Reserve & National Guard Pay	40,034	30,901	2,260	6,873	0
Retired Military Pay	174,897	26,388	24,927	123,582	0
B. Prime Contracts Over $25,000 Total	309,939	74,747	735	154,869	79,588
Supply and Equipment Contracts	109,933	8,478	339	24,722	76,394
RDT&E Contracts	7,038	242	29	6,618	149
Service Contracts	157,566	30,625	367	123,529	3,045
Construction Contracts	22,359	22,359	0	0	0
Civil Function Contracts	13,043	13,043	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Offutt AFB	$406,016	$294,221	$111,795	Offutt AFB	10,353	8,879	1,474
Omaha	231,307	157,455	73,852	Omaha	1,975	499	1,476
Bellevue	80,897	34,850	46,047	Lincoln	623	128	495
Lincoln	68,937	43,301	25,636	Elkhorn	59	57	2
Dakota City	28,798	84	28,714	St. Helena	52	0	52
Hastings	6,589	3,012	3,577	Bellevue	27	26	1
Saunders	4,035	0	4,035	Kearney	22	13	9
Cornhusker AAP	3,290	0	3,290	North Platte	20	10	10
Columbus	3,212	1,591	1,621	Fremont	19	15	4
Fremont	3,161	3,113	48	Mead	19	0	19

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$302,064	$71,003	$1,732	$159,079	$70,250
Fiscal Year 1992	296,584	58,716	7,500	169,750	60,618
Fiscal Year 1991	253,020	29,826	3,399	167,724	52,080

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. GENERAL DYNAMICS CORPORATION	$26,832	Systems Engineering Services	$10,229
2. IBP INC	26,529	Meat, Poultry and Fish	16,447
3. STERLING SOFTWARE INC	23,437	Automated Info System Design & Integration	13,557
4. AKSARBEN FOODS, INC.	19,112	Meat, Poultry and Fish	19,112
5. GTE CORPORATION	14,501	Maint & Repair of Eq/ADP Equip & Supplies	14,352
Total of Above	$110,411	(35.6% of total awards over $25,000)	

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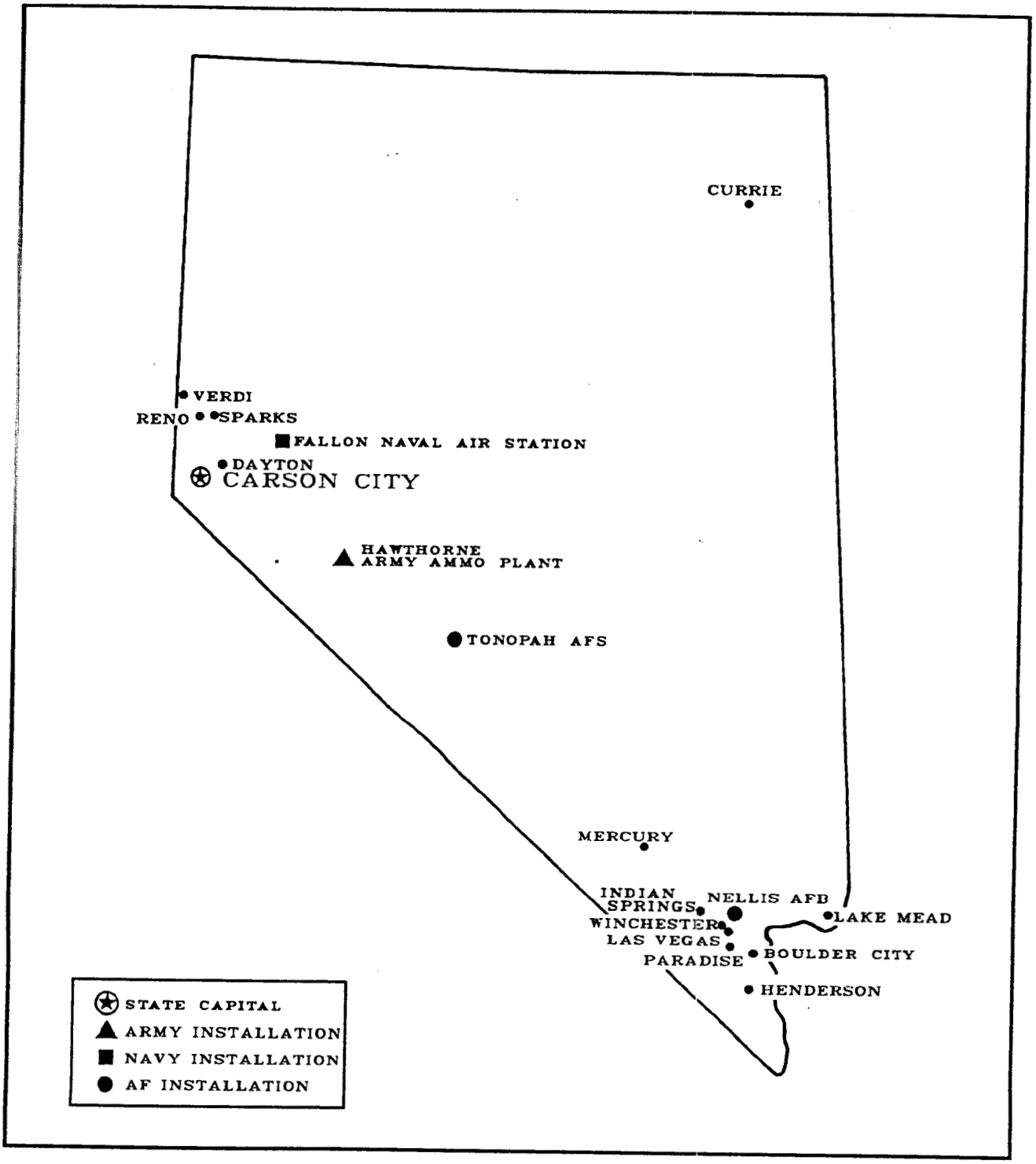
MAP NO. 29

NEVADA



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NEVADA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	18,945	4,008	3,356	11,393	188
Active Duty Military	8,648	14	1,118	7,516	0
Civilian	2,179	233	385	1,373	188
Reserve & National Guard	8,118	3,761	1,853	2,504	0
II. Expenditures - Total	$916,788	$154,953	$231,904	$509,683	$20,248
A. Payroll Outlays - Total	642,717	84,617	134,092	418,356	5,652
Active Duty Military Pay	220,458	505	31,603	188,350	0
Civilian Pay	69,486	7,003	12,178	44,653	5,652
Reserve & National Guard Pay	20,808	13,430	1,385	5,993	0
Retired Military Pay	331,965	63,679	88,926	179,360	0
B. Prime Contracts Over $25,000 Total	274,071	70,336	97,812	91,327	14,596
Supply and Equipment Contracts	49,356	1,284	12,556	23,202	12,314
RDT&E Contracts	4,632	1,745	1,335	752	800
Service Contracts	143,247	31,724	45,534	64,507	1,482
Construction Contracts	72,719	31,466	38,387	2,866	0
Civil Function Contracts	4,117	4,117	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Nellis AFB	$309,692	$216,266	$93,426	Nellis AFB	8,410	7,328	1,082
Las Vegas	193,628	178,619	15,009	Fallon	1,473	1,089	384
Fallon	134,140	51,861	82,279	Reno	406	88	318
Reno	41,206	38,448	2,758	Las Vegas	145	20	125
Sparks	37,101	11,586	25,515	Indian Springs	142	94	48
Hawthorne AAP	34,584	0	34,584	Carson City	126	7	119
Carson City	25,055	21,465	3,590	Hawthorne	67	2	65
Henderson	24,120	23,878	242	Mercury	19	1	18
Winchester	10,221	10,221	0	Winchester	14	14	0
Boulder City	7,053	6,405	648	Henderson	13	0	13

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$235,849	$74,008	$53,759	$97,936	$10,146
Fiscal Year 1992	243,308	63,560	64,531	103,684	11,533
Fiscal Year 1991	249,598	100,131	37,477	97,918	14,072

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. LORAL CORPORATION	$43,480	Operation/Electronic & Communication Facil	$42,384
2. KAPLA S BARBARA GREENHOUSE	27,348	Operation/Ammunition Facilities	27,348
3. SIERRA NEVADA CORPORATION	19,266	Miscellaneous Communication Equipment	15,858
4. INTERMOUNTAIN CONSTRUCTION CO	16,948	Other Airfield Structures	11,472
5. ACTUS CORP/SUNDT, JT VENTURE	16,100	Family Housing Facilities	16,100
Total of Above	$123,142	(44.9% of total awards over $25,000)	

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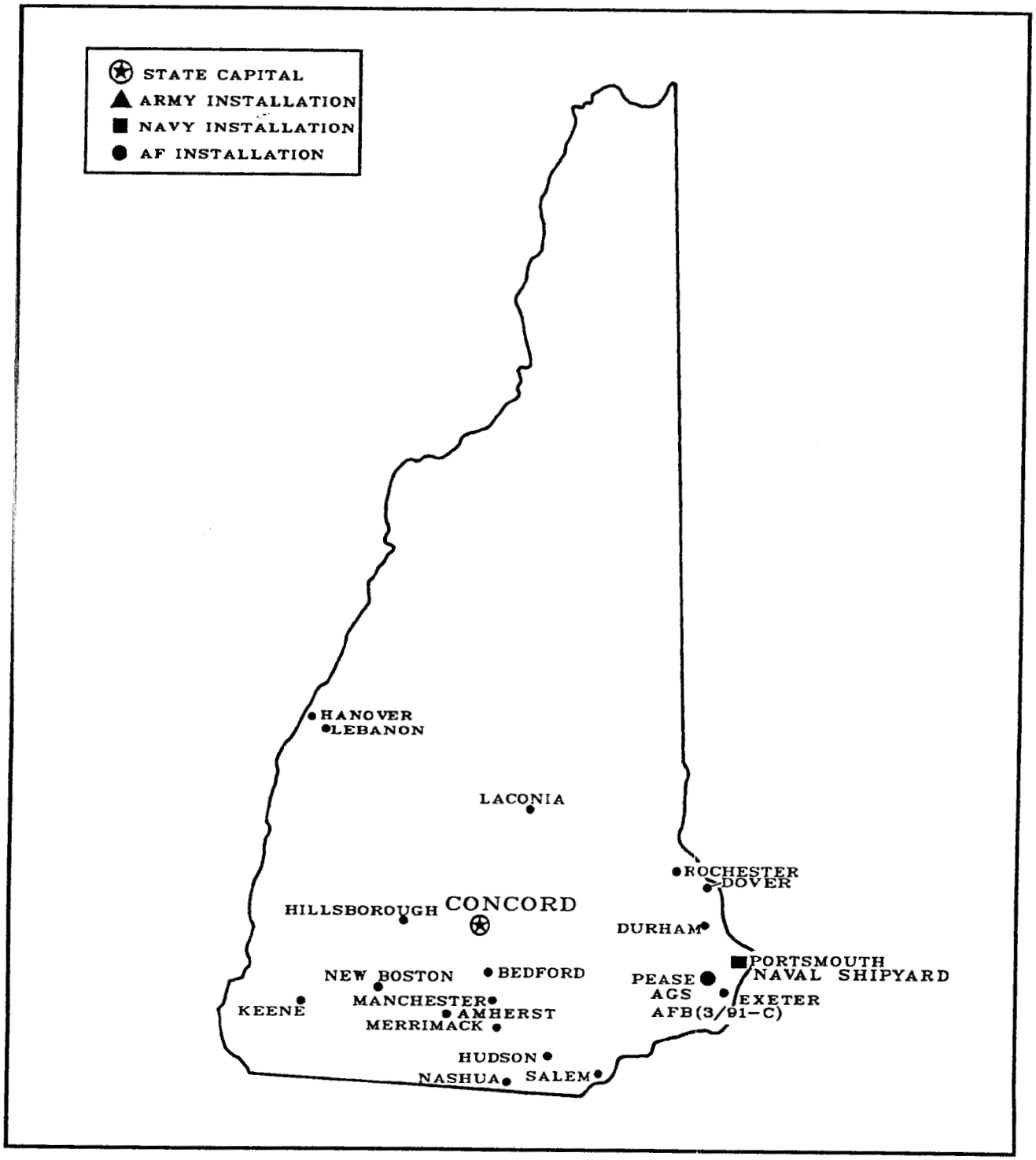
MAP NO. 30

NEW HAMPSHIRE



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NEW HAMPSHIRE

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	9,012	5,135	1,859	1,864	154
Active Duty Military	333	17	171	145	0
Civilian	1,358	592	291	321	154
Reserve & National Guard	7,321	4,526	1,397	1,398	0
II. Expenditures - Total	$604,829	$135,373	$233,104	$212,026	$24,326
A. Payroll Outlays - Total	235,846	75,508	67,580	85,533	7,225
Active Duty Military Pay	22,610	783	16,685	5,142	0
Civilian Pay	52,458	20,233	14,447	10,553	7,225
Reserve & National Guard Pay	21,923	14,868	1,223	5,832	0
Retired Military Pay	138,855	39,624	35,225	64,006	0
B. Prime Contracts Over $25,000 Total	368,983	59,865	165,524	126,493	17,101
Supply and Equipment Contracts	238,199	11,702	128,716	82,149	15,632
RDT&E Contracts	68,337	40,930	17,245	10,162	0
Service Contracts	46,310	5,759	19,563	19,519	1,469
Construction Contracts	15,428	765	0	14,663	0
Civil Function Contracts	709	709	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Nashua	$185,876	$17,516	$168,360	Portsmouth	509	178	331
Portsmouth	83,414	42,703	40,711	Hanover	353	1	352
Merrimack	70,946	3,781	67,165	Pease AGS	307	69	238
Pease AGS	38,926	8,571	30,355	Concord	156	5	151
Salem	19,136	1,643	17,493	Nashua	97	19	78
Manchester	17,362	10,210	7,152	New Boston	93	30	63
Hanover	16,517	14,131	2,386	Manchester	52	15	37
Concord	11,721	10,194	1,527	Londonderry	27	0	27
Hudson	8,549	3,993	4,556	Hudson	13	0	13
Dover	6,894	6,439	455	Durham	11	9	2

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$396,064	$121,637	$115,557	$141,263	$17,607
Fiscal Year 1992	424,396	142,161	145,183	114,267	22,785
Fiscal Year 1991	427,057	91,048	206,355	116,362	13,272

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. LOCKHEED CORPORATION	$166,415	ADP Support Equip	$59,582
2. SEQUA CORPORATION	65,982	Night Vision Equipment, Emitted and Reflec	64,141
3. DIGITAL EQUIPMENT CORPORATION	21,391	ADPE Configuration	14,547
4. TYCO INTERNATIONAL LTD	14,513	Fiber Optic Cables	10,344
5. BECHTEL GROUP INC	14,430	Maint/Unimproved Real Property (Land)	14,430
Total of Above	$282,731	(76.6% of total awards over $25,000)	

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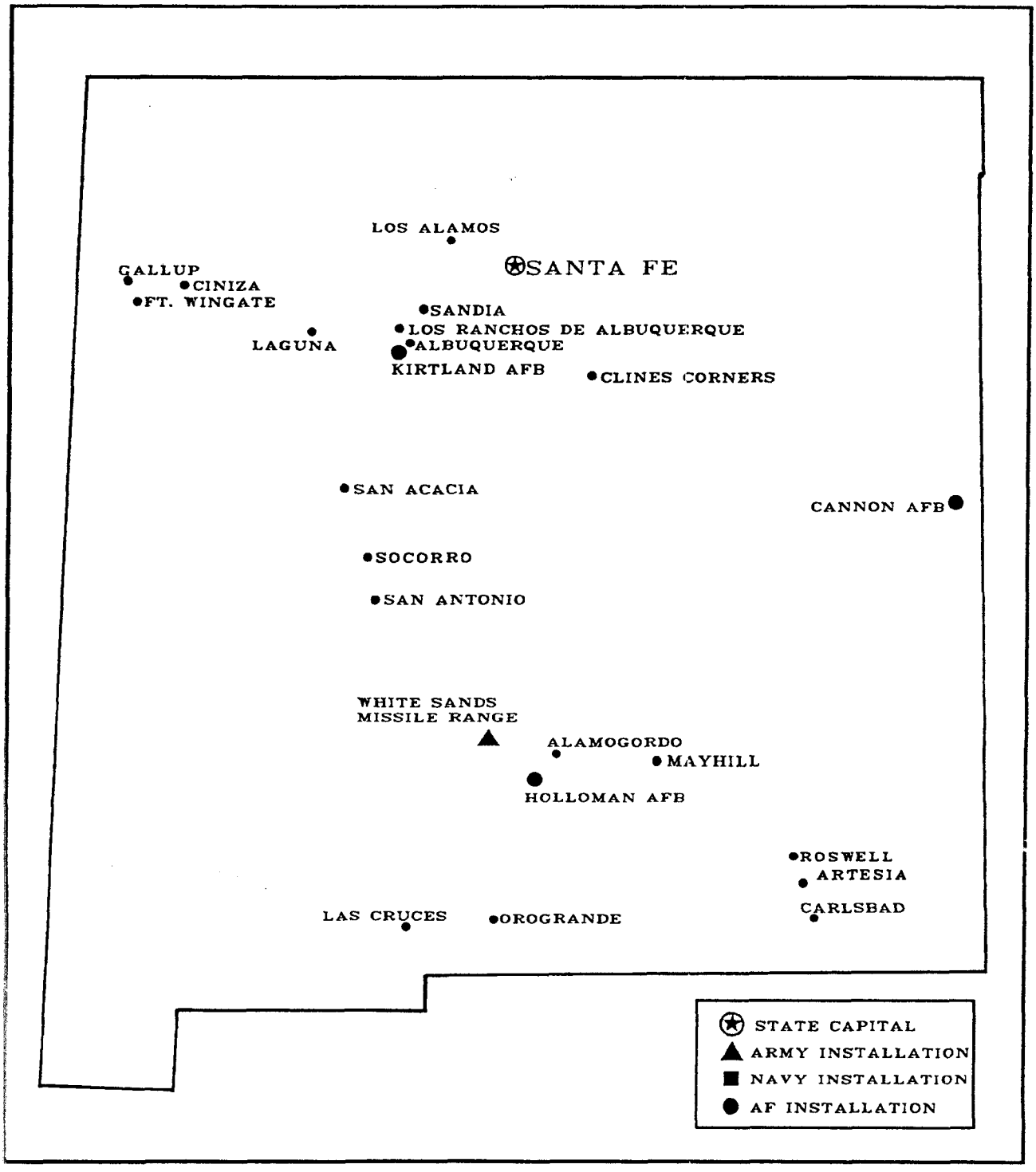
MAP NO. 32

NEW MEXICO



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NEW MEXICO

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	37,858	12,855	2,811	21,372	820
Active Duty Military	16,234	1,170	379	14,685	0
Civilian	8,615	3,675	120	4,000	820
Reserve & National Guard	13,009	8,010	2,312	2,687	0
II. Expenditures - Total	$1,713,970	$562,851	$105,496	$943,272	$102,351
A. Payroll Outlays - Total	1,055,705	268,266	72,155	688,549	26,735
Active Duty Military Pay	414,946	35,476	11,923	367,547	0
Civilian Pay	293,809	128,861	5,007	133,206	26,735
Reserve & National Guard Pay	33,504	24,378	2,593	6,533	0
Retired Military Pay	313,446	79,551	52,632	181,263	0
B. Prime Contracts Over $25,000 Total	658,265	294,585	33,341	254,723	75,616
Supply and Equipment Contracts	123,027	32,024	10,117	52,829	28,057
RDT&E Contracts	168,895	65,247	6,536	74,295	22,817
Service Contracts	288,563	130,108	16,602	117,174	24,679
Construction Contracts	54,116	43,542	86	10,425	63
Civil Function Contracts	23,664	23,664	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Albuquerque	$382,449	$175,181	$207,268	Kirtland AFB	6,937	4,588	2,349
Kirtland AFB	315,910	214,391	101,519	Holloman AFB	6,007	4,760	1,247
White Sands Msl Rge	235,386	127,019	108,367	Cannon AFB	5,765	5,269	496
Holloman AFB	226,950	150,672	76,278	White Sands Msl Rge	3,779	872	2,907
Cannon AFB	179,070	135,751	43,319	Albuquerque	1,360	306	1,054
Laguna	35,569	75	35,494	Santa Fe	242	31	211
Las Cruces	34,320	20,645	13,675	Sandia Base	175	175	0
Alamogordo	27,496	26,827	669	Orogrande	90	0	90
Santa Fe	24,243	23,596	647	Socorro	61	2	59
Roswell	17,347	13,780	3,567	Roswell	53	40	13

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$809,746	$283,385	$32,998	$330,107	$163,256
Fiscal Year 1992	728,139	256,138	33,187	301,987	136,827
Fiscal Year 1991	681,643	299,728	32,925	265,388	83,602

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. DYNCORP	$70,164	Operation/Govt-Owned Contractor-Operated R	$26,478
2. HONEYWELL INC	60,475	RDTE/Aircraft-Operational Systems Developm	24,227
3. LAGUNA INDUSTRIES INC	35,494	Radio & TV Comm Equipment, Except Airborne	24,835
4. EG&G INC	23,009	Operation/Radar & Navigational Facilities	13,143
5. MARTIN MARIETTA CORPORATION	15,874	Maint & Repair of Eq/Metal Bars & Sheets	13,270
Total of Above	$205,016	(31.1% of total awards over $25,000)	

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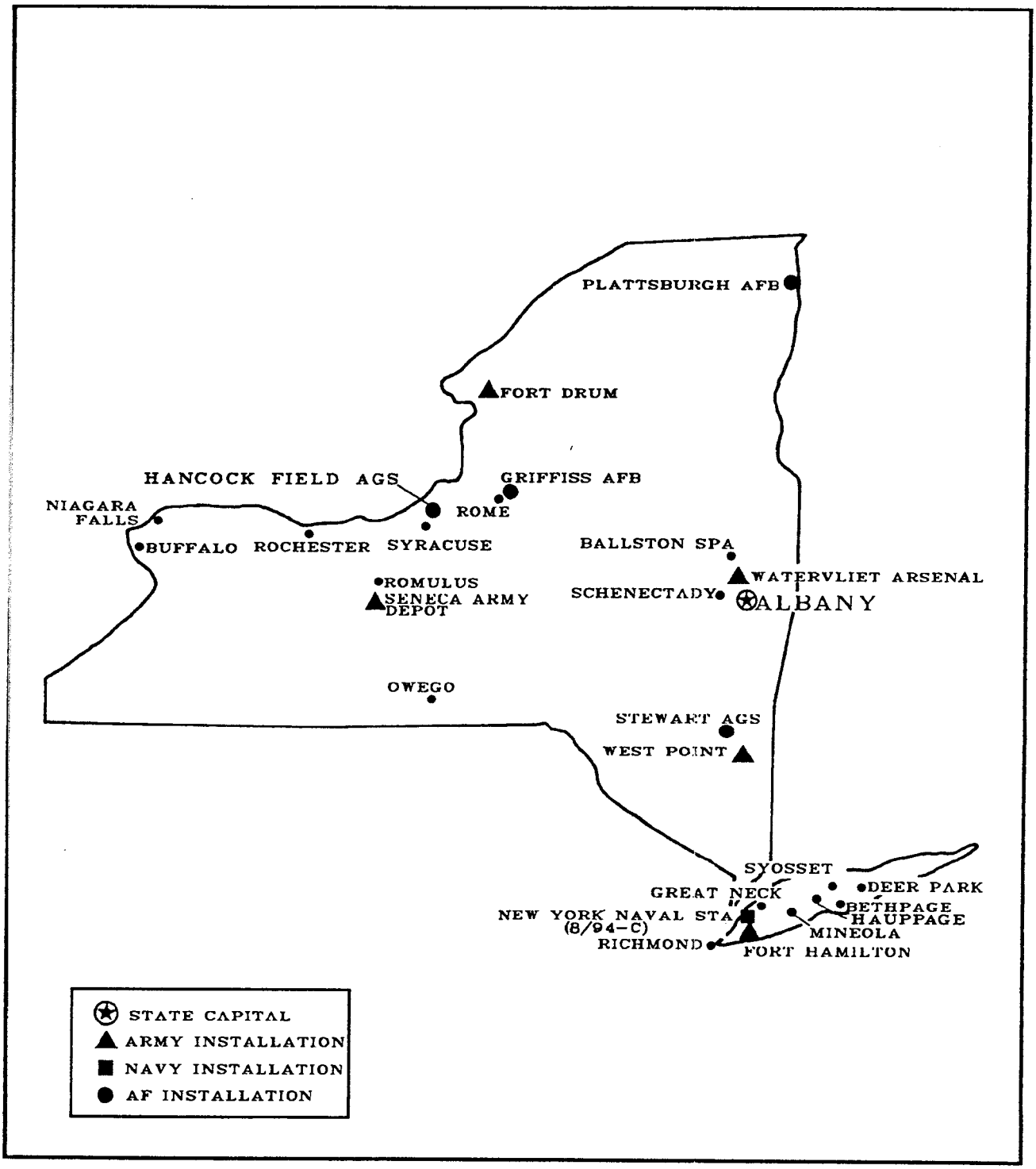
MAP NO. 33

NEW YORK



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NEW YORK

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	115,870	73,378	19,331	20,608	2,553
Active Duty Military	23,735	15,412	2,565	5,758	0
Civilian	15,492	8,473	304	4,162	2,553
Reserve & National Guard	76,643	49,493	16,462	10,688	0
II. Expenditures - Total	$5,523,001	$1,711,744	$1,715,826	$1,638,906	$456,525
A. Payroll Outlays - Total	1,893,655	1,055,889	235,640	499,673	102,453
Active Duty Military Pay	752,727	494,224	94,175	164,328	0
Civilian Pay	551,412	275,194	17,402	156,363	102,453
Reserve & National Guard Pay	187,769	131,420	13,853	42,496	0
Retired Military Pay	401,747	155,051	110,210	136,486	0
B. Prime Contracts Over $25,000 Total	3,629,346	655,855	1,480,186	1,139,233	354,072
Supply and Equipment Contracts	1,623,114	235,506	613,168	443,568	330,872
RDT&E Contracts	670,935	59,335	189,825	413,229	8,546
Service Contracts	1,226,156	252,677	676,554	282,369	14,556
Construction Contracts	68,662	67,858	639	67	98
Civil Function Contracts	40,479	40,479	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Bethpage	$668,841	$10,852	$657,989	Fort Drum	12,439	10,529	1,910
New York	648,511	223,146	425,365	Griffiss AFB	5,316	3,194	2,122
Fort Drum	437,941	399,023	38,918	West Point Mil Res	4,980	2,352	2,628
Schenectady	286,991	21,521	265,470	Plattsburgh AFB	2,073	1,725	348
Owego	265,966	3,756	262,210	Watervliet	1,822	6	1,816
Rome	232,920	190,981	41,939	Richmond	1,576	520	1,056
Binghamton	225,918	4,223	221,695	Ballston Spa	1,270	1,270	0
West Point Mil Res	221,467	149,786	71,681	Niagara Falls	765	77	688
Syracuse	218,032	27,418	190,614	Newburgh	754	309	445
Great Neck	153,401	8,155	145,246	Fort Hamilton	751	501	250

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$4,641,425	$611,418	$2,052,782	$1,461,199	$516,026
Fiscal Year 1992	5,429,803	565,496	2,876,555	1,485,312	502,440
Fiscal Year 1991	6,860,402	538,249	3,613,706	2,187,678	520,769

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. NORTHROP GRUMMAN CORPORATION	$669,170	Maint & Repair of Eq/Aircraft Structural C	$118,463
2. LORAL CORPORATION	433,419	Elct Countermeasures & Quick Reaction Eq	158,812
3. GENERAL ELECTRIC COMPANY	366,330	Operation/Govt-Owned Contractor-Operated R	174,400
4. CAE INC	308,248	RDTE/Other Defense-Engineering Development	199,090
5. UNISYS CORPORATION	143,928	Guided Missile Systems, Complete	54,499
Total of Above	$1,921,095	(52.9% of total awards over $25,000)	

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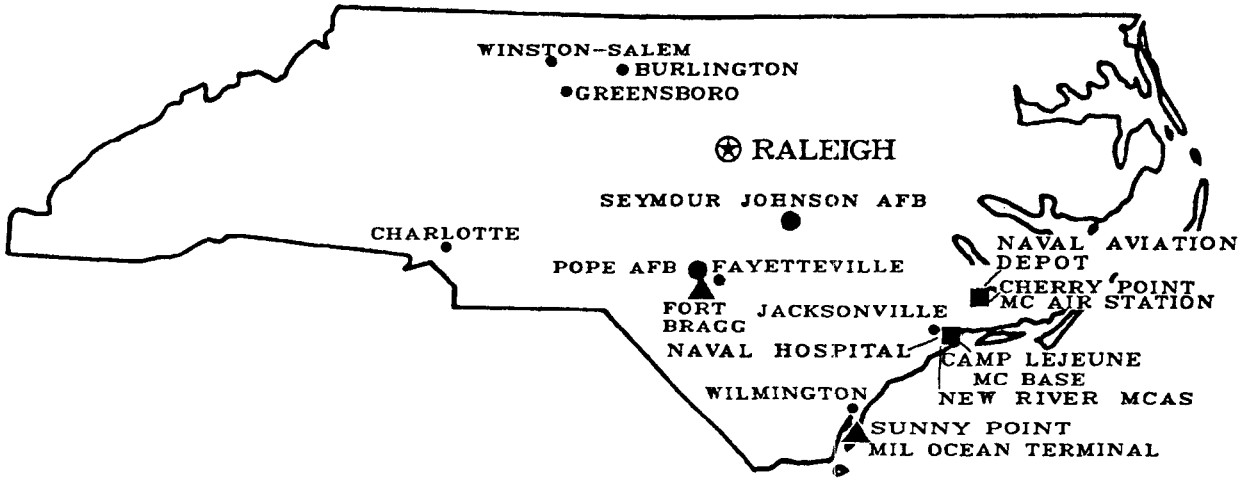
MAP NO. 34

NORTH CAROLINA



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NORTH CAROLINA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	162,671	82,815	60,532	16,827	2,497
Active Duty Military	96,188	41,631	44,302	10,255	0
Civilian	17,420	6,752	6,938	1,233	2,497
Reserve & National Guard	49,063	34,432	9,292	5,339	0
II. Expenditures - Total	$5,348,593	$2,477,940	$1,891,664	$738,163	$240,826
A. Payroll Outlays - Total	4,185,982	2,078,735	1,495,072	543,342	68,833
Active Duty Military Pay	2,585,791	1,374,917	954,618	256,256	0
Civilian Pay	570,728	230,854	241,058	29,983	68,833
Reserve & National Guard Pay	114,066	86,871	10,841	16,354	0
Retired Military Pay	915,397	386,093	288,555	240,749	0
B. Prime Contracts Over $25,000 Total	1,162,611	399,205	396,592	194,821	171,993
Supply and Equipment Contracts	387,332	39,407	107,800	106,246	133,879
RDT&E Contracts	85,628	3,759	70,979	6,058	4,832
Service Contracts	415,435	138,876	162,837	80,440	33,282
Construction Contracts	224,501	167,448	54,976	2,077	0
Civil Function Contracts	49,715	49,715	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Fort Bragg	$1,943,107	$1,676,523	$266,584	Fort Bragg	46,487	40,363	6,124
Camp Lejeune	714,132	642,050	72,082	Camp Lejeune	30,738	27,859	2,879
Cherry Point MCAS	454,513	362,673	91,840	Cherry Point MCAS	11,888	6,973	4,915
Greensboro	283,155	23,538	259,617	Jacksonville	9,118	8,946	172
Jacksonville	270,454	260,784	9,670	Seymour Johnson AFB	5,519	4,943	576
Fayetteville	216,217	185,372	30,845	Pope AFB	5,222	4,861	361
Seymour Johnson AFB	178,708	138,439	40,269	Raleigh	1,381	693	688
Raleigh	130,334	61,064	69,270	Charlotte	591	241	350
Charlotte	83,245	53,340	29,905	Fayetteville	459	292	167
Winston-Salem	79,750	9,741	70,009	Wilmington	380	26	354

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$1,212,482	$383,809	$377,108	$235,751	$215,814
Fiscal Year 1992	1,539,838	358,985	677,701	256,512	246,640
Fiscal Year 1991	1,560,584	525,299	609,530	219,149	206,606

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. AT&T CORP	$250,345	RDTE/Electronics & Communication Eq-Engr D	$53,605
2. PIZZAGALLI CONSTRUCTION CO	67,474	Other Miscellaneous Buildings	53,817
3. EXIDE ELECTRONICS GROUP INC	60,756	Converters, Electrical, Nonrotating	60,689
4. CAROLINA POWER & LIGHT CO	29,792	Electric Services	29,792
5. NORTH CAROLINA STATE OF	21,285	Psychiatry Services	20,914
Total of Above	$429,662	(37.0% of total awards over $25,000)	

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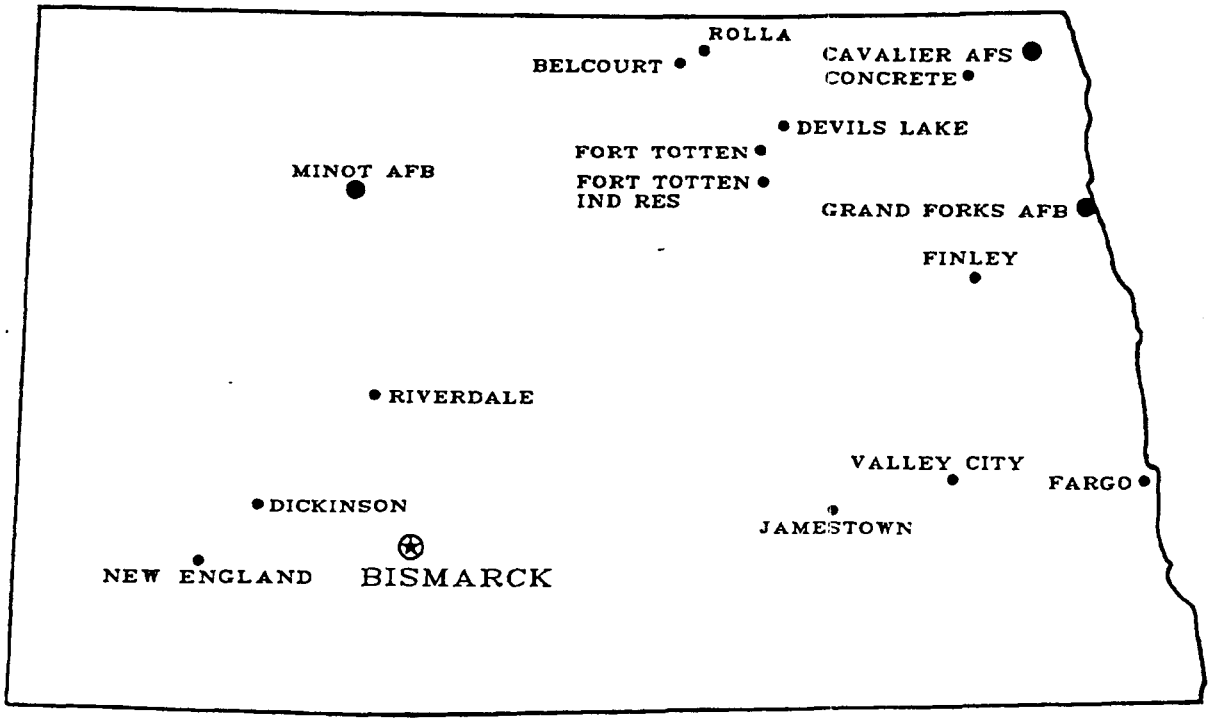
MAP NO. 35

NORTH DAKOTA



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NORTH DAKOTA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	19,295	5,795	683	12,662	155
Active Duty Military	9,786	26	10	9,750	0
Civilian	1,702	273	1	1,273	155
Reserve & National Guard	7,807	5,496	672	1,639	0
II. Expenditures - Total	$460,379	$95,410	$9,495	$347,122	$8,352
A. Payroll Outlays - Total	340,399	45,038	6,108	285,254	3,999
Active Duty Military Pay	214,314	806	285	213,223	0
Civilian Pay	53,545	8,303	48	41,195	3,999
Reserve & National Guard Pay	34,148	26,689	801	6,658	0
Retired Military Pay	38,392	9,240	4,974	24,178	0
B. Prime Contracts Over $25,000 Total	119,980	50,372	3,387	61,868	4,353
Supply and Equipment Contracts	7,851	626	3,387	1,422	2,416
RDT&E Contracts	841	841	0	0	0
Service Contracts	65,891	3,944	0	60,010	1,937
Construction Contracts	27,244	26,808	0	436	0
Civil Function Contracts	18,153	18,153	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Grand Forks AFB	$153,542	$106,952	$46,590	Minot AFB	5,452	4,869	583
Minot AFB	145,158	123,122	22,036	Grand Forks AFB	5,295	4,753	542
Grand Forks	41,461	23,784	17,677	Fargo	397	106	291
Fargo	31,134	27,604	3,530	Bismarck	158	0	158
Minot	26,174	10,691	15,483	Devils Lake	58	0	58
Bismarck	18,618	18,534	84	New England	32	32	0
Cavalier	7,153	1,064	6,089	Cavalier	30	25	5
Devils Lake	6,255	6,144	111	Minot	24	1	23
Jamestown	4,927	1,635	3,292	Valley City	18	0	18
Valley City	2,134	2,102	32	Dickinson	6	0	6

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$172,044	$72,962	$6,550	$71,738	$20,794
Fiscal Year 1992	146,270	69,567	6,475	56,472	13,756
Fiscal Year 1991	148,658	85,536	3,259	49,878	9,985

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. INDUSTRIAL BUILDERS, INC	$14,968	All Other Non-Building Facilities	$15,100
2. STRATA CORPORATION	8,340	Airport Runways	7,357
3. MEINECKE-JOHNSON COMPANY	6,975	Other Administrative & Service Buildings	6,975
4. DUBOIS & SONS MASONRY INC	6,838	Maint/Other Residential Buildings	3,770
5. CAPE, JAMES & SONS COMPANY	5,790	Airport Runways	5,790
Total of Above	$42,911	(35.8% of total awards over $25,000)	

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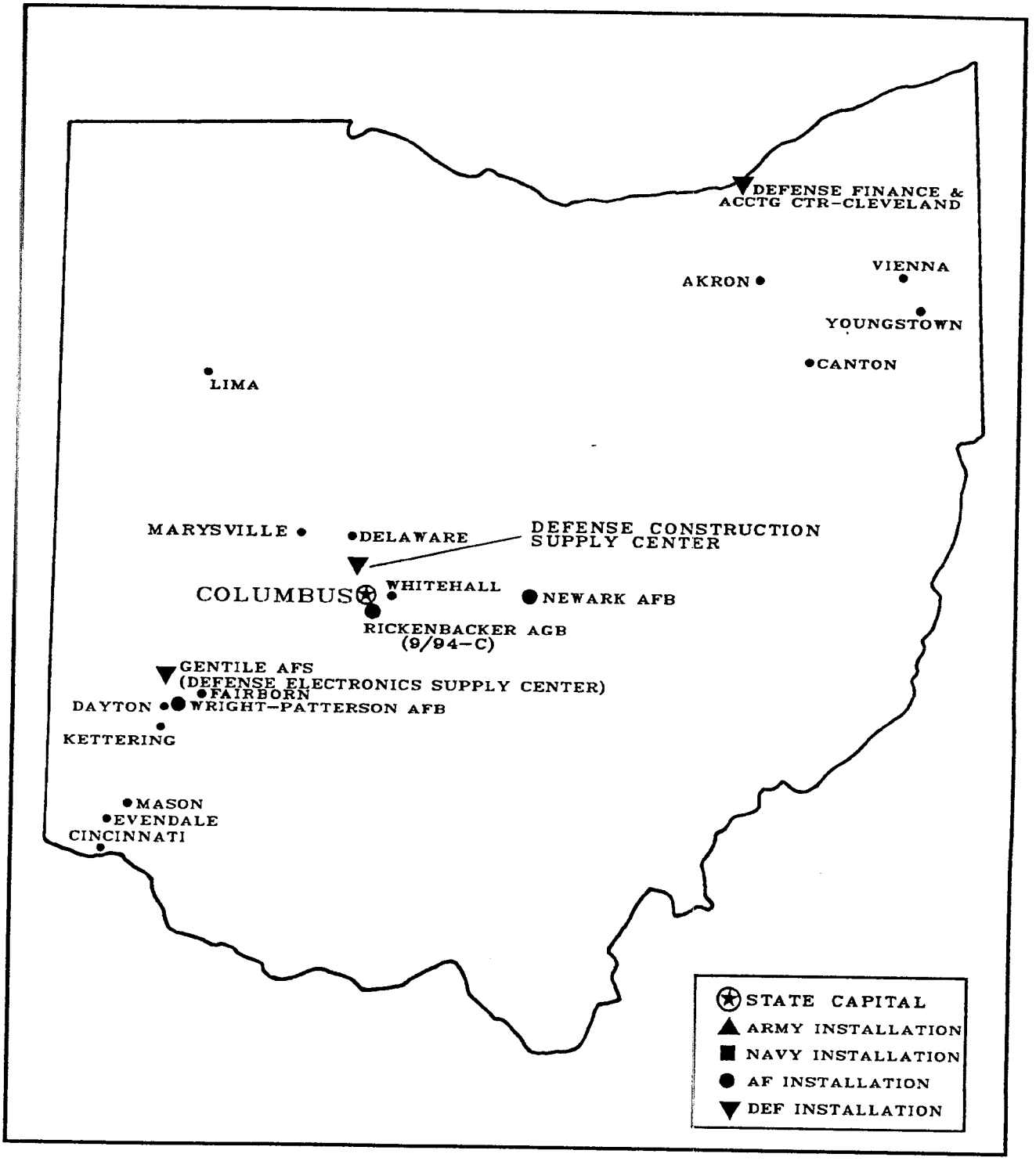
MAP NO. 36

OHIO



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OHIO

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	103,705	37,066	14,123	38,702	13,814
Active Duty Military	9,554	600	670	8,284	0
Civilian	31,910	1,392	221	16,483	13,814
Reserve & National Guard	62,241	35,074	13,232	13,935	0
II. Expenditures - Total	$5,180,867	$919,243	$436,350	$2,893,347	$931,927
A. Payroll Outlays - Total	2,215,357	279,351	148,482	1,308,690	478,834
Active Duty Military Pay	352,646	22,120	23,535	306,991	0
Civilian Pay	1,226,391	47,839	8,715	691,003	478,834
Reserve & National Guard Pay	144,283	78,330	12,486	53,467	0
Retired Military Pay	492,037	131,062	103,746	257,229	0
B. Prime Contracts Over $25,000 Total	2,965,510	639,892	287,868	1,584,657	453,093
Supply and Equipment Contracts	1,842,457	464,034	220,787	753,855	403,781
RDT&E Contracts	459,203	57,330	35,786	365,875	212
Service Contracts	569,522	25,547	31,187	463,688	49,100
Construction Contracts	77,421	76,074	108	1,239	0
Civil Function Contracts	16,907	16,907	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Wright Patterson AFB	$1,192,080	$909,951	$282,129	Wright Patterson AFB	21,791	7,721	14,070
Cincinnati	970,856	36,888	933,968	Columbus	5,012	363	4,649
Dayton	409,019	94,831	314,188	Whitehall	4,015	180	3,835
Columbus	385,564	191,551	194,013	Cleveland	2,552	80	2,472
Lima	337,560	7,319	330,241	Kettering	2,038	28	2,010
Cleveland	192,373	94,001	98,372	Newark	1,689	62	1,627
Fairborn	170,319	26,799	143,520	Cincinnati	453	169	284
Akron	169,874	16,033	153,841	Youngstown	403	6	397
Whitehall	163,781	163,781	0	Dayton	401	147	254
Evendale	120,696	5,963	114,733	Rickenbacker AGB	365	16	349

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$3,445,640	$1,086,975	$316,572	$1,580,549	$461,544
Fiscal Year 1992	3,033,026	588,474	243,666	1,733,550	467,336
Fiscal Year 1991	4,760,046	1,878,734	640,170	1,826,166	414,976

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work: FSC or Service Code Description	Amount
1. GENERAL ELECTRIC COMPANY	$830,089	Gas Turbines and Jet Engines, Acft & Comps	$600,672
2. GENERAL DYNAMICS CORPORATION	323,506	Combat Assault & Tactical Veh, Tracked	350,314
3. LORAL CORPORATION	116,102	Operational Training Devices	42,992
4. BATTELLE MEMORIAL INSTITUTE	111,103	Systems Engineering Services	27,325
5. BRITISH PETROLEUM CO PLC THE	88,001	Liquid Propellants & Fuel, Petroleum Base	73,881
Total of Above	$1,468,801	(49.5% of total awards over $25,000)	

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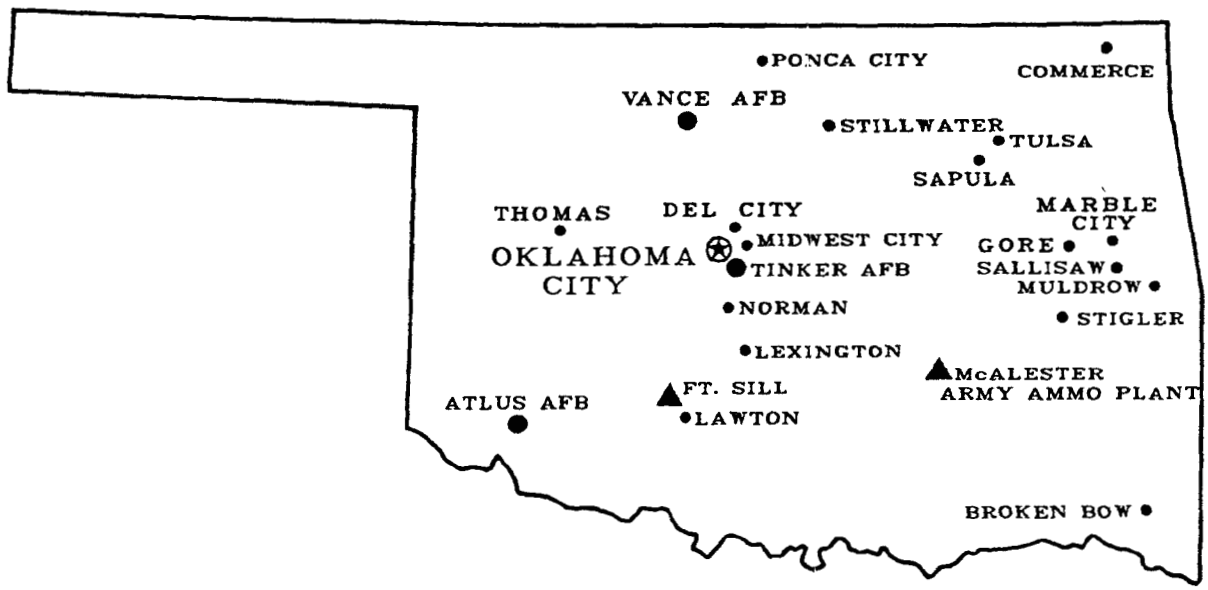
MAP NO. 37

OKLAHOMA



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OKLAHOMA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	75,651	39,142	4,708	29,861	1,940
Active Duty Military	28,259	16,012	736	11,511	0
Civilian	19,562	4,788	135	12,699	1,940
Reserve & National Guard	27,830	18,342	3,837	5,651	0
II. Expenditures - Total	$2,774,272	$1,222,334	$130,631	$1,230,269	$191,038
A. Payroll Outlays - Total	2,015,096	958,883	117,526	879,494	59,193
Active Duty Military Pay	860,602	517,521	45,679	297,402	0
Civilian Pay	628,721	194,257	4,747	370,524	59,193
Reserve & National Guard Pay	93,967	68,391	2,245	23,331	0
Retired Military Pay	431,806	178,714	64,855	188,237	0
B. Prime Contracts Over $25,000 Total	759,176	263,451	13,105	350,775	131,845
Supply and Equipment Contracts	215,905	17,000	7,085	63,452	128,368
RDT&E Contracts	8,194	6,585	905	704	0
Service Contracts	444,227	153,407	5,115	282,228	3,477
Construction Contracts	79,758	75,367	0	4,391	0
Civil Function Contracts	11,092	11,092	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Oklahoma City	$962,090	$748,241	$213,849	Tinker AFB	20,015	7,441	12,574
Fort Sill	692,241	584,747	107,494	Fort Sill	17,698	15,551	2,147
Altus	180,881	104,094	76,787	Altus AFB	3,762	3,245	517
Tulsa	158,745	84,616	74,129	Oklahoma City	1,591	311	1,280
Vance AFB	94,907	29,199	65,708	Tulsa	1,419	527	892
Lawton	85,297	82,720	2,577	Vance AFB	1,044	919	125
Midwest City	61,746	2,417	59,329	McAlester	972	7	965
Norman	57,927	35,679	22,248	Norman	304	100	204
McAlester	49,505	49,333	172	Lawton	138	2	136
Thomas	46,624	36	46,588	Lexington	110	0	110

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$633,792	$202,694	$19,155	$356,286	$55,657
Fiscal Year 1992	758,573	306,155	29,302	350,496	72,620
Fiscal Year 1991	778,981	232,138	38,922	336,476	171,445

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. NORTHROP GRUMMAN CORPORATION	$61,944	Maint & Repair of Eq/Aircraft Structural C	$44,684
2. UNC INCORPORATED	61,665	Maint & Repair of Eq/Aircraft Comps & Accy	21,238
3. BOEING COMPANY THE	49,035	Program Management/Support Services	33,048
4. BARRETT REFINING CORPORATION	46,588	Liquid Propellants & Fuel, Petroleum Base	46,588
5. SUN COMPANY INC	31,967	Liquid Propellants & Fuel, Petroleum Base	31,967
Total of Above	$251,199	(33.1% of total awards over $25,000)	

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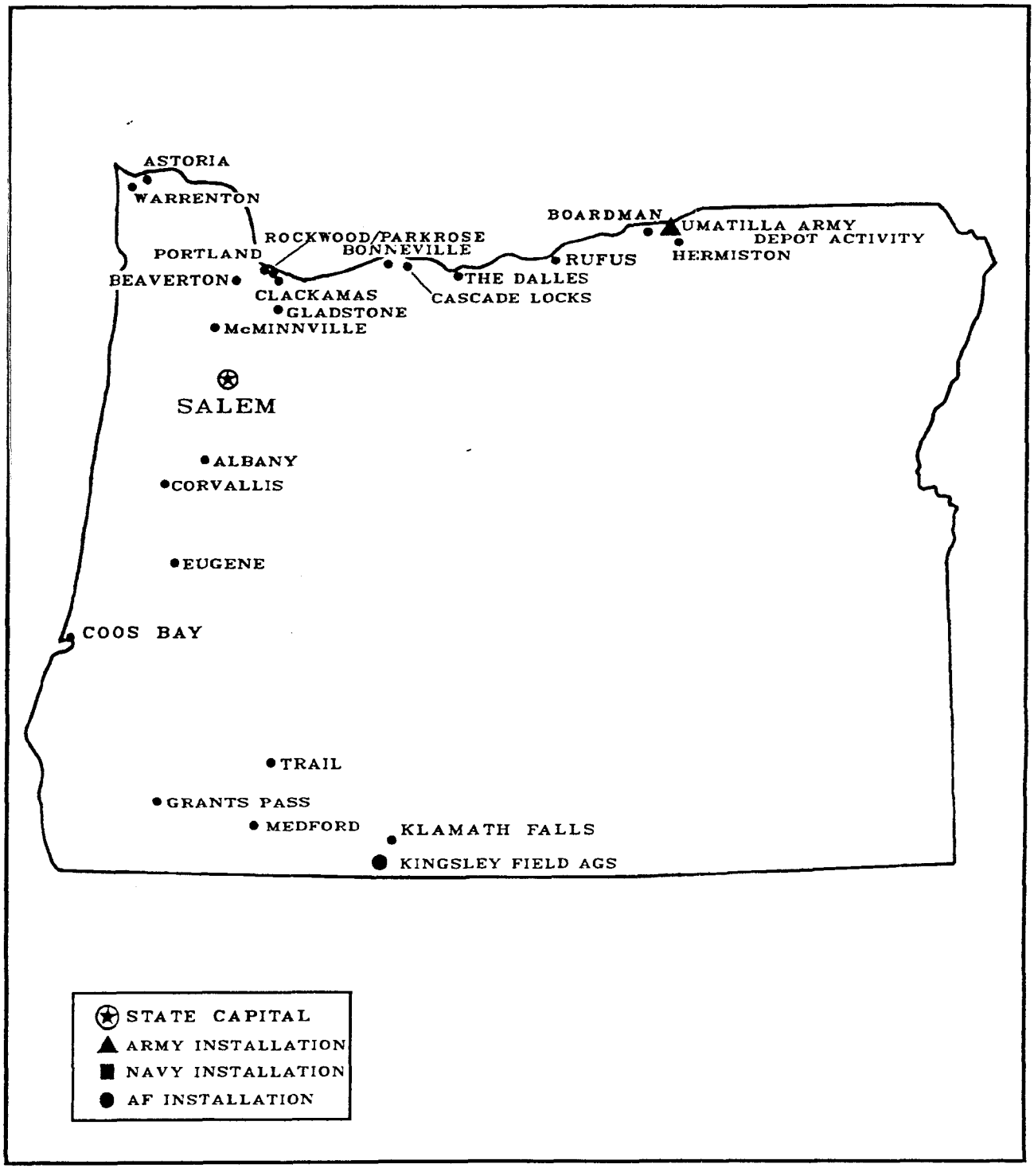
MAP NO. 38

OREGON



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OREGON

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	25,164	14,636	5,381	5,113	34
Active Duty Military	952	186	378	388	0
Civilian	3,019	2,253	20	712	34
Reserve & National Guard	21,193	12,197	4,983	4,013	0
II. Expenditures - Total	$627,248	$277,963	$151,774	$178,398	$19,113
A. Payroll Outlays - Total	496,490	206,907	127,612	160,471	1,500
Active Duty Military Pay	31,948	7,171	11,461	13,316	0
Civilian Pay	110,819	80,067	609	28,643	1,500
Reserve & National Guard Pay	70,035	45,156	6,706	18,173	0
Retired Military Pay	283,688	74,513	108,836	100,339	0
B. Prime Contracts Over $25,000 Total	130,758	71,056	24,162	17,927	17,613
Supply and Equipment Contracts	68,023	19,557	17,972	14,156	16,338
RDT&E Contracts	10,462	3,037	3,668	2,935	822
Service Contracts	16,063	12,252	2,522	836	453
Construction Contracts	4,006	4,006	0	0	0
Civil Function Contracts	32,204	32,204	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Portland	$166,430	$125,032	$41,398	Portland	1,709	463	1,246
Salem	37,811	35,479	2,332	Rockwood	490	0	490
Beaverton	29,849	7,960	21,889	Kingsley Field AGS	320	211	109
Rockwood	19,397	19,397	0	Salem	232	13	219
Clackamas	16,042	15,432	610	Clackamas	225	45	180
Eugene	14,610	12,018	2,592	Bonneville	130	0	130
Kingsley Field AGS	12,174	11,728	446	Hermiston	90	5	85
Klamath Falls	11,607	7,367	4,240	Umatilla	84	0	84
Corvallis	11,530	10,048	1,482	Corvallis	75	69	6
Grants Pass	11,529	10,049	1,480	Parkrose	75	0	75

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$161,835	$82,891	$17,340	$14,717	$46,887
Fiscal Year 1992	205,971	124,451	23,320	15,651	42,549
Fiscal Year 1991	316,759	145,651	35,768	36,347	98,993

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. DAIMLER-BENZ AG	$12,303	Trucks and Truck Tractors, Wheeled	$12,252
2. TEKTRONIX INC	12,247	Electrical & Elct Meas & Test Instruments	7,636
3. FLIR SYSTEMS INC	10,540	Msl Aircraft Accessories and Components	7,745
4. SAVI TECHNOLOGY, INC	5,278	Miscellaneous Communication Equipment	5,278
5. BENGE CONSTRUCTION CO	4,147	Other Conservation & Development Facilitie	3,977
Total of Above	$44,515	(34.0% of total awards over $25,000)	

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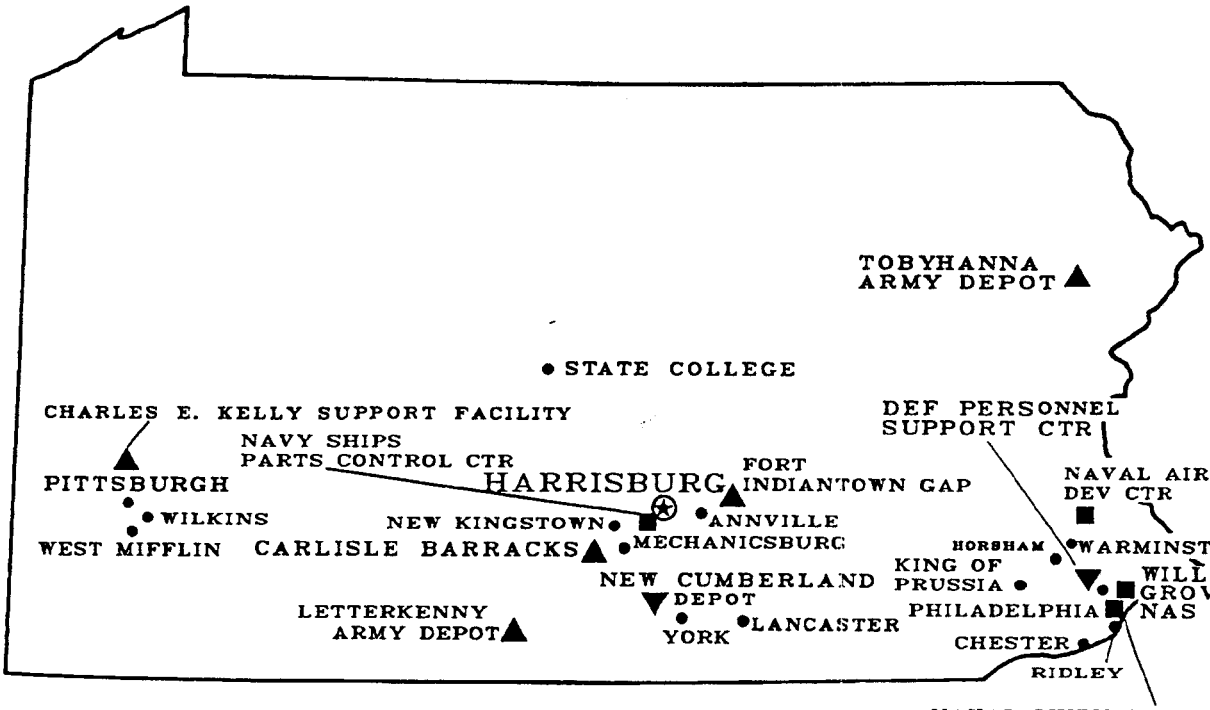
MAP NO. 39

PENNSYLVANIA



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STATE CAPITAL
ARMY INSTALLATION
NAVY INSTALLATION
AF INSTALLATION
DEF INSTALLATION

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PENNSYLVANIA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	120,592	61,169	35,687	12,641	11,095
Active Duty Military	5,301	2,372	2,329	600	0
Civilian	40,134	10,800	16,624	1,615	11,095
Reserve & National Guard	75,157	47,997	16,734	10,426	0
II. Expenditures - Total	$5,406,159	$1,825,994	$2,331,093	$498,569	$750,503
A. Payroll Outlays - Total	2,646,030	884,276	1,079,854	264,149	417,751
Active Duty Military Pay	260,765	81,988	157,102	21,675	0
Civilian Pay	1,551,437	375,417	716,017	42,252	417,751
Reserve & National Guard Pay	261,364	193,322	25,226	42,816	0
Retired Military Pay	572,464	233,549	181,509	157,406	0
B. Prime Contracts Over $25,000 Total	2,760,129	941,718	1,251,239	234,420	332,752
Supply and Equipment Contracts	961,199	247,042	330,756	99,375	284,026
RDT&E Contracts	757,703	417,602	227,603	84,507	27,991
Service Contracts	891,314	158,002	662,827	49,352	21,133
Construction Contracts	87,866	57,025	30,053	1,186	398-
Civil Function Contracts	62,047	62,047	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Philadelphia	$1,591,152	$793,217	$797,935	Philadelphia	17,289	1,401	15,888
West Mifflin	298,263	761	297,502	Mechanicsburg	6,025	122	5,903
Mechanicsburg	284,400	251,547	32,853	Tobyhanna	3,396	59	3,337
Pittsburgh	216,321	47,443	168,878	Letterkenny Army Dep	3,088	61	3,027
Letterkenny Army Dep	141,367	137,360	4,007	New Cumberland	2,568	229	2,400
Warminster	125,056	117,102	7,954	Warminster	2,143	82	2,061
Tobyhanna	124,316	124,271	45	Pittsburgh	1,802	449	1,353
Chambersburg	123,340	6,274	117,066	Indiantown Gap	1,782	112	1,670
Wilkins Township	115,768	0	115,768	Willow Grove	1,570	733	837
Horsham	100,843	3,334	97,509	Carlisle Barracks	1,254	710	544

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$2,968,230	$1,024,442	$1,283,504	$266,493	$393,791
Fiscal Year 1992	3,064,717	1,457,558	901,077	288,686	417,396
Fiscal Year 1991	2,948,522	1,119,353	1,115,975	268,042	445,152

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. WESTINGHOUSE ELECTRIC CORP	$473,395	Operation/Govt-Owned Contractor-Operated R	$297,126
2. BOEING SKORSKY LHX PROGRAM OFF	304,599	RDTE/Aircraft-Advanced Development	304,599
3. BOEING COMPANY THE	209,834	Maint & Repair of Eq/Aircraft Comps & Accy	97,138
4. FMC CORPORATION	86,595	Guns, over 150 mm through 200 mm	86,554
5. GENERAL ELECTRIC COMPANY	82,383	RDTE/Other Defense-Advanced Development	22,342
Total of Above	$1,156,806	(41.9% of total awards over $25,000)	

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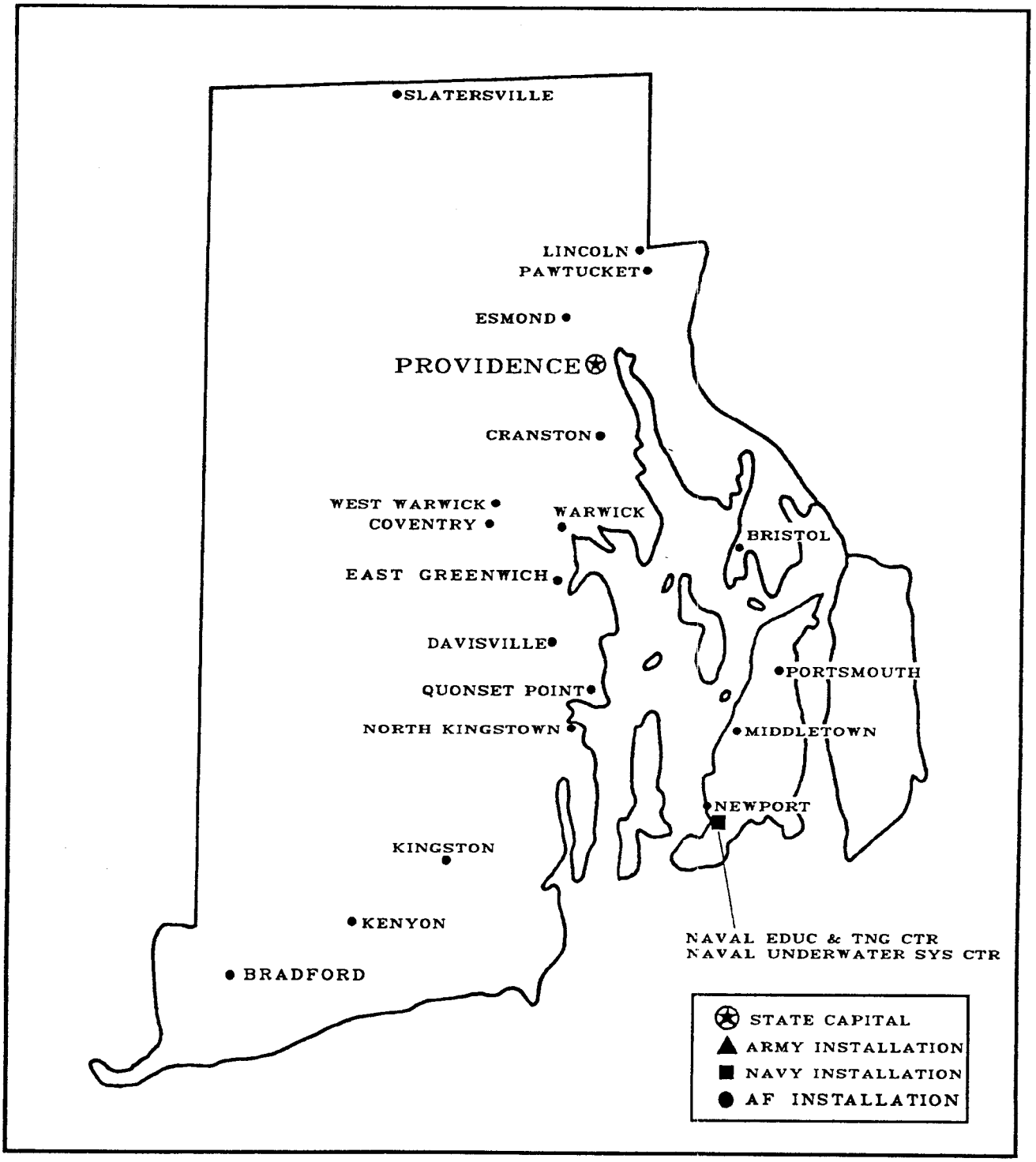
MAP NO. 40

RHODE ISLAND



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RHODE ISLAND

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	15,520	4,754	8,487	2,107	172
Active Duty Military	3,640	33	3,433	174	0
Civilian	4,035	234	3,375	254	172
Reserve & National Guard	7,845	4,487	1,679	1,679	0
II. Expenditures - Total	$857,676	$80,997	$732,319	$30,964	$13,396
A. Payroll Outlays - Total	436,008	43,721	358,684	28,033	5,570
Active Duty Military Pay	150,978	1,525	142,805	6,648	0
Civilian Pay	169,581	6,937	153,531	3,543	5,570
Reserve & National Guard Pay	27,789	18,262	2,752	6,775	0
Retired Military Pay	87,660	16,997	59,596	11,067	0
B. Prime Contracts Over $25,000 Total	421,668	37,276	373,635	2,931	7,826
Supply and Equipment Contracts	155,474	24,524	124,032	1,948	4,970
RDT&E Contracts	31,543	518	30,219	806	0
Service Contracts	185,516	2,594	179,889	177	2,856
Construction Contracts	45,685	6,190	39,495	0	0
Civil Function Contracts	3,450	3,450	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Newport	$374,176	$316,647	$57,529	Newport	6,961	3,483	3,478
Portsmouth	139,037	10,824	128,213	North Kingstown	290	70	220
Middletown	134,466	3,114	131,352	Providence	150	31	119
Naval USC	44,003	0	44,003	Esmond	44	0	44
Providence	28,946	25,466	3,480	Coventry	41	11	30
Esmond	25,856	1,578	24,278	Slatersville	39	0	39
North Kingstown	18,873	11,505	7,368	Warwick	21	0	21
Warwick	12,796	8,751	4,045	Davisville	20	0	20
East Greenwich	5,730	0	5,730	Portsmouth	16	0	16
Pawtucket	4,427	3,607	820	Kingston	13	13	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$389,693	$23,827	$357,220	$2,352	$6,294
Fiscal Year 1992	454,571	50,440	389,331	2,994	11,806
Fiscal Year 1991	413,225	58,929	325,855	14,212	14,229

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work: FSC or Service Code Description	Amount
1. RAYTHEON COMPANY	$134,177	Underwater Sound Equipment	$66,738
2. LUSI, A F CONSTRUCTION INC	32,920	Testing & Measurement Buildings	32,920
3. MINE SAFETY APPLIANCES CO	24,278	Safety and Rescue Equipment	21,515
4. ANALYSIS & TECHNOLOGY INC	17,051	Systems Engineering Services	4,952
5. GENERAL MOTORS CORPORATION	12,975	Data Collection Services	3,084
Total of Above	$221,401	(52.5% of total awards over $25,000)	

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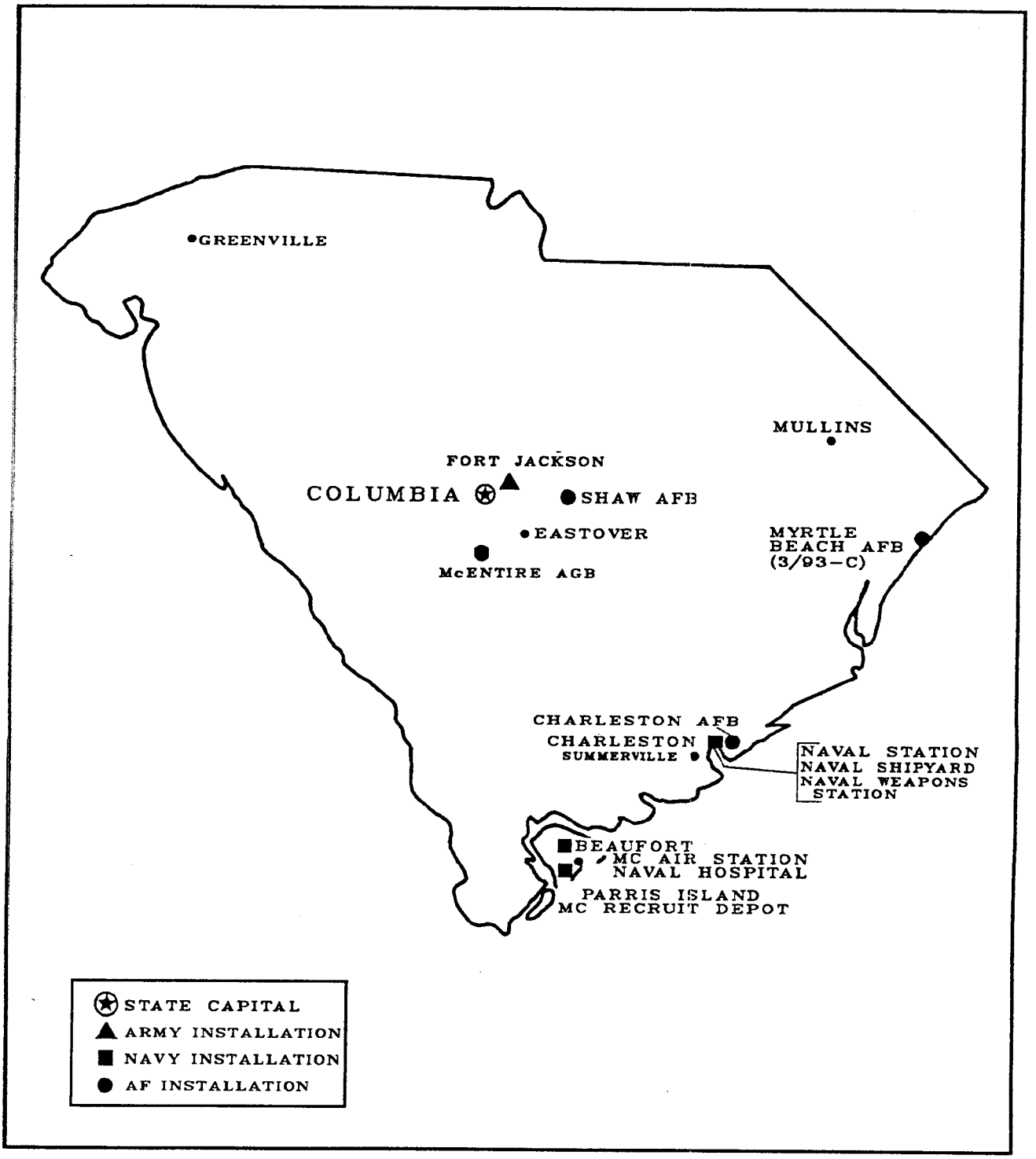
MAP NO. 41

SOUTH CAROLINA



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SOUTH CAROLINA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	89,567	38,941	30,787	18,346	1,493
Active Duty Military	39,005	12,029	16,496	10,480	0
Civilian	14,504	2,820	8,290	1,901	1,493
Reserve & National Guard	36,058	24,092	6,001	5,965	0
II. Expenditures - Total	$3,526,899	$906,377	$1,627,710	$820,067	$172,745
A. Payroll Outlays - Total	2,528,789	769,436	1,144,029	570,943	44,381
Active Duty Military Pay	1,186,602	352,265	579,661	254,676	0
Civilian Pay	530,057	95,844	341,824	48,008	44,381
Reserve & National Guard Pay	128,781	94,006	7,619	27,156	0
Retired Military Pay	683,349	227,321	214,925	241,103	0
B. Prime Contracts Over $25,000 Total	998,110	136,941	483,681	249,124	128,364
Supply and Equipment Contracts	134,020	31,668	30,225	23,263	48,864
RDT&E Contracts	33,605	112	29,668	1,730	2,095
Service Contracts	718,313	56,941	370,658	213,335	77,379
Construction Contracts	82,022	18,070	53,130	10,796	26
Civil Function Contracts	30,150	30,150	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Charleston	$1,008,233	$837,286	$170,947	Charleston	13,420	5,480	7,940
Fort Jackson	446,779	395,006	51,773	Fort Jackson	12,939	11,185	1,754
Greenville	269,899	23,156	246,743	Parris Island MCRD	8,170	7,607	563
Columbia	230,289	132,504	97,785	Shaw AFB	6,291	5,687	604
Shaw AFB	194,985	148,420	46,565	Charleston AFB	5,753	4,610	1,143
Charleston AFB	188,231	141,892	46,339	Beaufort	4,015	3,267	748
North Charleston	150,361	5,939	144,422	Columbia	1,029	299	730
Beaufort	147,588	125,637	21,951	Eastover	431	12	419
Parris Island MCRD	109,947	99,653	10,294	Greenville	108	19	89
Sumter	43,259	42,200	1,059	McEntire AGB	77	77	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$729,552	$184,595	$399,504	$67,491	$77,962
Fiscal Year 1992	756,118	188,565	374,130	54,598	138,825
Fiscal Year 1991	984,748	178,605	393,788	74,891	337,464

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work: FSC or Service Code Description	Amount
1. LOCKHEED CORPORATION	$233,473	Program Management/Support Services	$160,232
2. BLUE CROSS BLUE SHIELD OF SC	71,844	Dependent Medicare Services	71,052
3. ABB ASEA BROWN BOVERI LTD	38,726	Other Architect & Engineering Services	38,726
4. SOUTH CAROLINA RESEARCH AUTH	31,025	RDTE/Other Defense-Basic Research	29,295
5. ENSAFE/ALLEN & HOSHALL	27,333	Other Architect & Engineering Services	27,333
Total of Above	$402,401	(40.3% of total awards over $25,000)	

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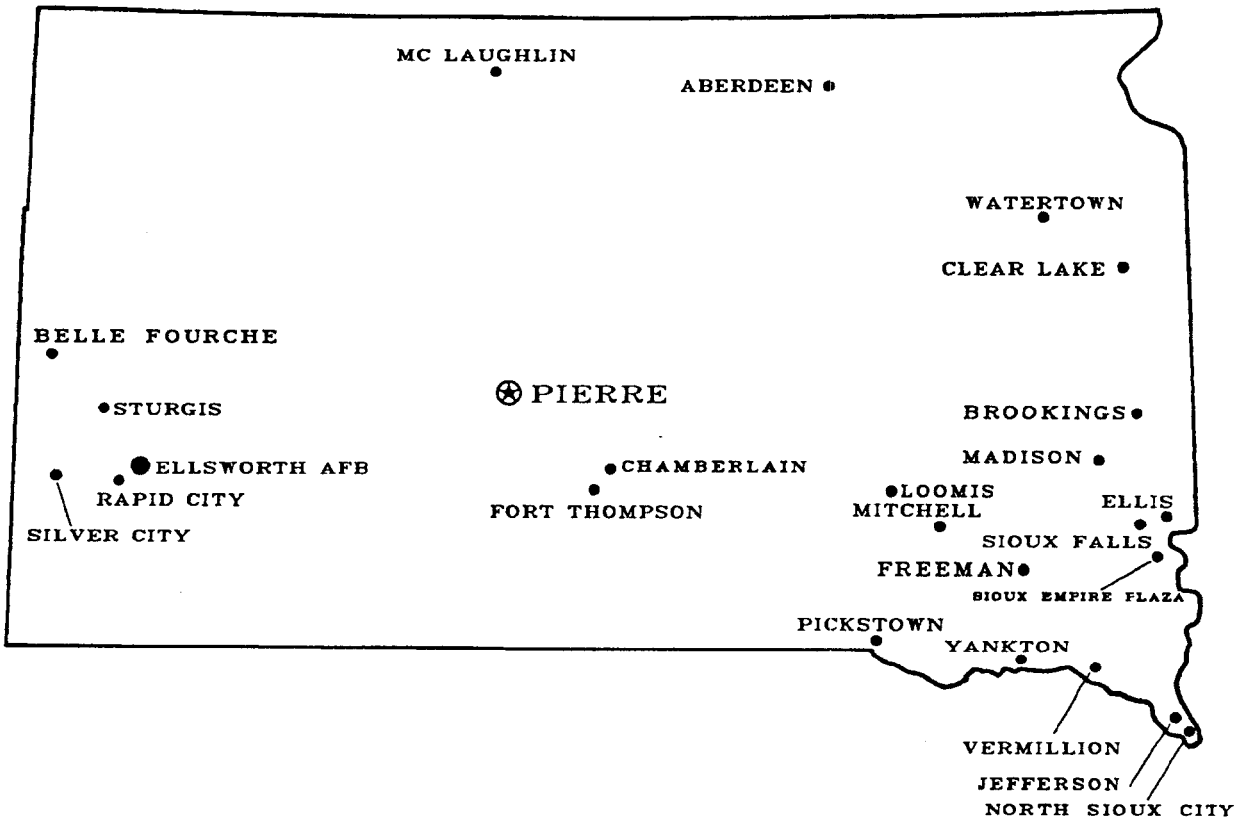
MAP NO. 42

SOUTH DAKOTA



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SOUTH DAKOTA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	14,043	6,106	741	7,098	98
Active Duty Military	4,955	149	7	4,799	0
Civilian	1,251	411	0	742	98
Reserve & National Guard	7,837	5,546	734	1,557	0
II. Expenditures - Total	$325,419	$86,234	$11,689	$205,396	$22,100
A. Payroll Outlays - Total	250,638	51,992	10,126	186,031	2,489
Active Duty Military Pay	126,750	5,307	294	121,149	0
Civilian Pay	38,508	13,340	0	22,679	2,489
Reserve & National Guard Pay	24,974	19,047	771	5,156	0
Retired Military Pay	60,406	14,298	9,061	37,047	0
B. Prime Contracts Over $25,000 Total	74,781	34,242	1,563	19,365	19,611
Supply and Equipment Contracts	28,732	7,348	1,563	1,348	18,473
RDT&E Contracts	0	0	0	0	0
Service Contracts	20,883	1,728	0	18,017	1,138
Construction Contracts	6,926	6,926	0	0	0
Civil Function Contracts	18,240	18,240	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Ellsworth AFB	$166,468	$133,904	$32,564	Ellsworth AFB	5,189	4,635	554
Rapid City	31,748	31,394	354	Sioux Falls	336	76	260
Sioux Falls	25,350	20,628	4,722	Rapid City	205	2	203
Sterling	12,609	0	12,609	Belle Fourche	91	85	6
Pierre	6,669	4,242	2,427	Pierre	68	5	63
Brookings	5,315	4,230	1,085	Fort Thompson	45	0	45
Mitchell	5,243	5,059	184	Mitchell	42	10	32
North Sioux City	4,037	229	3,808	Brookings	39	27	12
Loomis	3,612	0	3,612	Sturgis	28	14	14
Sioux Empire Plaza	2,645	0	2,645	Pickstown	23	0	23

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$96,106	$30,524	$1,755	$27,432	$36,395
Fiscal Year 1992	82,771	36,452	1,326	36,501	8,492
Fiscal Year 1991	124,947	50,379	114	31,115	43,339

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. BTG INC	$12,609	ADP Software	$12,609
2. UMX TECHNOLOGIES INC	6,845	Miscellaneous Items	3,425
3. RAVEN INDUSTRIES INC	4,839	Radio & TV Comm Equipment, Except Airborne	3,612
4. MORTENSON M A COMPANIES	4,206	Missile System Facilities	4,206
5. GTE CORPORATION	4,039	Logistics Support Services	4,039
Total of Above	$32,538	(43.5% of total awards over $25,000)	

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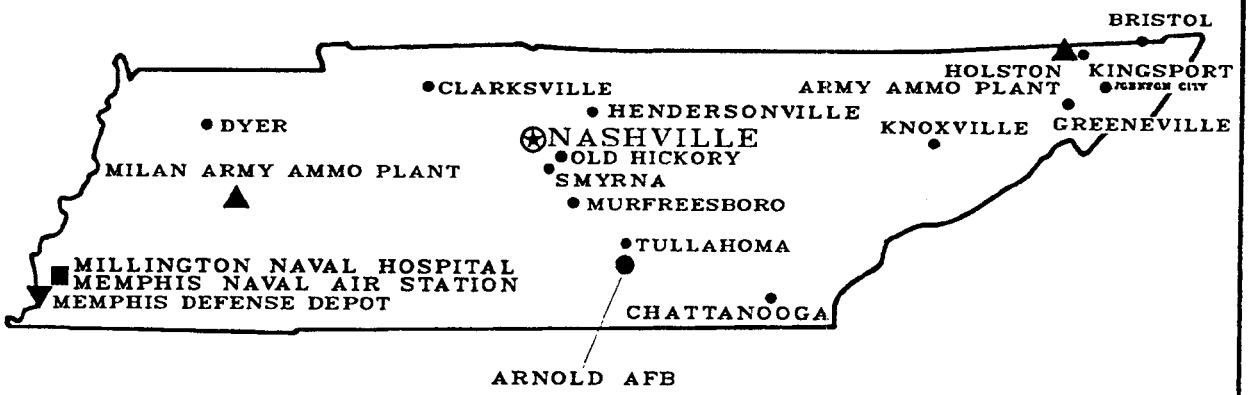
MAP NO. 43

TENNESSEE



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TENNESSEE

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	53,316	29,157	15,014	7,196	1,949
Active Duty Military	7,264	412	6,301	551	0
Civilian	6,260	2,385	904	1,022	1,949
Reserve & National Guard	39,792	26,360	7,809	5,623	0
II. Expenditures - Total	$2,241,166	$660,450	$507,129	$876,079	$197,508
A. Payroll Outlays - Total	1,068,382	388,356	375,516	236,623	67,887
Active Duty Military Pay	202,959	14,371	170,188	18,400	0
Civilian Pay	211,081	82,900	32,865	27,429	67,887
Reserve & National Guard Pay	125,006	87,530	13,111	24,365	0
Retired Military Pay	529,336	203,555	159,352	166,429	0
B. Prime Contracts Over $25,000 Total	1,172,784	272,094	131,613	639,456	129,621
Supply and Equipment Contracts	244,843	4,441	85,233	33,261	121,908
RDT&E Contracts	269,076	23,897	2,139	243,040	0
Service Contracts	568,451	157,045	40,753	362,940	7,713
Construction Contracts	22,098	18,395	3,488	215	0
Civil Function Contracts	68,316	68,316	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Memphis	$594,329	$181,208	$413,121	Millington	6,703	5,788	915
Arnold AFB	279,848	9,868	269,980	Memphis	3,293	334	2,959
Millington	229,148	207,364	21,784	Nashville	1,391	439	952
Nashville	104,870	91,990	12,880	Knoxville	421	49	372
Clarksville	83,179	58,355	24,824	Arnold AFB	383	128	255
Bristol	70,856	5,188	65,668	Murfreesboro	166	161	5
Tullahoma	62,764	7,645	55,119	Chattanooga	98	37	61
Knoxville	60,607	39,445	21,162	Smyrna	89	0	89
Holston AAP	58,340	0	58,340	Kingsport	70	22	48
Chattanooga	37,323	22,753	14,570	Johnson City	55	35	20

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$937,326	$240,429	$136,105	$484,792	$76,000
Fiscal Year 1992	1,262,110	507,638	115,150	495,620	143,702
Fiscal Year 1991	2,058,601	348,734	98,643	1,340,025	271,199

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. FEDERAL EXPRESS CORPORATION	$326,540	Passenger Air Charter Service	$222,891
2. VANADIUM ENTERPRISES CORP	118,208	RDTE/Other Research & Development-Mgmt & S	109,291
3. SVERDRUP CORPORATION	77,436	RDTE/Other Research & Development-Mgmt & S	64,919
4. RAYTHEON COMPANY	64,373	Guided Missile Components	45,912
5. ARVIN INDUSTRIES INC	61,406	RDTE/Other Research & Development-Mgmt & S	61,406
Total of Above	$647,963	(55.2% of total awards over $25,000)	

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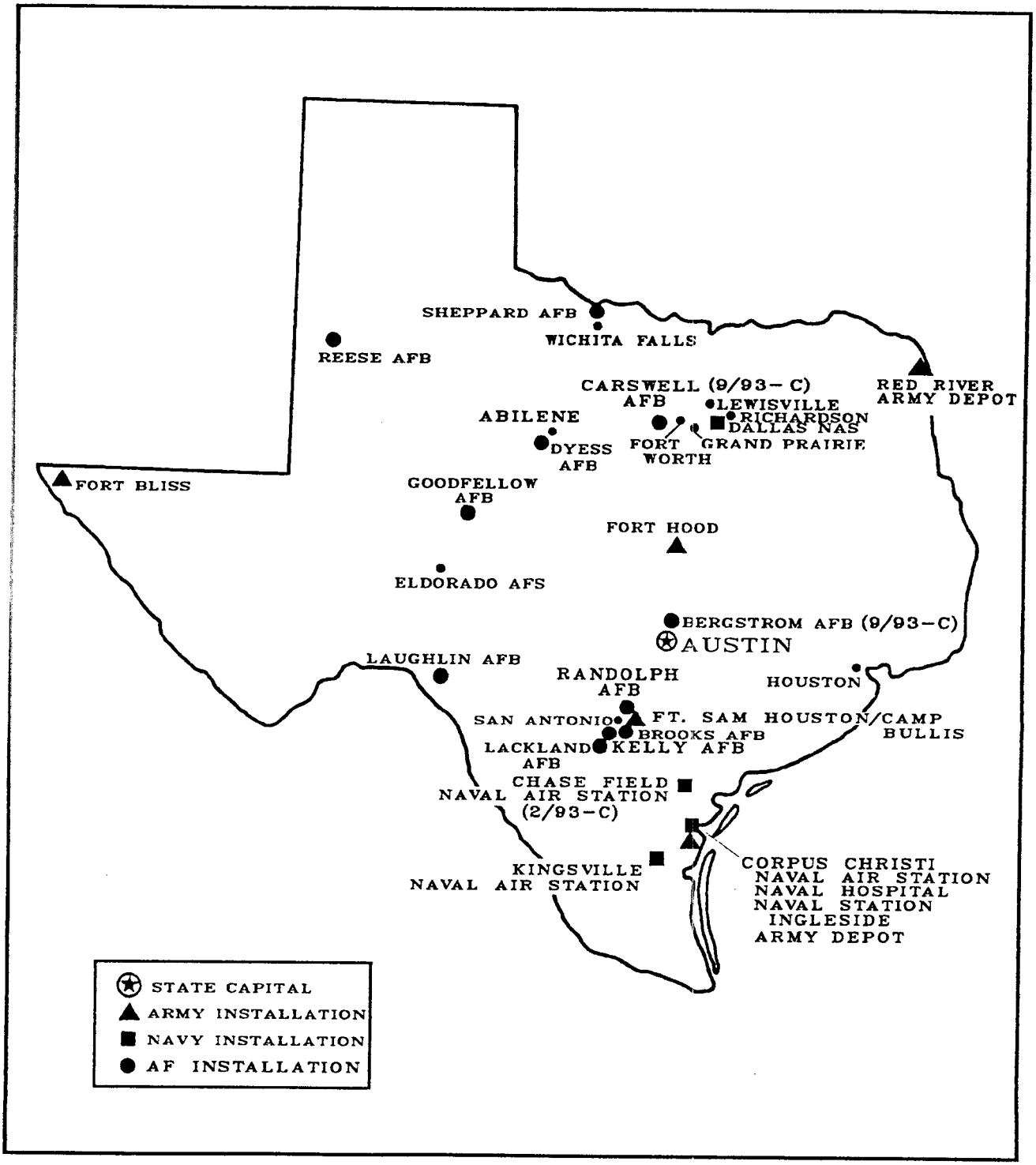
MAP NO. 44

TEXAS



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TEXAS

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	271,840	142,401	34,473	88,230	6,736
Active Duty Military	102,544	53,953	6,076	42,515	0
Civilian	54,341	20,281	1,994	25,330	6,736
Reserve & National Guard	114,955	68,167	26,403	20,385	0
II. Expenditures - Total	$15,346,504	$5,587,481	$2,641,691	$5,806,517	$1,310,815
A. Payroll Outlays - Total	7,201,074	3,088,752	710,561	3,183,886	217,875
Active Duty Military Pay	2,585,447	1,319,835	237,585	1,028,027	0
Civilian Pay	1,751,277	705,033	66,018	762,351	217,875
Reserve & National Guard Pay	243,639	150,266	30,949	62,424	0
Retired Military Pay	2,620,711	913,618	376,009	1,331,084	0
B. Prime Contracts Over $25,000 Total	8,145,430	2,498,729	1,931,130	2,622,631	1,092,940
Supply and Equipment Contracts	3,458,801	498,379	543,614	1,376,686	1,040,122
RDT&E Contracts	1,744,152	675,217	840,598	217,862	10,475
Service Contracts	2,292,966	734,965	505,895	1,009,763	42,343
Construction Contracts	522,571	463,228	41,023	18,320	0
Civil Function Contracts	126,940	126,940	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Fort Worth	$2,491,622	$189,070	$2,302,552	Fort Hood	33,695	29,552	4,143
San Antonio	2,271,483	1,630,004	641,479	Kelly AFB	19,317	4,650	14,667
Fort Hood	1,159,423	857,030	302,393	Fort Bliss	18,175	16,123	2,052
Dallas	939,598	136,735	802,863	Lackland AFB	16,437	13,464	2,973
Corpus Christi	614,491	274,702	339,789	Fort Sam Houston	12,514	8,640	3,874
Fort Bliss	608,710	488,367	120,343	Randolph AFB	8,025	5,165	2,860
Houston	451,397	108,447	342,950	Shep AFB/Wich Falls	7,998	6,519	1,479
Grand Prairie	390,250	23,033	367,217	Corpus Christi	6,019	1,852	4,167
Shep AFB/Wich Falls	383,887	204,525	179,362	Dyess AFB	5,490	5,043	447
Austin	370,752	146,817	223,935	Brooks AFB	3,390	1,798	1,592

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$9,010,273	$2,484,013	$1,708,662	$3,701,601	$1,115,997
Fiscal Year 1992	8,671,793	2,695,313	1,454,931	3,311,311	1,210,238
Fiscal Year 1991	10,225,414	2,400,595	1,758,415	4,592,133	1,474,271

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. TEXTRON INC	$984,510	RDTE/Aircraft-Engineering Development	$643,829
2. LOCKHEED CORPORATION	713,483	Aircraft Fixed Wing	410,671
3. TEXAS INSTRUMENTS INCORPORATED	687,808	Guided Missile Components	165,219
4. GENERAL DYNAMICS CORPORATION	611,673	Aircraft Fixed Wing	614,049
5. LTV AEROSPACE AND DEFENSE CO	276,036	RDTE/Missile and Space Systems-Advanced De	211,690
Total of Above	$3,273,510	(40.2% of total awards over $25,000)	

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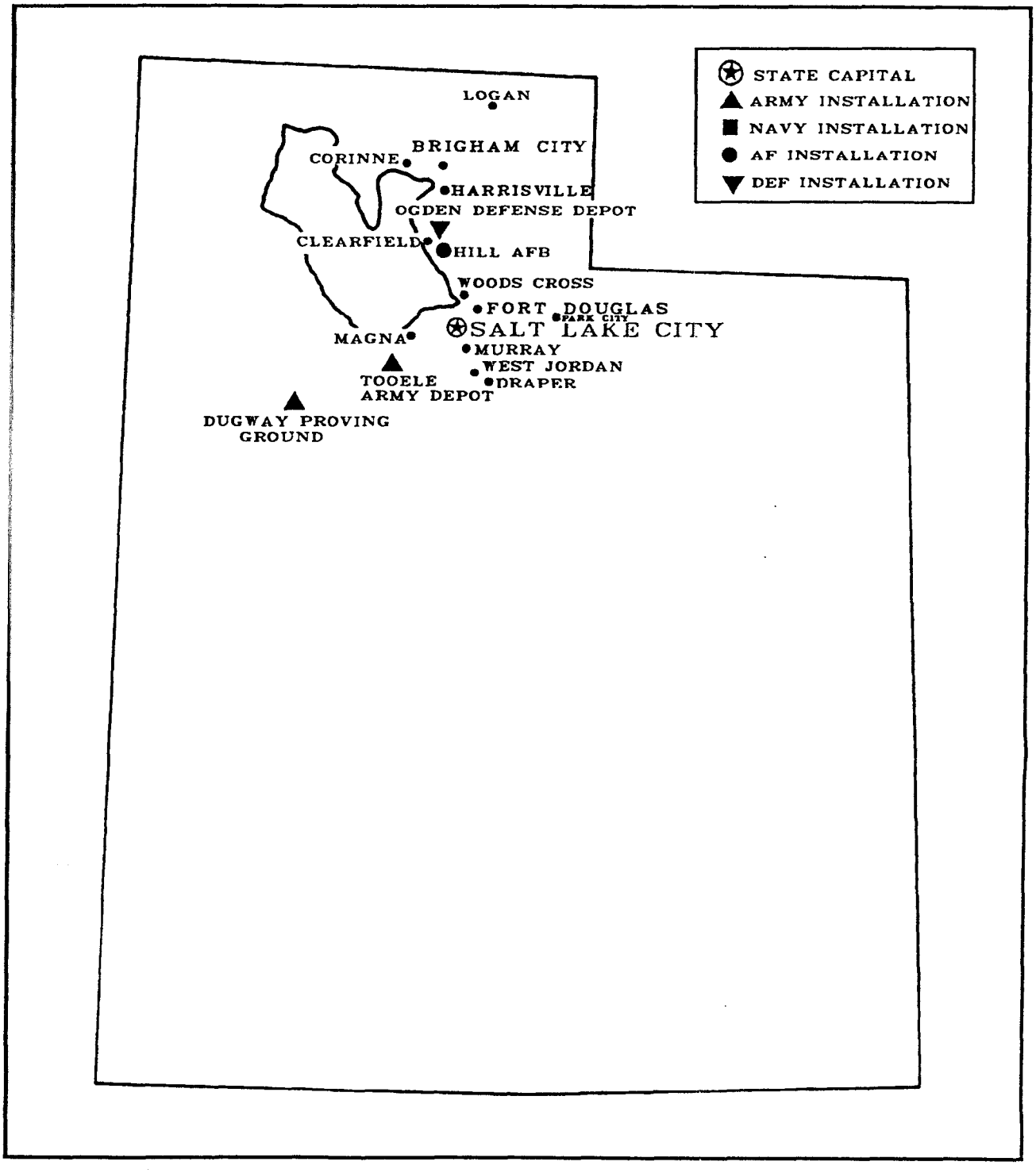
MAP NO. 45

UTAH



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UTAH

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	38,498	14,071	2,519	18,717	3,191
Active Duty Military	5,693	542	117	5,034	0
Civilian	15,451	2,937	63	9,260	3,191
Reserve & National Guard	17,354	10,592	2,339	4,423	0
II. Expenditures - Total	$1,427,415	$410,608	$120,695	$676,603	$219,509
A. Payroll Outlays - Total	906,245	206,705	37,075	550,669	111,796
Active Duty Military Pay	151,998	18,152	4,006	129,840	0
Civilian Pay	532,307	100,578	2,768	317,165	111,796
Reserve & National Guard Pay	69,514	46,163	3,380	19,971	0
Retired Military Pay	152,426	41,812	26,921	83,693	0
B. Prime Contracts Over $25,000 Total	521,170	203,903	83,620	125,934	107,713
Supply and Equipment Contracts	182,500	11,440	68,949	36,675	65,436
RDT&E Contracts	69,423	13,793	11,003	10,903	33,724
Service Contracts	238,485	150,595	3,668	76,809	7,413
Construction Contracts	27,848	25,161	0	1,547	1,140
Civil Function Contracts	2,914	2,914	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Hill AFB	$558,614	$448,615	$109,999	Hill AFB	14,118	4,791	9,327
Tooele Army Depot	218,653	112,724	105,929	Tooele Army Depot	3,403	35	3,368
Salt Lake City	157,376	57,729	99,647	Ogden	1,038	158	880
Dugway	70,947	35,909	35,038	Dugway	773	163	610
Ogden	66,800	50,651	16,149	Salt Lake City	622	178	444
Brigham City	51,404	8,488	42,916	Draper	297	100	197
Logan	28,654	5,516	23,138	Fort Douglas	223	87	136
Park City	24,474	3,332	21,142	Brigham City	136	4	132
Draper	21,595	21,241	354	Magna	86	7	79
Woods Cross	20,844	749	20,095	West Jordan	76	0	76

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$542,372	$202,711	$78,143	$177,842	$83,676
Fiscal Year 1992	615,900	225,313	76,611	164,572	149,404
Fiscal Year 1991	801,672	206,120	140,246	285,709	169,597

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work: FSC or Service Code Description	Amount
1. EG&G INC	$81,354	Architect-Engineering Services	$81,354
2. THIOKOL CORPORATION	42,916	Guided Missile Components	18,539
3. AMOCO CORPORATION	21,391	Liquid Propellants & Fuel, Petroleum Base	21,391
4. LUCAS INDUSTRIES PLC	21,142	Gas Turbines and Jet Engines, Acft & Comps	16,285
5. UTAH STATE UNIVERSITY	19,899	RDTE/Other Defense-Advanced Development	18,079
Total of Above	$186,702	(35.8% of total awards over $25,000)	

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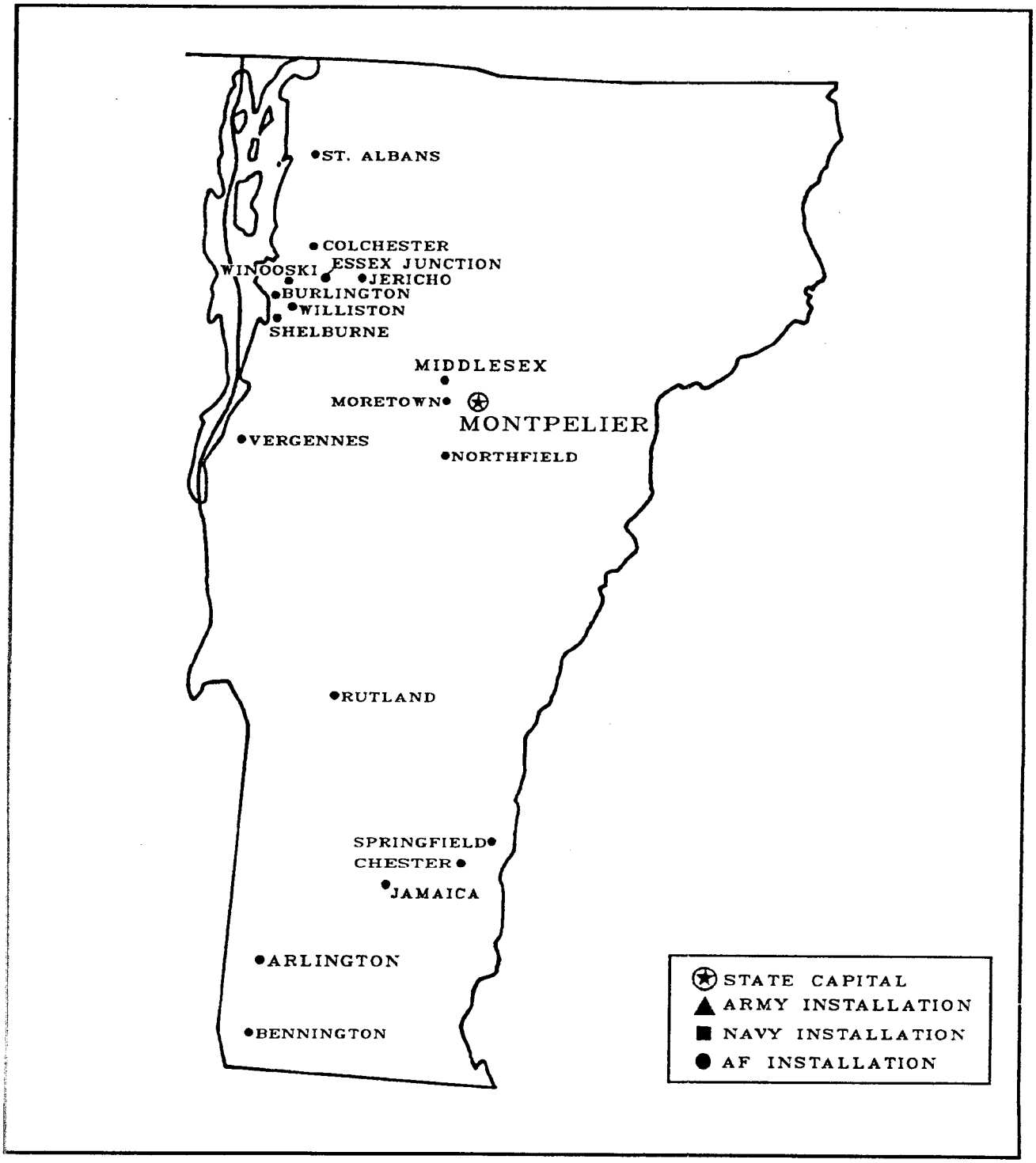
MAP NO. 46

VERMONT



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VERMONT

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	7,064	4,920	512	1,582	50
Active Duty Military	153	26	13	114	0
Civilian	632	299	0	283	50
Reserve & National Guard	6,279	4,595	499	1,185	0
II. Expenditures - Total	$151,297	$75,895	$33,649	$36,949	$4,804
A. Payroll Outlays - Total	93,863	48,982	11,070	31,624	2,187
Active Duty Military Pay	5,651	824	727	4,100	0
Civilian Pay	20,139	8,876	14	9,062	2,187
Reserve & National Guard Pay	28,406	22,500	257	5,649	0
Retired Military Pay	39,667	16,782	10,072	12,813	0
B. Prime Contracts Over $25,000 Total	57,434	26,913	22,579	5,325	2,617
Supply and Equipment Contracts	30,648	8,831	14,434	4,953	2,430
RDT&E Contracts	12,928	9,501	3,005	279	143
Service Contracts	10,084	6,585	3,362	93	44
Construction Contracts	3,233	1,455	1,778	0	0
Civil Function Contracts	541	541	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Burlington	$63,130	$16,467	$46,663	South Burlington	303	0	303
Colchester	13,955	13,693	262	Colchester	178	6	172
South Burlington	10,730	10,684	46	Burlington	165	119	46
Vergennes	5,740	933	4,807	Northfield	27	23	4
Northfield	4,535	2,809	1,726	Jericho	24	0	24
Jericho	3,509	3,462	47	Rutland	19	0	19
St. Albans	2,325	2,085	240	Winooski	19	3	16
Arlington	2,070	273	1,797	Montpelier	8	1	7
Williston	1,972	1,860	112	St. Albans	8	0	8
Winooski	1,870	1,802	68	Vergennes	7	0	7

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$62,735	$24,297	$22,839	$13,146	$2,453
Fiscal Year 1992	63,027	23,883	28,389	8,699	2,056
Fiscal Year 1991	71,362	8,686	32,950	24,711	5,015

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. MARTIN MARIETTA CORPORATION	$37,600	Guns, through 30 mm	$11,485
2. GOODRICH B F COMPANY THE	4,807	Flow, Level, Motion Measuring Instruments	2,641
3. J.C.N. CONSTRUCTION CO INC	2,624	Maint/Maintenance Buildings	2,624
4. NECCO INC	1,778	Maintenance Buildings	1,778
5. GENERAL SCIENTIFIC CORPORATION	1,753	Engineering Technical Services	1,753
Total of Above	$48,562	(84.6% of total awards over $25,000)	

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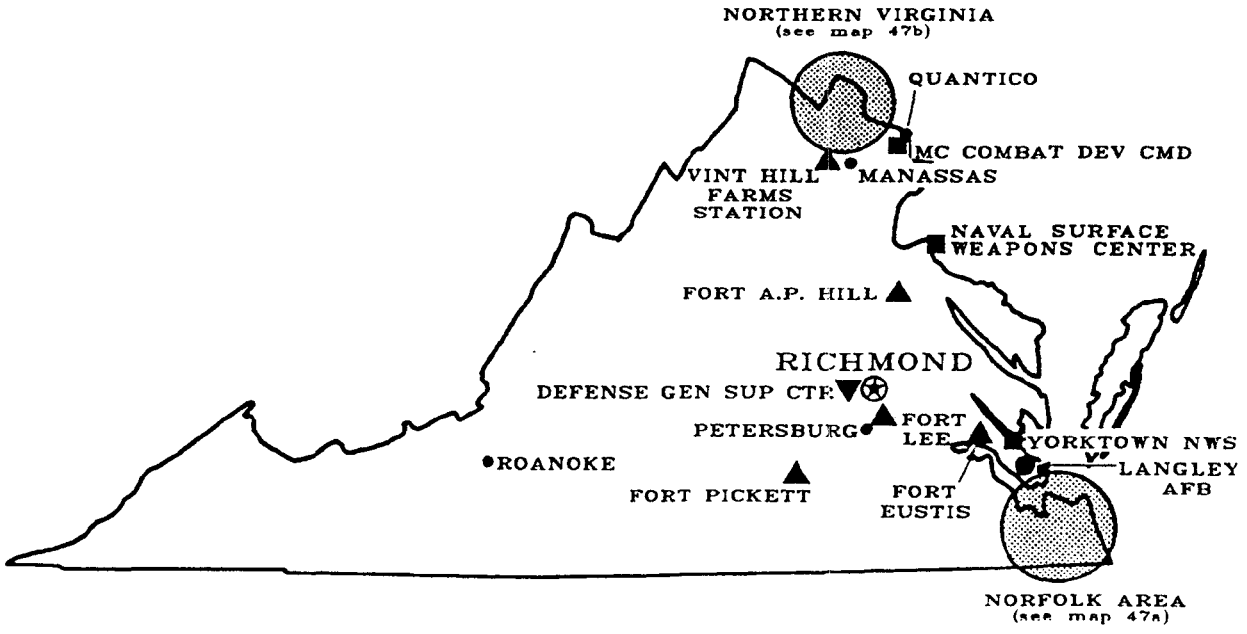
MAP NO. 47

VIRGINIA



STATE CAPITAL
ARMY INSTALLATION
NAVY INSTALLATION
AF INSTALLATION
DEF INSTALLATION

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VIRGINIA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	242,882	84,542	110,607	25,021	22,712
Active Duty Military	90,032	26,743	47,733	15,556	0
Civilian	98,841	25,436	46,272	4,421	22,712
Reserve & National Guard	54,009	32,363	16,602	5,044	0
II. Expenditures - Total	$19,499,775	$5,117,305	$9,890,664	$2,114,988	$2,376,818
A. Payroll Outlays - Total	11,482,693	2,858,669	6,329,295	1,214,081	1,080,648
Active Duty Military Pay	4,771,560	890,777	3,292,085	588,698	0
Civilian Pay	4,510,502	1,209,246	2,068,968	151,640	1,080,648
Reserve & National Guard Pay	99,857	76,362	15,687	7,808	0
Retired Military Pay	2,100,774	682,284	952,555	465,935	0
B. Prime Contracts Over $25,000 Total	8,017,082	2,258,636	3,561,369	900,907	1,296,170
Supply and Equipment Contracts	1,499,608	379,784	577,676	288,667	253,481
RDT&E Contracts	1,244,337	444,704	327,956	182,878	288,799
Service Contracts	4,845,939	1,218,757	2,453,597	421,183	752,402
Construction Contracts	363,001	151,194	202,140	8,179	1,488
Civil Function Contracts	64,197	64,197	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Arlington	$3,284,492	$2,272,245	$1,012,247	Arlington	41,711	15,803	25,908
Norfolk	3,227,924	2,564,906	663,018	Norfolk	31,777	16,749	15,028
Alexandria	1,233,777	704,915	528,862	Portsmouth	14,028	3,458	10,570
Virginia Beach	1,209,398	1,033,814	175,584	Virginia Beach	11,881	9,591	2,290
McLean	1,161,548	57,811	1,103,737	Langley AFB	11,276	9,333	1,943
Newport News	925,306	384,174	541,132	Alexandria	11,194	3,206	7,988
Portsmouth	741,042	557,307	183,735	Fort Belvoir	9,437	3,903	5,534
Hampton	563,408	473,947	89,461	Quantico	8,857	6,864	1,993
Falls Church	509,184	130,853	378,331	Fort Eustis	8,279	5,866	2,413
Reston	503,835	77,162	426,673	Fort Lee	7,398	4,360	3,038

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$7,482,748	$1,685,269	$3,678,240	$755,787	$1,363,452
Fiscal Year 1992	6,570,793	1,514,001	3,228,636	706,526	1,121,630
Fiscal Year 1991	6,780,702	1,592,831	3,290,856	927,414	969,601

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. TENNECO INC	$489,425	Marine Architect & Engineering Services	$127,958
2. BLACK & DECKER CORPORATION	271,766	ADPE Configuration	75,216
3. COMPUTER SCIENCES CORPORATION	267,799	Other ADP & Telecommunication Services	174,312
4. INTERNATIONAL BUS MCHS CORP	227,535	Underwater Sound Equipment	119,181
5. UNISYS CORPORATION	208,581	ADP Support Equip	61,573
Total of Above	$1,465,106	(18.3% of total awards over $25,000)	

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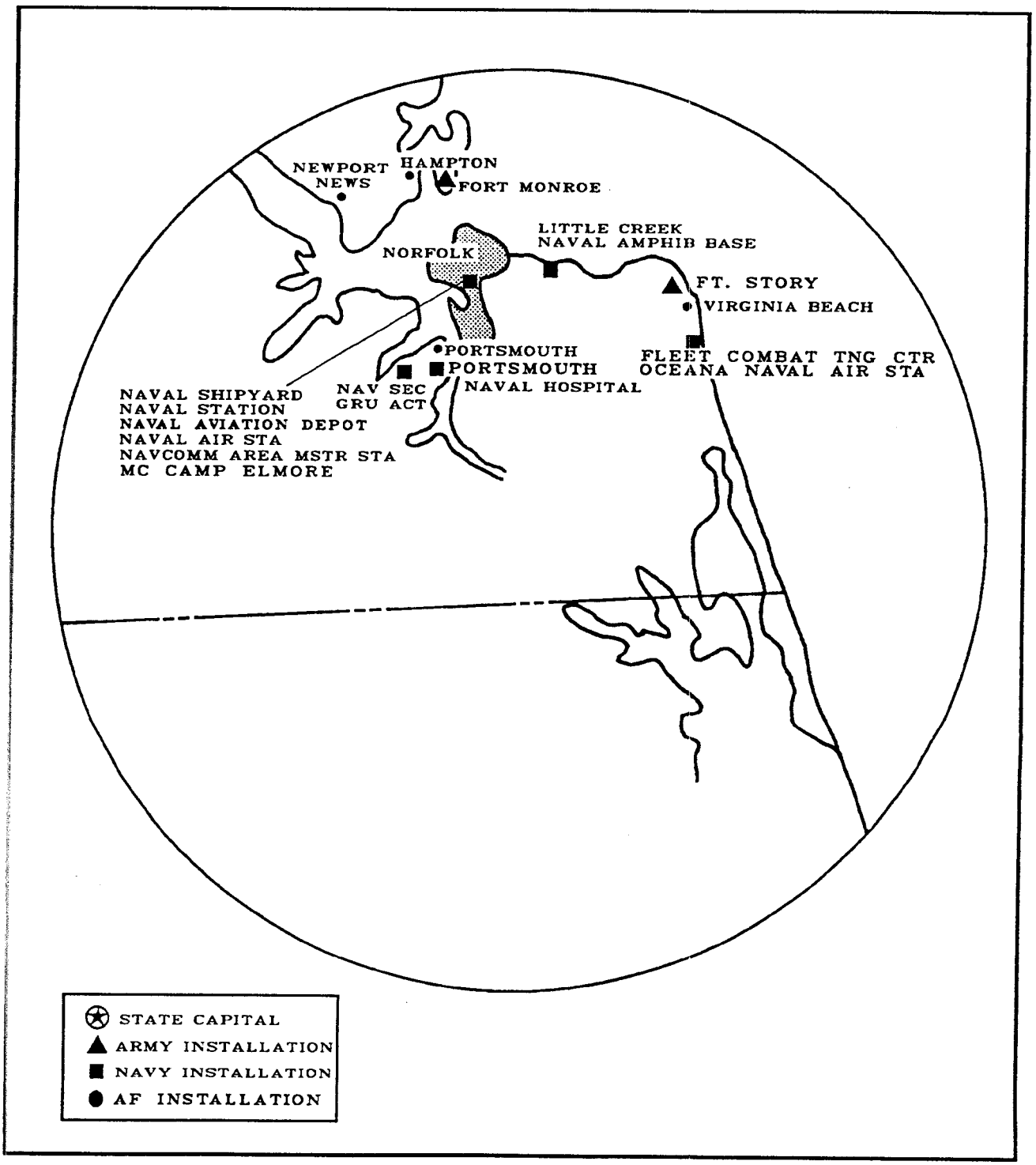
MAP NO. 47a

NORFOLK AREA



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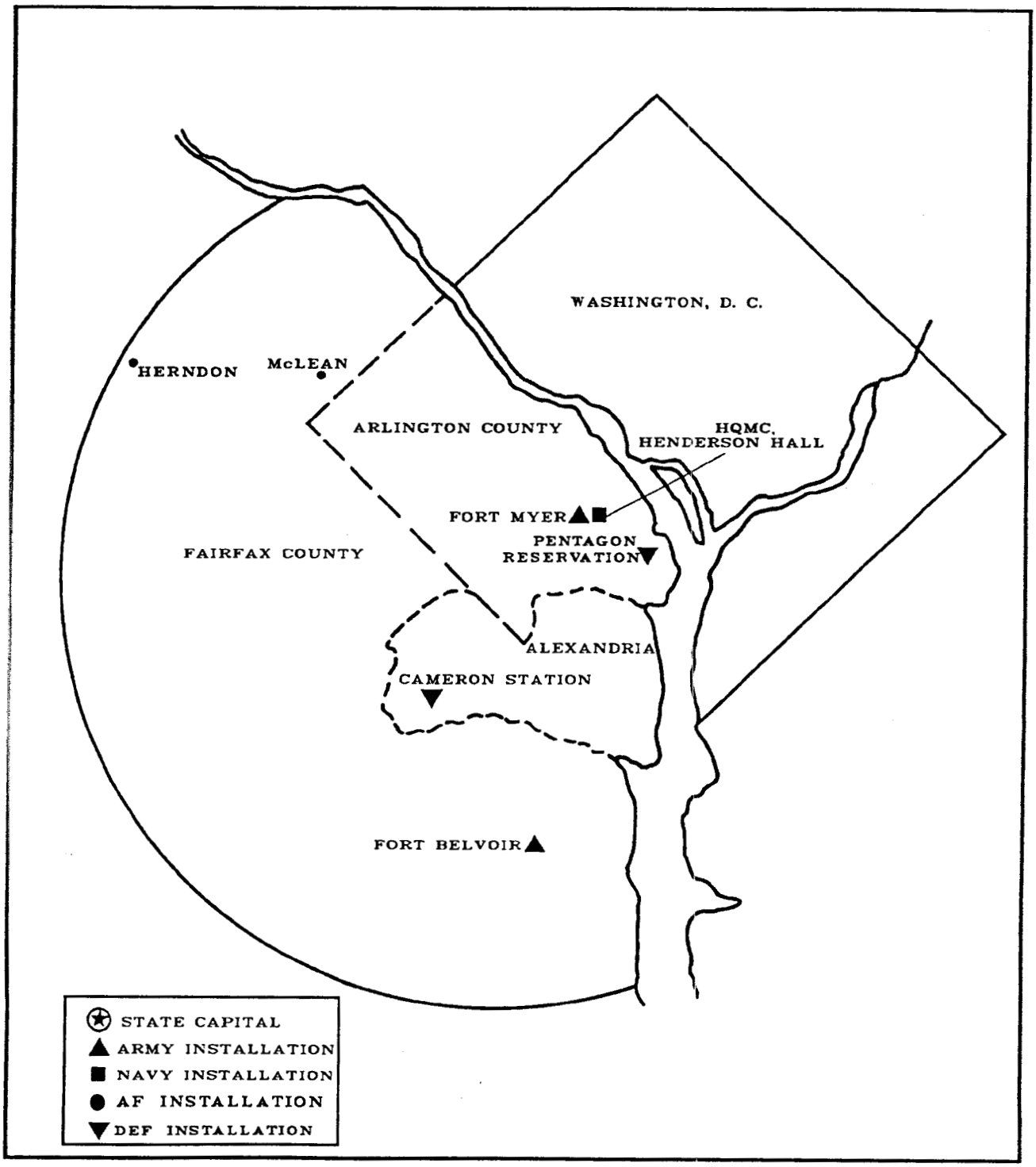
MAP NO. 47b

NORTHERN VIRGINIA



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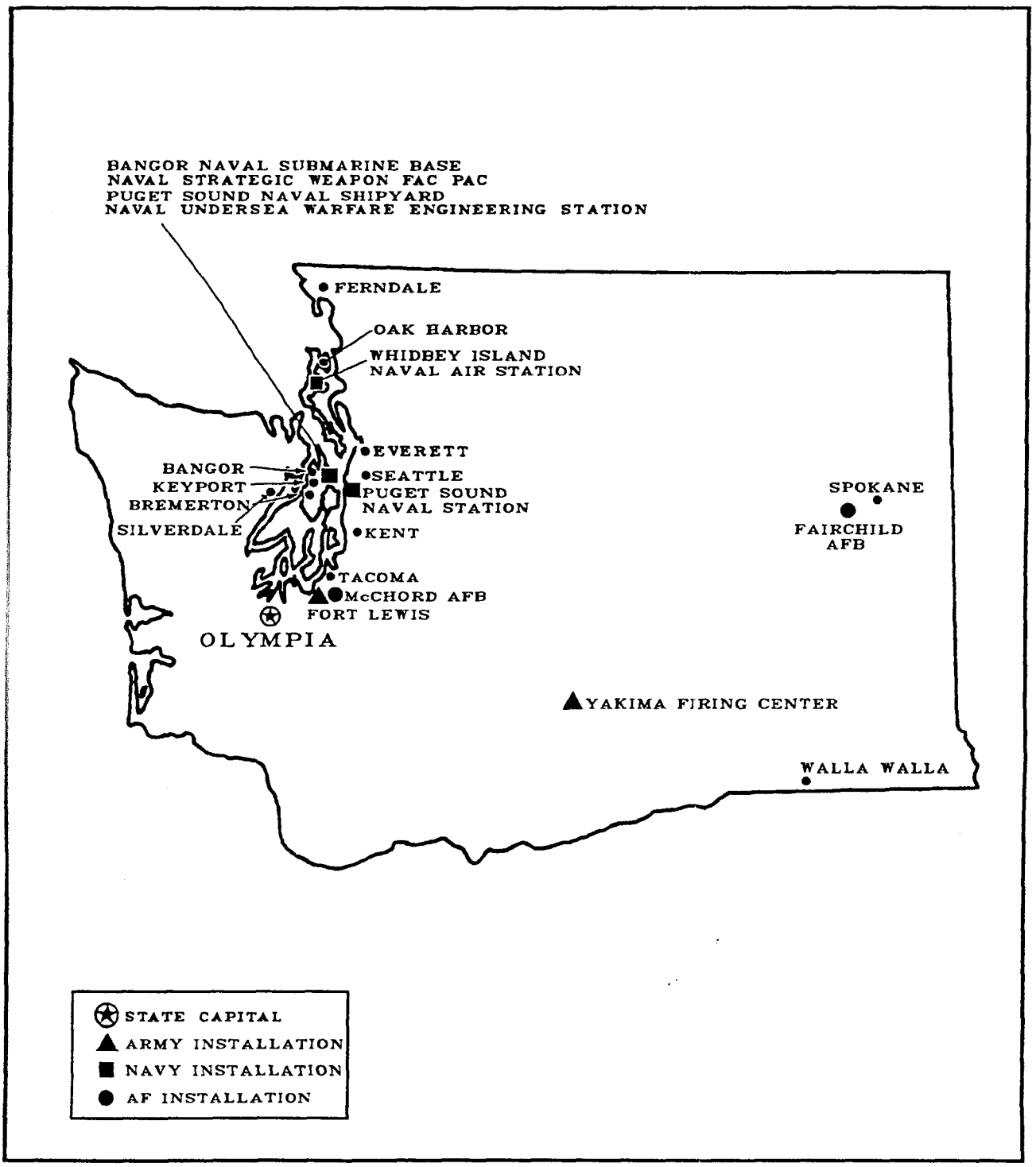
MAP NO. 48

WASHINGTON



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WASHINGTON

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	106,250	46,930	38,101	19,493	1,726
Active Duty Military	35,782	17,315	9,147	9,320	0
Civilian	26,961	5,706	17,405	2,124	1,726
Reserve & National Guard	43,507	23,909	11,549	8,049	0
II. Expenditures - Total	$5,276,924	$1,232,767	$2,172,140	$1,447,811	$424,206
A. Payroll Outlays - Total	3,416,190	978,127	1,695,157	684,768	58,138
Active Duty Military Pay	1,293,938	435,178	620,982	237,778	0
Civilian Pay	1,016,468	157,746	716,095	84,489	58,138
Reserve & National Guard Pay	127,688	75,107	18,929	33,652	0
Retired Military Pay	978,096	310,096	339,151	328,849	0
B. Prime Contracts Over $25,000 Total	1,860,734	254,640	476,983	763,043	366,068
Supply and Equipment Contracts	760,364	15,571	64,105-	479,765	329,133
RDT&E Contracts	143,155	30,785	24,702	73,121	14,547
Service Contracts	689,322	102,711	363,870	200,353	22,388
Construction Contracts	188,636	26,316	152,516	9,804	0
Civil Function Contracts	79,257	79,257	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Bremerton	$843,392	$727,062	$116,330	Fort Lewis	19,470	16,898	2,572
Seattle	813,226	151,841	661,385	Bremerton	13,292	1,748	11,544
Fort Lewis	593,627	502,206	91,421	McChord AFB	6,057	4,736	1,321
Bangor	370,262	225,261	145,001	Fairchild AFB	5,067	4,258	809
Whidbey Island NAS	263,188	236,878	26,310	Bangor	4,508	2,254	2,254
McChord AFB	241,775	191,904	49,871	Whidbey Island NAS	4,009	3,220	789
Ferndale	240,746	1,720	239,026	Keyport	2,640	291	2,349
Fairchild AFB	171,778	139,315	32,463	Seattle	1,996	775	1,221
Tacoma	170,967	129,384	41,583	Tacoma	1,497	31	1,466
Keyport	141,764	113,829	27,935	Everett	710	335	375

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$1,890,677	$270,491	$498,503	$868,204	$253,479
Fiscal Year 1992	2,217,132	250,909	1,161,454	507,152	297,617
Fiscal Year 1991	1,759,657	311,730	582,940	345,044	519,943

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. BOEING COMPANY THE	$615,476	Radar Equipment, Airborne	$373,686
2. ATLANTIC RICHFIELD COMPANY	238,945	Liquid Propellants & Fuel, Petroleum Base	129,227
3. HUNT BUILDING CORPORATION	59,391	Family Housing Facilities	59,391
4. JOHNSON CONTROLS INC	49,954	Facilities Operations Support Services	49,954
5. CROWLEY MARITIME CORPORATION	26,175	Other Vehicle Charter for Transportation o	23,419
Total of Above	$989,941	(53.2% of total awards over $25,000)	

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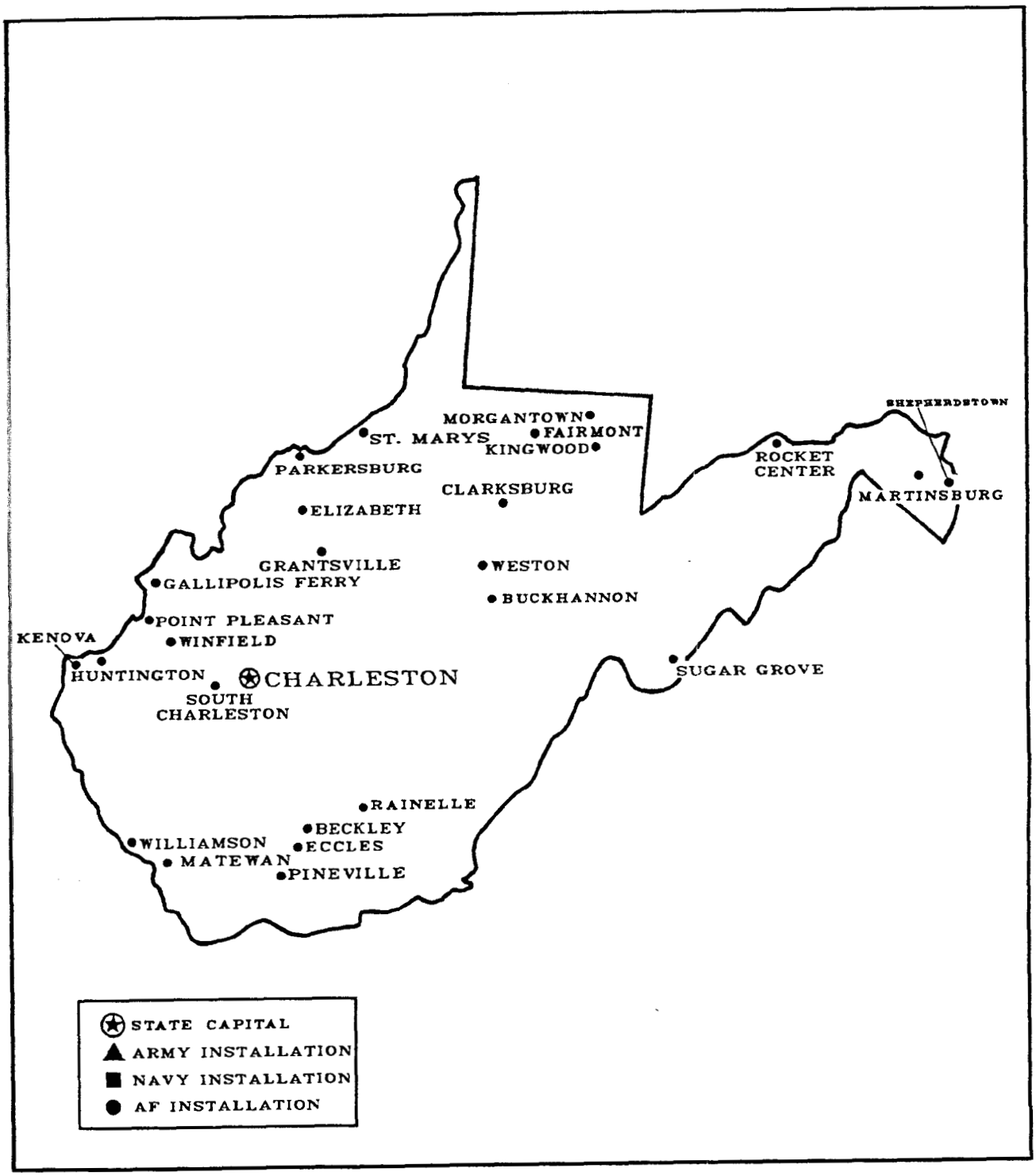
MAP NO. 49

WEST VIRGINIA



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WEST VIRGINIA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	16,972	11,230	2,346	3,367	29
Active Duty Military	572	178	242	152	0
Civilian	1,514	1,024	64	397	29
Reserve & National Guard	14,886	10,028	2,040	2,818	0
II. Expenditures - Total	$399,844	$226,674	$84,781	$68,405	$19,984
A. Payroll Outlays - Total	224,062	113,340	44,848	64,889	985
Active Duty Military Pay	16,538	5,463	6,317	4,758	0
Civilian Pay	48,459	34,366	2,003	11,105	985
Reserve & National Guard Pay	47,483	31,817	2,306	13,360	0
Retired Military Pay	111,582	41,694	34,222	35,666	0
B. Prime Contracts Over $25,000 Total	175,782	113,334	39,933	3,516	18,999
Supply and Equipment Contracts	36,533	440	14,052	3,464	18,577
RDT&E Contracts	7,050	1,298	5,752	0	0
Service Contracts	26,415	5,812	20,129	52	422
Construction Contracts	18,617	18,617	0	0	0
Civil Function Contracts	87,167	87,167	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Shepherdstown	$41,237	$1,237	$40,000	Huntington	456	15	441
Rocket Center	33,083	0	33,083	Charleston	361	128	233
Charleston	29,120	23,565	5,555	Martinsburg	275	59	216
Huntington	24,588	23,224	1,364	Sugar Grove	213	160	53
Martinsburg	20,936	20,357	579	Beckley	97	72	25
Morgantown	12,562	6,603	5,959	Buckhannon	77	0	77
Winfield	11,500	0	11,500	Point Pleasant	57	0	57
Wheeling	11,421	4,178	7,243	Morgantown	55	22	33
Gallipolis Ferry	11,069	1,411	9,658	Parkersburg	53	2	51
Parkersburg	8,946	8,373	573	Eccles	50	50	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$132,193	$69,186	$23,979	$8,356	$30,672
Fiscal Year 1992	83,282	44,117	22,631	4,301	12,233
Fiscal Year 1991	152,433	129,669	28,640	2,036	7,912-

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. CENTEX CORPORATION	$40,000	Other Conservation & Development Facilitie	$40,000
2. HERCULES INCORPORATED	33,083	Maint/Maintenance Buildings	17,120
3. BILFINGER & BERGER BAUAG	11,784	Dams	11,784
4. KIEWIT PETER SONS DE CORP	11,300	Other Conservation & Development Facilitie	8,600
5. MARCH-WESTIN COMPANY INC	7,573	Other Administrative & Service Buildings	4,810
Total of Above	$103,740	(59.0% of total awards over $25,000)	

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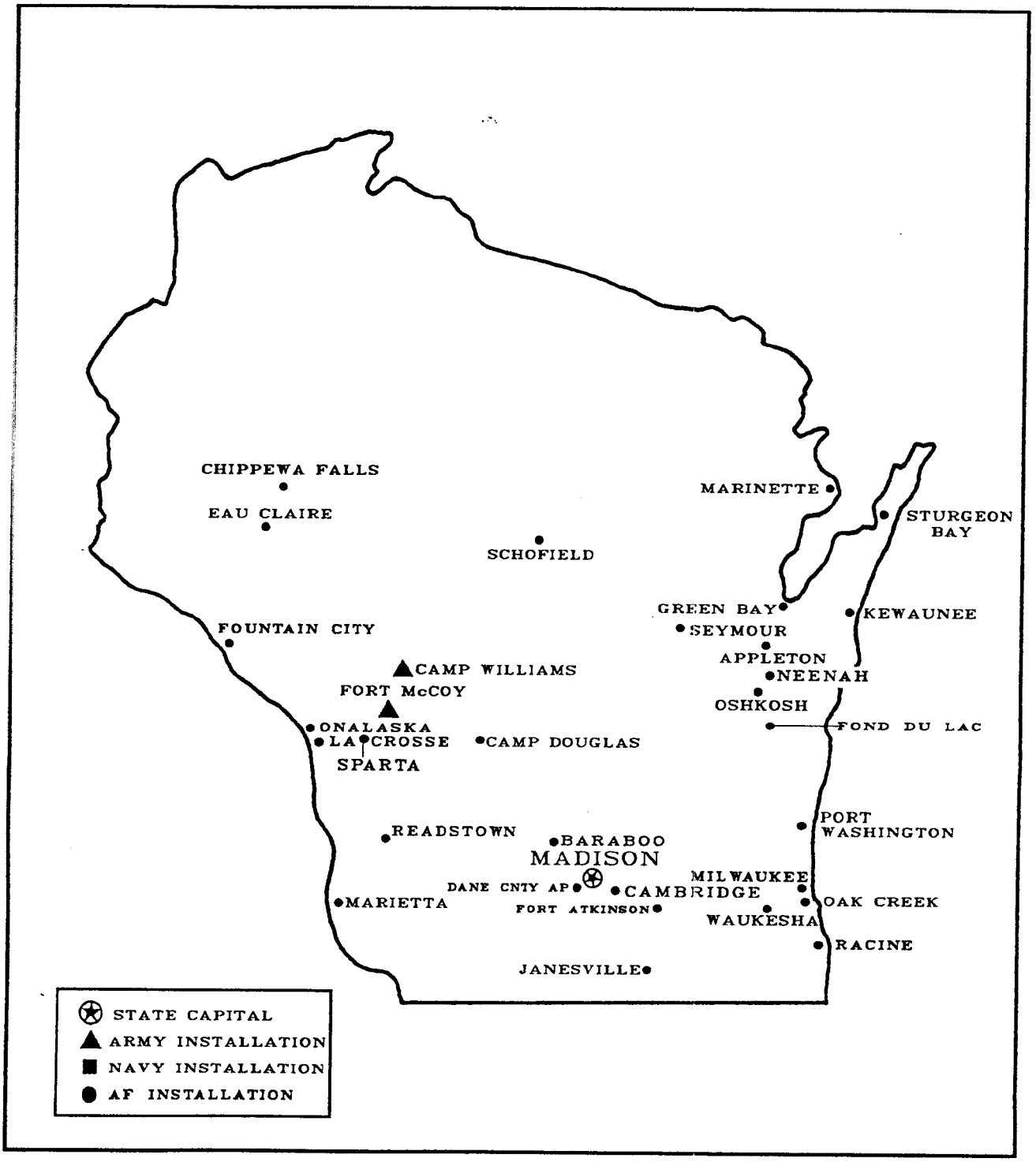
MAP NO. 50

WISCONSIN



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WISCONSIN

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	38,988	26,310	6,242	6,145	291
Active Duty Military	826	333	194	299	0
Civilian	3,268	2,105	41	831	291
Reserve & National Guard	34,894	23,872	6,007	5,015	0
II. Expenditures - Total	$1,193,638	$795,281	$118,630	$134,444	$145,283
A. Payroll Outlays - Total	419,974	239,348	64,109	107,377	9,140
Active Duty Military Pay	30,260	12,670	7,399	10,191	0
Civilian Pay	115,308	83,799	1,921	20,448	9,140
Reserve & National Guard Pay	106,223	80,606	5,809	19,808	0
Retired Military Pay	168,183	62,273	48,980	56,930	0
B. Prime Contracts Over $25,000 Total	773,664	555,933	54,521	27,067	136,143
Supply and Equipment Contracts	638,410	452,087	43,466	19,935	122,922
RDT&E Contracts	5,452	2,741	1,207	1,318	186
Service Contracts	66,119	37,422	9,848	5,814	13,035
Construction Contracts	28,654	28,654	0	0	0
Civil Function Contracts	35,029	35,029	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Oshkosh	$415,233	$5,483	$409,750	Fort McCoy	1,189	84	1,105
Milwaukee	114,403	57,975	56,428	Milwaukee	1,105	332	773
Madison	81,972	40,764	41,208	Madison	493	105	388
Fort McCoy	77,630	54,768	22,862	Camp Williams	158	0	158
Waukesha	30,734	4,442	26,292	Fountain City	131	0	131
Neenah	23,003	963	22,040	Sparta	119	0	119
Sturgeon Bay	20,315	3,267	17,048	Camp Douglas	112	90	22
La Crosse	20,214	3,838	16,376	Cambridge	65	0	65
Sparta	15,803	3,044	12,759	Dane County Reg A/P	65	65	0
Baraboo	12,471	1,292	11,179	Eau Claire	51	21	30

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$845,488	$538,399	$119,308	$31,900	$155,881
Fiscal Year 1992	893,464	631,424	97,962	43,735	120,343
Fiscal Year 1991	967,548	668,818	80,596	38,421	179,713

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. OSHKOSH TRUCK CORPORATION	$408,674	Trucks and Truck Tractors, Wheeled	$390,478
2. GENERAL ELECTRIC COMPANY	32,289	Hospital Furniture, Equip, Utensils & Sup	19,890
3. PETERSON BUILDERS INC	16,760	Miscellaneous Vessels	6,858
4. O R C INDUSTRIES INC	13,655	Outerwear, Men's	11,244
5. ASTRONAUTICS CORP OF AMERICA	12,787	Navigational Instruments	4,122
Total of Above	$484,165	(62.6% of total awards over $25,000)	

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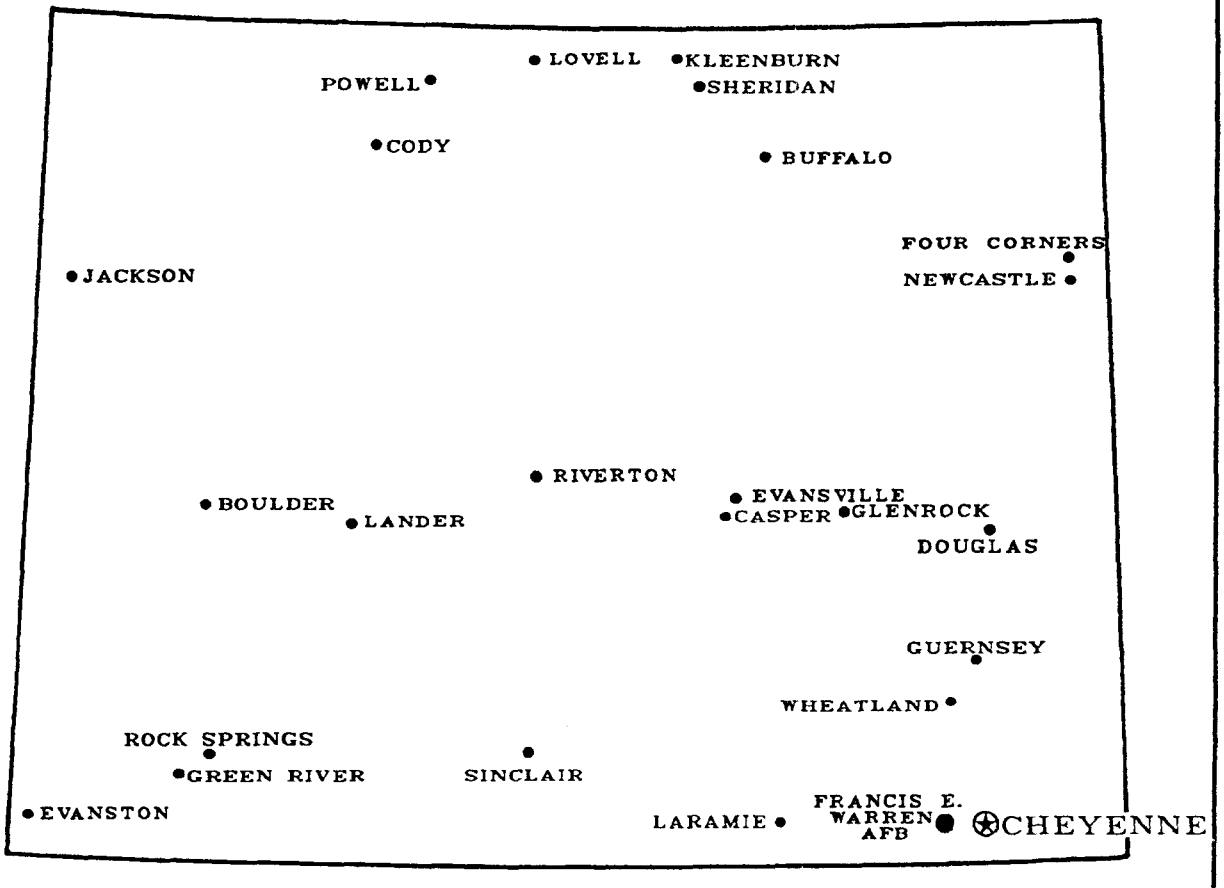
MAP NO. 51

WYOMING



STATE CAPITAL
ARMY INSTALLATION
NAVY INSTALLATION
AF INSTALLATION

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WYOMING

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	9,627	2,908	630	6,018	71
Active Duty Military	3,936	44	1	3,891	0
Civilian	978	189	0	718	71
Reserve & National Guard	4,713	2,675	629	1,409	0
II. Expenditures - Total	$245,723	$40,557	$10,543	$174,390	$20,233
A. Payroll Outlays - Total	189,323	27,933	10,543	148,938	1,909
Active Duty Military Pay	89,337	1,751	58	87,528	0
Civilian Pay	32,995	6,166	0	24,920	1,909
Reserve & National Guard Pay	15,480	9,213	147	6,120	0
Retired Military Pay	51,511	10,803	10,338	30,370	0
B. Prime Contracts Over $25,000 Total	56,400	12,624	0	25,452	18,324
Supply and Equipment Contracts	17,655	343	0	157	17,155
RDT&E Contracts	63	63	0	0	0
Service Contracts	30,421	6,504	0	22,748	1,169
Construction Contracts	3,754	1,207	0	2,547	0
Civil Function Contracts	4,507	4,507	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
F.E. Warren AFB	$128,664	$102,990	$25,674	F.E. Warren AFB	4,325	3,739	586
Cheyenne	48,568	46,749	1,819	Cheyenne	375	71	304
Newcastle	16,955	431	16,524	Powell	73	66	7
Laramie	11,906	4,525	7,381	Guernsey	52	0	52
Sheridan	2,921	2,779	142	Laramie	27	20	7
Gillette	2,558	981	1,577	Casper	21	17	4
Powell	2,325	2,262	63	Boulder	7	7	0
Rock Springs	2,050	1,012	1,038	Riverton	6	3	3
Glenrock	1,519	226	1,293	Lander	4	3	1
Riverton	1,158	1,027	131	Douglas	3	3	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$57,804	$13,471	$0	$21,981	$22,352
Fiscal Year 1992	61,346	12,658	0	16,611	32,077
Fiscal Year 1991	63,322	3,661	47	21,515	38,099

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this State	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. HERMES CONSOLIDATED, INC	$16,524	Liquid Propellants & Fuel, Petroleum Base	$16,524
2. KLOEFKORN-BALLARD CONSTR	5,413	Maint/Office Buildings	5,413
3. BOWMAN, JOHN INC	3,377	Maint/Office Buildings	659
4. GROWLING BEAR COMPANY	2,671	Maint/Maintenance Buildings	2,671
5. DAMES & MOORE INC	2,616	Other Environ Svcs, Studies, & Analytical	2,616
Total of Above	$30,601	(54.3% of total awards over $25,000)	

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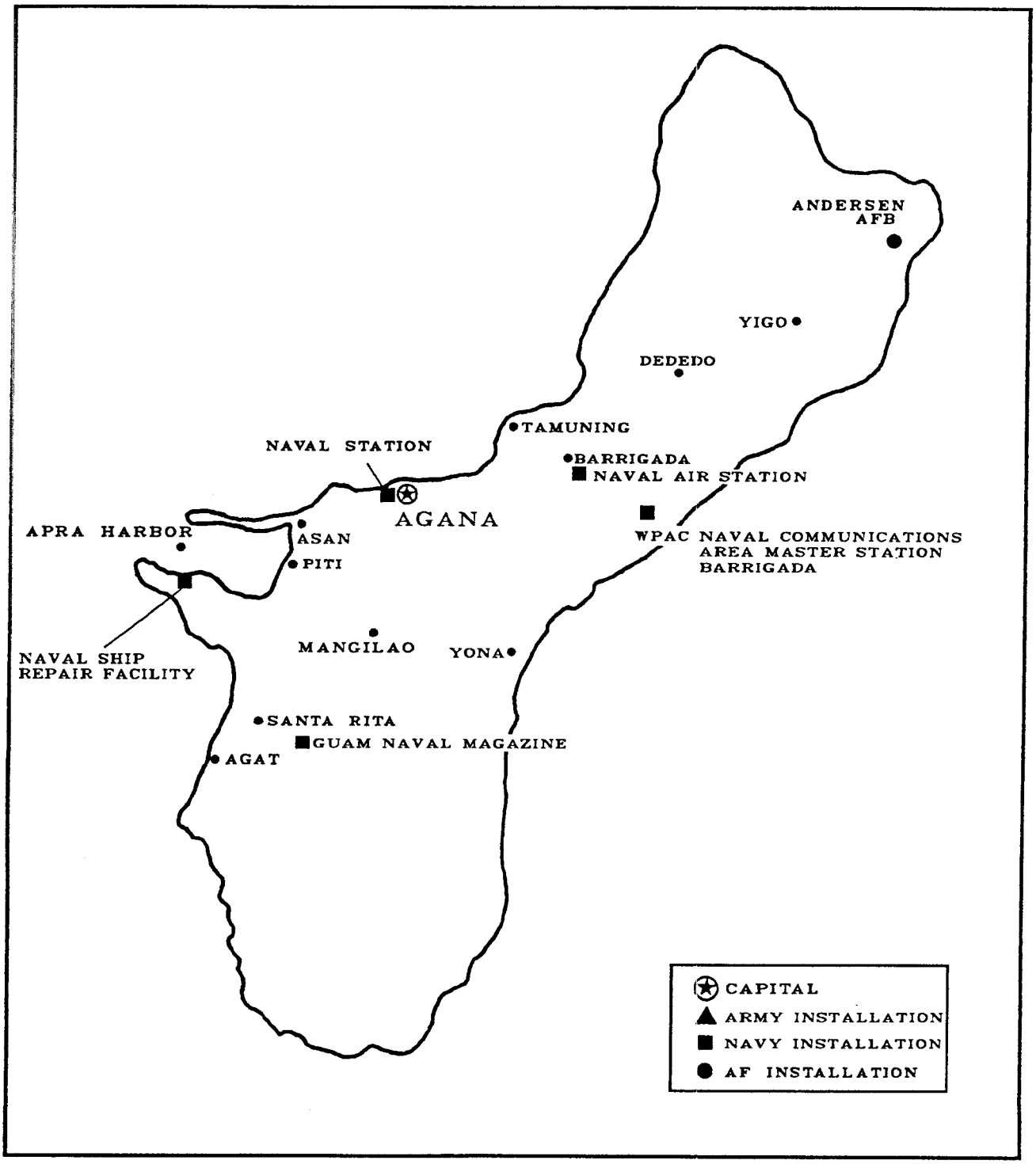
MAP NO. 52

GUAM



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GUAM

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	12,909	1,480	7,962	3,219	248
Active Duty Military	6,319	57	4,045	2,217	0
Civilian	4,538	14	3,733	543	248
Reserve & National Guard	2,052	1,409	184	459	0
II. Expenditures - Total	$723,759	$12,176	$577,780	$119,854	$13,949
A. Payroll Outlays - Total	428,518	10,543	330,135	81,623	6,217
Active Duty Military Pay	253,595	2,280	193,574	57,741	0
Civilian Pay	149,324	560	126,099	16,448	6,217
Reserve & National Guard Pay	2,291	604	265	1,422	0
Retired Military Pay	23,308	7,099	10,197	6,012	0
B. Prime Contracts Over $25,000 Total	295,241	1,633	247,645	38,231	7,732
Supply and Equipment Contracts	1,933	0	1,247	143	543
RDT&E Contracts	0	0	0	0	0
Service Contracts	138,816	1,633	92,309	37,185	7,189
Construction Contracts	154,492	0	153,589	903	0
Civil Function Contracts	0	0	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Agana	$230,585	$198,907	$31,678	Agana	3,382	3,066	316
Andersen AFB	158,335	83,510	74,825	Santa Rita	3,211	0	3,211
Guam Nav Public Work	130,679	0	130,679	Andersen AFB	2,743	2,200	543
Santa Rita	81,743	81,743	0	Apra	1,010	820	190
Apra	47,142	47,142	0	Harmon Village	300	64	236
Guam Nav Sup Depot	39,230	117	39,113	Finegayan	79	39	40
Finegayan	25,510	25,510	0	Guam Nav Public Work	65	65	0
Naval Communications	9,534	0	9,530	Nimitz Hill	47	47	0
Tamuning	6,642	1,244	5,398	Tamuning	18	18	0
Nimitz Hill	2,126	2,126	0	Naval Communications	2	0	2

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$190,870	$9,954	$106,139	$73,175	$1,602
Fiscal Year 1992	156,298	86	108,231	42,328	5,653
Fiscal Year 1991	130,380	221	76,531	19,883	33,745

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Area	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. MORRISON KNUDSEN CORP DEL CORP	$59,347	Other Warehouse Buildings	$22,690
2. SUNDT/ACTUS/IBC A JOINT VENTR	52,500	Family Housing Facilities	52,500
3. HANIL ROBERTS (JV) CORP	28,374	Maint/All Other Non-Building Facilities	17,461
4. FARGO PACIFIC INC	17,429	Maint/Family Housing Facilities	11,709
5. CONCRETE CONSTRUCTION (GUAM) I	13,101	Maint/Troop Housing Facilities	6,193
Total of Above	$170,751	(57.8% of total awards over $25,000)	

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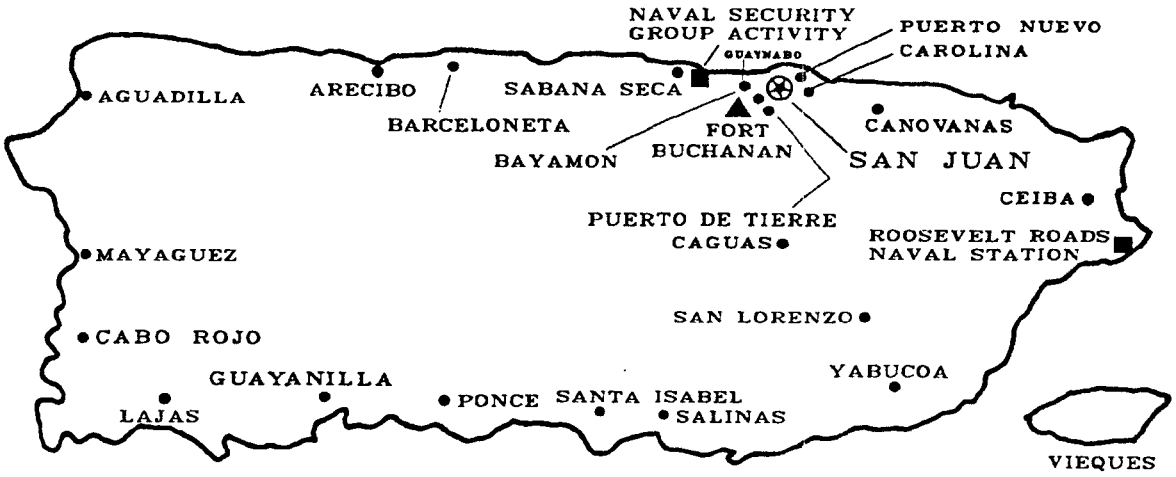
MAP NO. 53

PUERTO RICO



CAPITAL
ARMY INSTALLATION
NAVY INSTALLATION
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PUERTO RICO

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	25,612	19,013	3,716	1,872	1,011
Active Duty Military	2,782	286	2,457	39	0
Civilian	2,939	916	693	319	1,011
Reserve & National Guard	19,891	17,811	566	1,514	0
II. Expenditures - Total	$520,489	$183,520	$163,054	$40,140	$133,775
A. Payroll Outlays - Total	300,204	150,850	98,466	25,999	24,889
Active Duty Military Pay	79,996	8,580	69,832	1,584	0
Civilian Pay	80,398	25,217	21,090	9,202	24,889
Reserve & National Guard Pay	72,015	62,226	2,074	7,715	0
Retired Military Pay	67,795	54,827	5,470	7,498	0
B. Prime Contracts Over $25,000 Total	220,285	32,670	64,588	14,141	108,886
Supply and Equipment Contracts	114,767	3,856	4,153	291	106,467
RDT&E Contracts	0	0	0	0	0
Service Contracts	68,717	12,388	51,232	2,678	2,419
Construction Contracts	21,128	753	9,203	11,172	0
Civil Function Contracts	15,673	15,673	0	0	0

Major Locations of Expenditures	Expenditures			Major Locations of Personnel	Military and Civilian Personnel		
	Total	Payroll Outlays	Prime Contracts		Total	Active Duty Military	Civilian
Roosevelt Roads NS	$126,886	$65,008	$61,878	Roosevelt Roads NS	2,287	2,115	172
Fort Buchanan	47,621	42,460	5,161	Fort Buchanan	1,224	288	936
San Juan	32,506	20,189	12,317	Ceiba	554	0	554
Yabucoa	28,215	162	28,053	Sabana Seca	397	282	115
Mayaguez	21,614	3,430	18,184	Carolina	234	0	234
Bayamon	18,659	6,485	12,174	Puerta De Tierra	184	0	184
Ponce	17,179	7,906	9,273	Aguadilla	142	0	142
San Lorenzo	15,705	303	15,402	Salinas	114	3	111
Guaynabo	12,341	2,244	10,097	San Juan	97	40	57
Aguadilla	11,347	8,052	3,295	Vieques	59	34	25

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$275,987	$22,051	$78,077	$213	$175,646
Fiscal Year 1992	327,867	28,093	114,406	270	185,098
Fiscal Year 1991	556,825	37,699	94,331	475	424,320

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Area	Total Amount	Major Area of Work	
		FSC or Service Code Description	Amount
1. SUN COMPANY INC	$28,053	Fuel Oils	$28,053
2. MASON COMPANY THE (DEL)	12,362	Maint/All Other Non-Building Facilities	12,362
3. G & C ENTERPRISES, INC	11,172	Other Administrative & Service Buildings	11,172
4. GIBRALTAR, P R INC	10,057	Outerwear, Men's	10,057
5. CORPORCION IMMBILIARIA TEXTIL	9,215	Underwear and Nightwear, Men's	9,215
Total of Above	$70,859	(32.2% of total awards over $25,000)	

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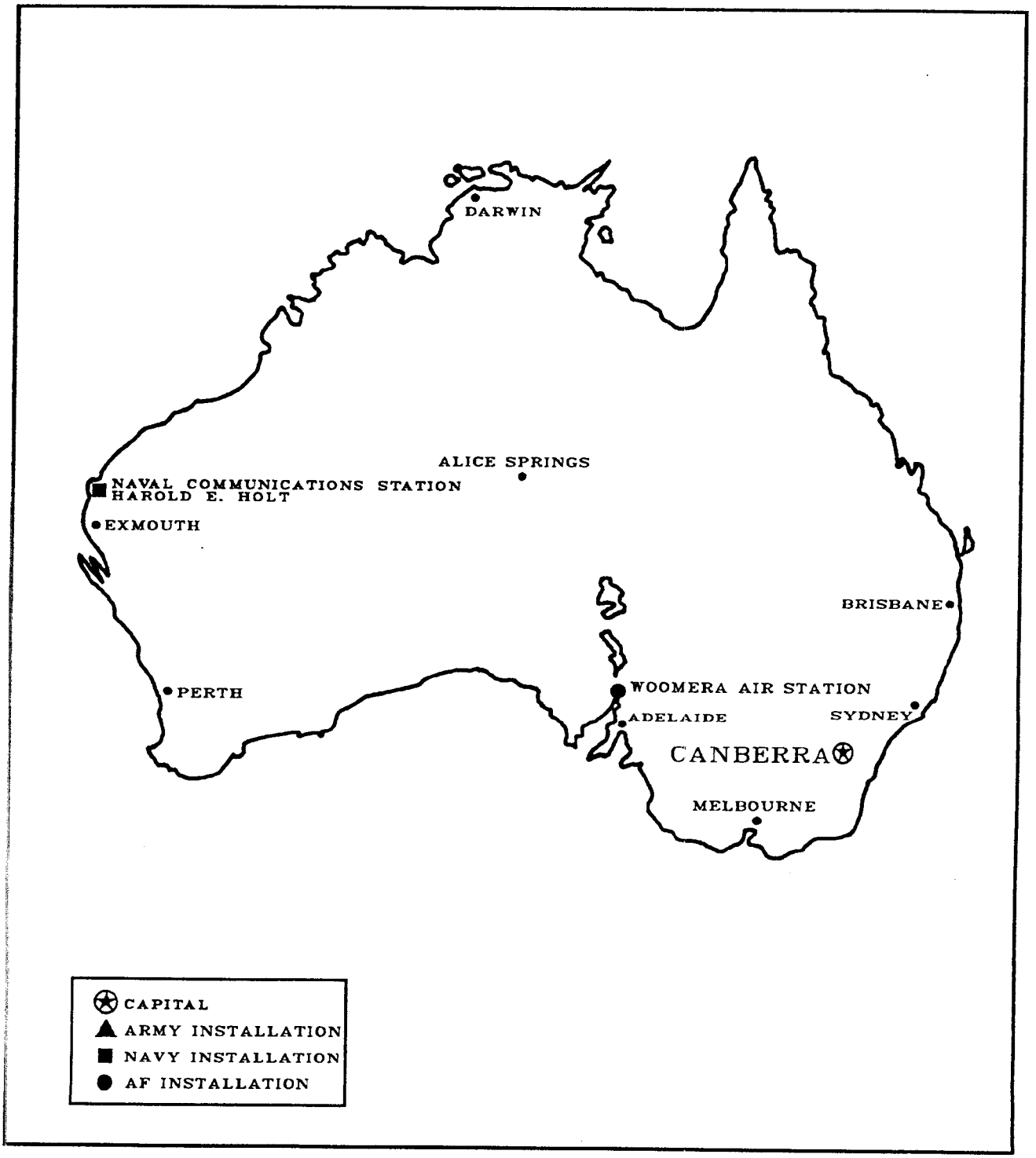
MAP NO. 54

AUSTRALIA



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AUSTRALIA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	676	14	150	497	15
Active Duty Military	330	9	61	260	0
Civilian	11	2	2	1	6
Military Dependents	314	3	75	236	0
U.S. Civilian Dependents	21	0	12	0	9
II. Expenditures - Total	$25,693	$2,441	$6,230	$10,997	$6,025
A. Payroll Outlays - Total	18,919	2,222	5,455	10,997	245
Active Duty Military Pay	11,937	587	2,744	8,606	0
Civilian Pay	508	62	150	51	245
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	6,474	1,573	2,561	2,340	0
B. Prime Contracts Over $25,000 Total	6,774	219	775	0	5,780
Supply and Equipment Contracts	6,374	219	375	0	5,780
RDT&E Contracts	0	0	0	0	0
Service Contracts	400	0	400	0	0
Construction Contracts	0	0	0	0	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$24,955	$410	$7,246	$0	$17,299
Fiscal Year 1992	13,471	415	538	0	12,518
Fiscal Year 1991	9,761	49	3,378	0	6,334

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. REFINERY ASSOCIATES, INC	$5,689	Liquid Propellants & Fuel, Petroleum Base	$5,689
2. PHATTHANA TRADING CO LTD	375	Power and Hand Pumps	375
3. RYAN MARINE PRODUCTS PTY LTD	297	Other ADP & Telecommunication Services	297
4. HYDE ENGINEERING PTY LTD	159	Guns, 75 mm through 125 mm	159
5. BRITISH PETROLEUM CO PLC THE	92	Liquid Propellants & Fuel, Petroleum Base	92
Total of Above	$6,612	(97.6% of total awards over $25,000)	

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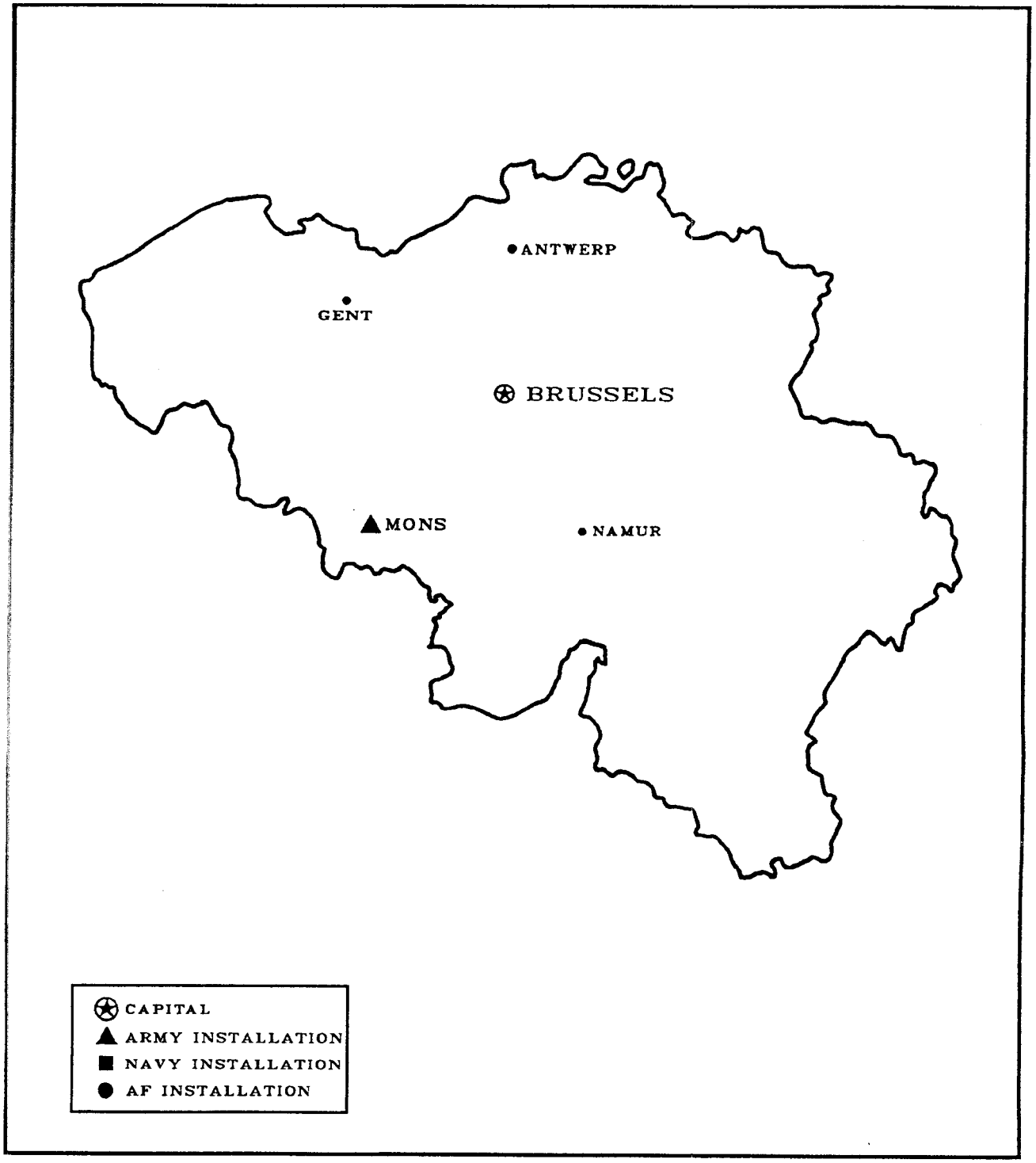
1/ For cost of operations information, refer to DoD Budget Exhibit OP-53.

MAP NO. 55

BELGIUM



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BELGIUM

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	4,932	3,049	305	1,247	331
Active Duty Military	1,670	1,039	130	501	0
Civilian	522	282	0	6	234
Military Dependents	2,522	1,607	175	740	0
U.S. Civilian Dependents	218	121	0	0	97
II. Expenditures - Total	$128,391	$71,986	$6,959	$23,860	$25,586
A. Payroll Outlays - Total	98,047	59,633	5,142	22,424	10,848
Active Duty Military Pay	71,843	46,513	4,955	20,375	0
Civilian Pay	22,017	10,821	0	348	10,848
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	4,187	2,299	187	1,701	0
B. Prime Contracts Over $25,000 Total	30,344	12,353	1,817	1,436	14,738
Supply and Equipment Contracts	15,554	272	1,075	1,535	12,672
RDT&E Contracts	2,233	2,153	0	80	0
Service Contracts	12,110	9,481	742	179-	2,066
Construction Contracts	447	447	0	0	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$47,586	$18,047	$14,556	$5,894	$9,089
Fiscal Year 1992	28,786	16,384	1,225	6,353	4,824
Fiscal Year 1991	77,752	26,583	1,057	14,365	35,747

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. PETROFINA SA	$11,253	Liquid Propellants & Fuel, Petroleum Base	$11,253
2. BELGACOM	4,219	RDTE/Electronics & Communication Eq-Mgmt &	2,153
3. NOORD NATIE NV	2,640	Stevedoring	2,640
4. BARON SECURITY SA	1,237	Guard Services	1,237
5. FEDERAL REPUBLIC OF GERMANY	1,050	Maint/Troop Housing Facilities	1,050
Total of Above	$20,399	(67.2% of total awards over $25,000)	

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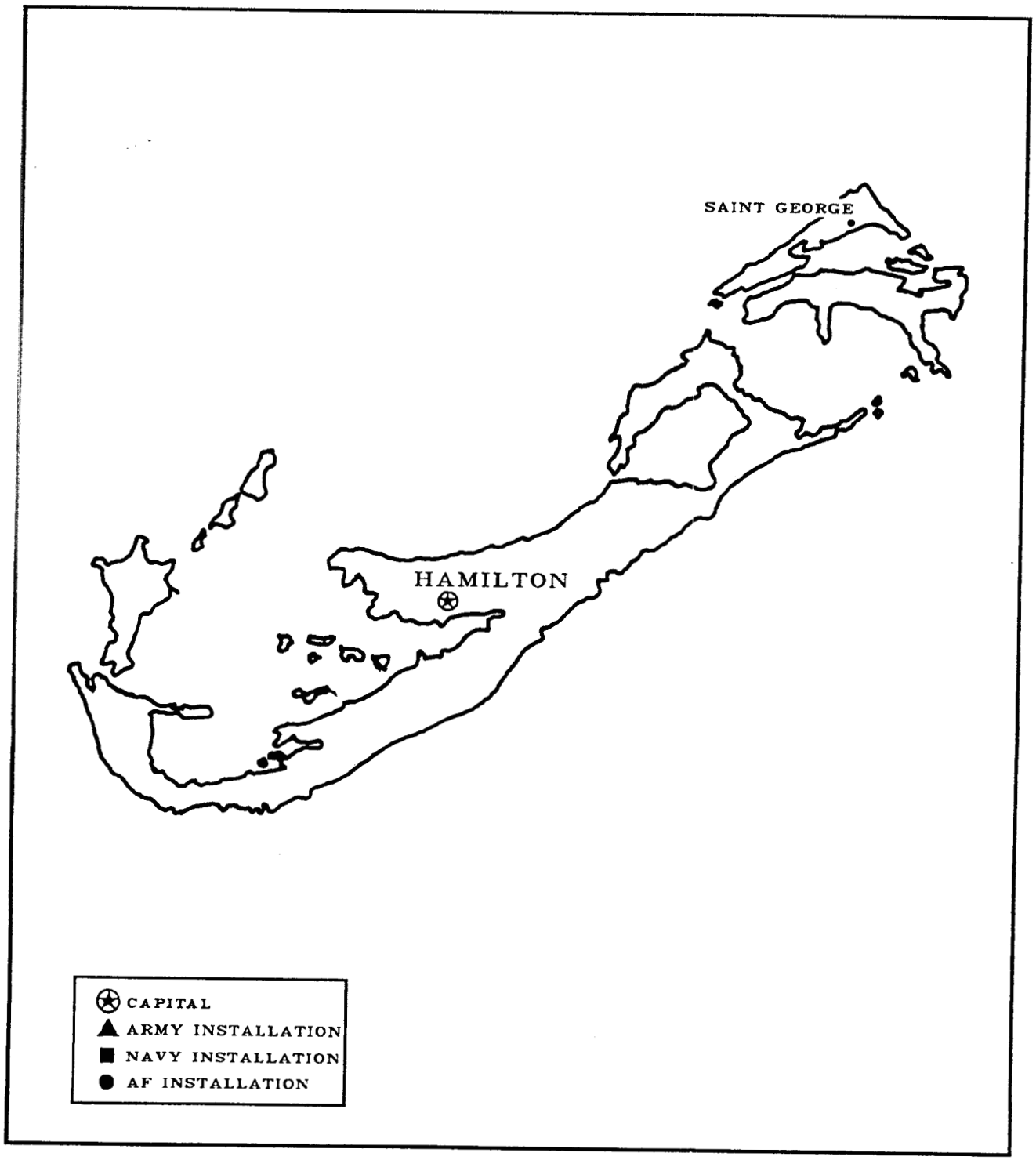
1/ For cost of operations information, refer to DoD Budget Exhibit OP-53.

MAP NO. 56

BERMUDA



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BERMUDA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	1,459	1	1,367	0	91
Active Duty Military	466	1	465	0	0
Civilian	332	0	253	0	79
Military Dependents	454	0	454	0	0
U.S. Civilian Dependents	207	0	195	0	12
II. Expenditures - Total	$32,116	$67	$28,889	$151	$3,009
A. Payroll Outlays - Total	26,257	67	23,535	151	2,504
Active Duty Military Pay	13,374	30	13,344	0	0
Civilian Pay	12,350	0	9,846	0	2,504
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	533	37	345	151	0
B. Prime Contracts Over $25,000 Total	5,859	0	5,354	0	505
Supply and Equipment Contracts	114	0	114	0	0
RDT&E Contracts	0	0	0	0	0
Service Contracts	5,745	0	5,240	0	505
Construction Contracts	0	0	0	0	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$3,030	$0	$2,525	$0	$505
Fiscal Year 1992	7,715	0	6,968	0	747
Fiscal Year 1991	34,049	0	32,892	0	1,157

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. EASTERN MAINTENANCE & SERVICE	$1,761	Maint/Family Housing Facilities	$1,314
2. G & C ENTERPRISES, INC	1,169	Maint/Other Airfield Structures	1,169
3. DAMES & MOORE INC	773	Other Architect & Engineering Services	773
4. GRAY & CO LTD J W	729	Maint/Tank-Automotive Facilities	232
5. EXXON CORPORATION	505	Lease/Fuel Storage Buildings	505
Total of Above	$4,937	(84.3% of total awards over $25,000)	

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MAP NO. 57

CANADA

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CANADA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	902	28	432	335	107
Active Duty Military	282	19	161	102	0
Civilian	236	4	133	10	89
Military Dependents	339	1	128	210	0
U.S. Civilian Dependents	45	4	10	13	18
II. Expenditures - Total	$215,267	$70,594	$70,412	$47,404	$26,857
A. Payroll Outlays - Total	34,774	3,837	19,062	9,583	2,292
Active Duty Military Pay	15,877	1,014	9,531	5,332	0
Civilian Pay	9,749	373	6,609	475	2,292
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	9,148	2,450	2,922	3,776	0
B. Prime Contracts Over $25,000 Total	180,493	66,757	51,350	37,821	24,565
Supply and Equipment Contracts	139,494	59,585	35,969	19,994	23,946
RDT&E Contracts	16,468	3,720	10,614	1,515	619
Service Contracts	23,445	2,366	4,767	16,312	0
Construction Contracts	0	0	0	0	0
Civil Function Contracts	1,086	1,086	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$1,192,184	$990,637	$64,164	$76,211	$61,172
Fiscal Year 1992	405,333	193,035	55,515	75,427	81,356
Fiscal Year 1991	471,189	139,216	88,818	115,397	127,758

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. CANADIAN COMMERCIAL CORPORATI	$113,157	Rail Cars	$15,057
2. CANADIAN COMMERCIAL CORP	24,056	Trucks and Truck Tractors, Wheeled	16,135
3. LIFTKING INC	9,842	Warehouse Trks & Tractors, Self-propelled	9,842
4. CANADIAN COMMERCIAL	9,579	Miscellaneous Vehicular Components	9,395
5. HEROUX INC	3,978	Aircraft Landing Gear Components	3,978
Total of Above	$160,612	(89.0% of total awards over $25,000)	

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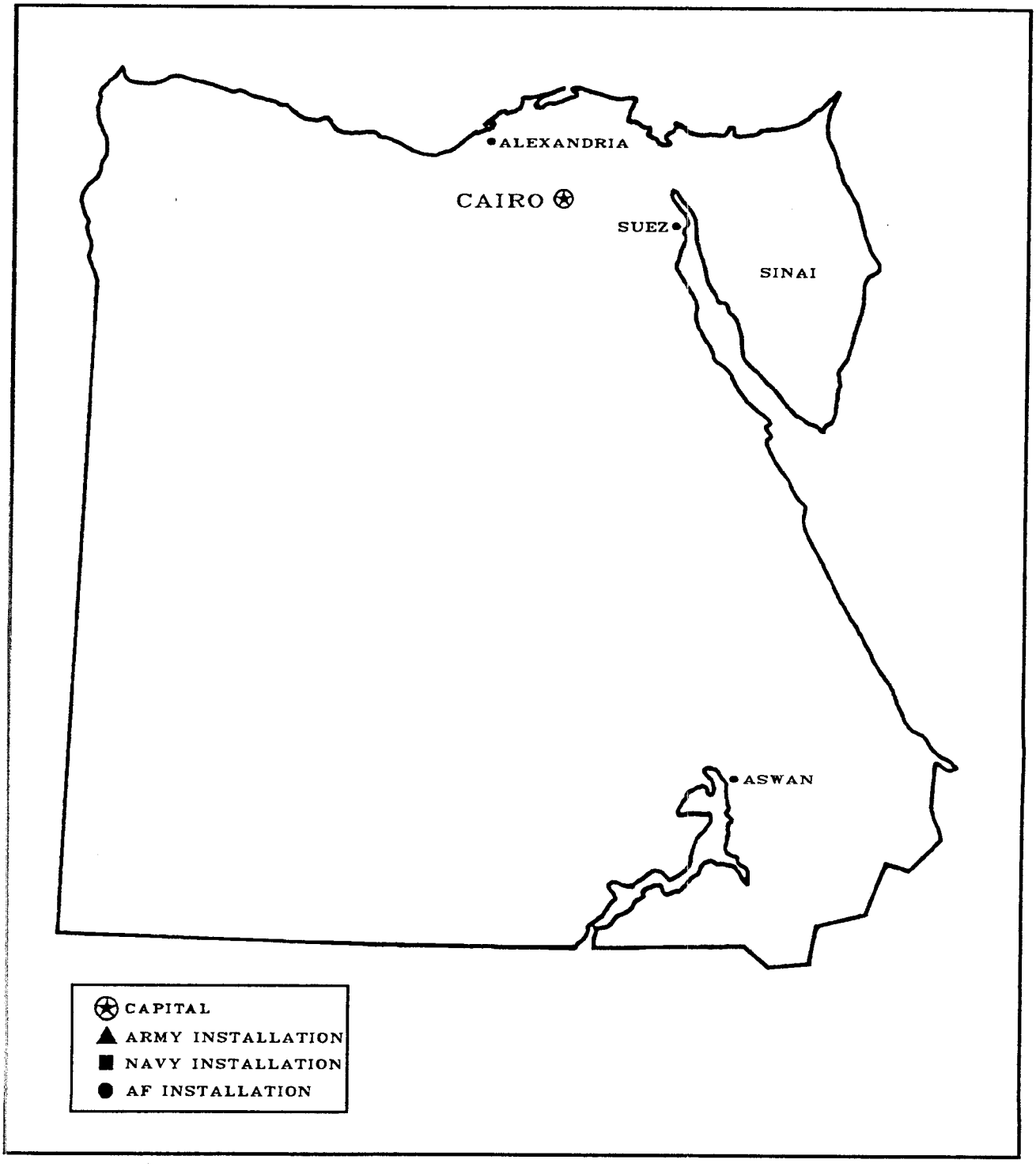
MAP NO. 58

EGYPT



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EGYPT

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	1,557	1,091	274	172	20
Active Duty Military	1,146	1,031	62	53	0
Civilian	259	37	175	39	8
Military Dependents	83	4	19	60	0
U.S. Civilian Dependents	69	19	18	20	12
II. Expenditures - Total	$167,962	$139,323	$5,801	$18,960	$3,878
A. Payroll Outlays - Total	51,560	43,420	4,597	3,231	312
Active Duty Military Pay	45,153	40,835	2,085	2,233	0
Civilian Pay	5,745	2,099	2,487	847	312
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	662	486	25	151	0
B. Prime Contracts Over $25,000 Total	116,402	95,903	1,204	15,729	3,566
Supply and Equipment Contracts	5,384	1,760	35	169	3,420
RDT&E Contracts	0	0	0	0	0
Service Contracts	49,050	32,175	1,159	15,560	146
Construction Contracts	61,968	61,968	0	0	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$60,753	$38,036	$2,439	$12,344	$7,934
Fiscal Year 1992	54,581	47,796	1,246	4,564	975
Fiscal Year 1991	135,932	98,638	1,162	18,929	17,203

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. DILLINGHAM/A B B SUSA JV	$45,012	Other Miscellaneous Buildings	$45,012
2. RAYTHEON COMPANY	30,056	Tech Rep Svcs/Guided Missiles	30,056
3. SEAVIN (JV)	12,191	Other Professional Services	12,191
4. CONTRACK INTERNATIONAL INC	11,557	Other Miscellaneous Buildings	11,557
5. CALTEX PETROLEUM CORPORATION	3,420	Liquid Propellants & Fuel, Petroleum Base	3,420
Total of Above	$102,236	(87.8% of total awards over $25,000)	

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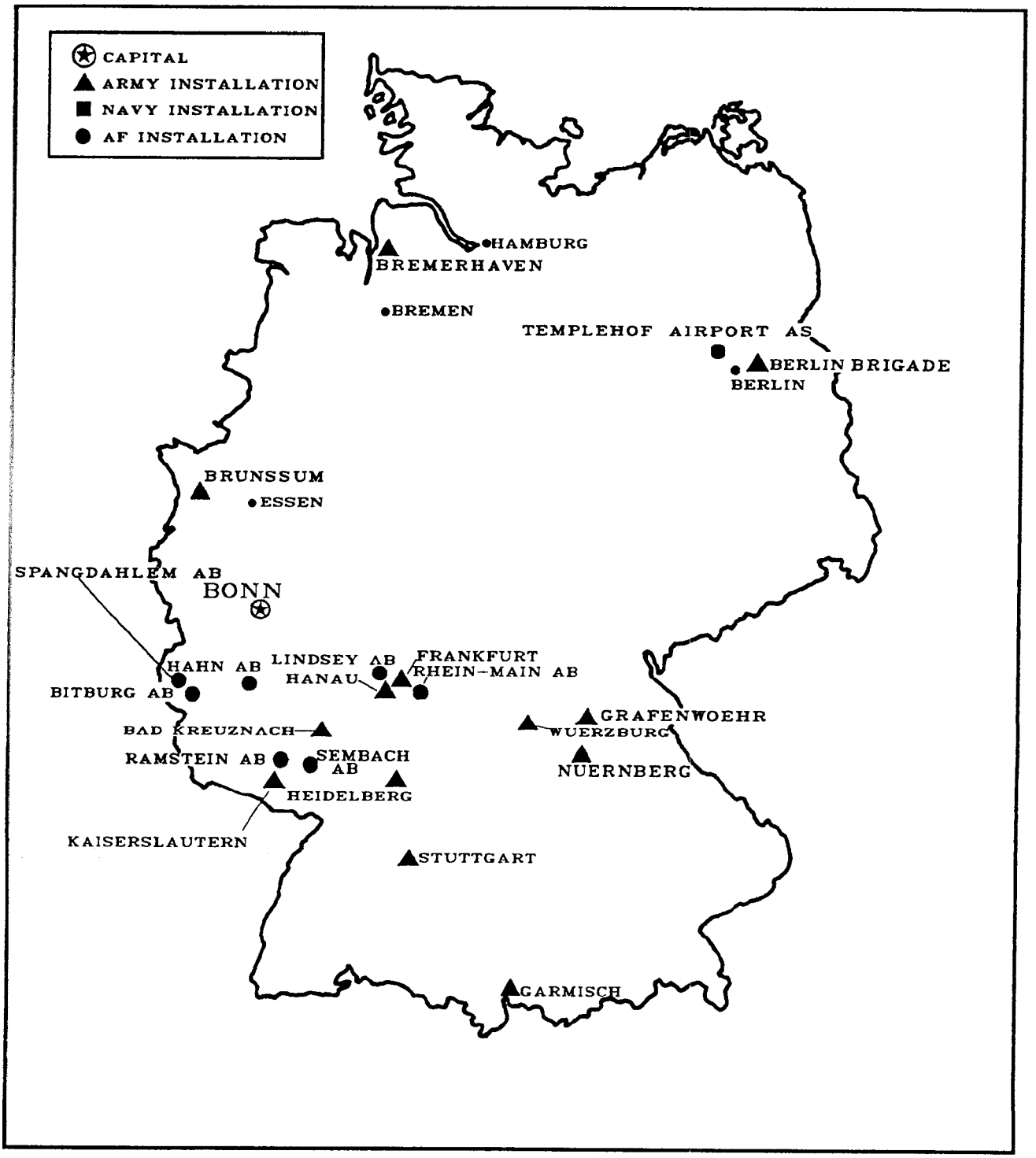
MAP NO. 59

GERMANY



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GERMANY

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	221,748	166,292	1,066	46,467	7,923
Active Duty Military	87,955	70,047	455	17,453	0
Civilian	18,434	9,956	8	1,634	6,836
Military Dependents	109,494	82,495	600	26,399	0
U.S. Civilian Dependents	5,865	3,794	3	981	1,087
II. Expenditures - Total	$4,355,170	$3,146,418	$76,472	$792,679	$339,601
A. Payroll Outlays - Total	3,563,415	2,614,581	20,037	664,092	264,705
Active Duty Military Pay	2,727,646	2,136,899	18,309	572,438	0
Civilian Pay	686,399	364,592	571	56,531	264,705
Reserve & National Guard Pay	13,324	13,324	0	0	0
Retired Military Pay	136,046	99,766	1,157	35,123	0
B. Prime Contracts Over $25,000 Total	791,755	531,837	56,435	128,587	74,896
Supply and Equipment Contracts	117,042	1,669	52,082	15,903	47,388
RDT&E Contracts	20,802	16,110	1,496	81	3,115
Service Contracts	597,355	457,516	2,857	112,589	24,393
Construction Contracts	56,556	56,542	0	14	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$1,020,603	$706,477	$27,496	$122,493	$164,137
Fiscal Year 1992	1,085,488	864,875	102,468	28,440	89,705
Fiscal Year 1991	1,369,734	996,633	70,669	162,569	139,863

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. RAM SYSTEMS GMBH	$50,970	Guided Missile Systems, Complete	$49,621
2. FEDERAL REPUBLIC OF GERMANY	48,123	Maint/Troop Housing Facilities	22,925
3. VEBA AG	29,686	Liquid Propellants & Fuel, Petroleum Base	25,306
4. ITT CORPORATION	26,311	Maint & Repair of Eq/Miscellaneous Equipme	14,391
5. NATIONAL CITY CORPORATION	20,880	Accounting Services	20,880
Total of Above	$175,970	(22.2% of total awards over $25,000)	

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GREECE

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GREECE

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	686	92	366	200	28
Active Duty Military	492	18	307	167	0
Civilian	77	8	45	5	19
Military Dependents	98	66	14	18	0
U.S. Civilian Dependents	19	0	0	10	9
II. Expenditures - Total	$104,605	$1,501	$36,548	$25,051	$41,505
A. Payroll Outlays - Total	23,969	1,501	9,010	12,101	1,357
Active Duty Military Pay	16,338	560	7,470	8,308	0
Civilian Pay	3,929	289	1,200	1,083	1,357
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	3,702	652	340	2,710	0
B. Prime Contracts Over $25,000 Total	80,636	0	27,538	12,950	40,148
Supply and Equipment Contracts	50,372	0	13,553	42	36,777
RDT&E Contracts	0	0	0	0	0
Service Contracts	30,141	0	13,862	12,908	3,371
Construction Contracts	123	0	123	0	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$97,322	$261-	$9,326	$9,971	$78,286
Fiscal Year 1992	67,729	49	8,320	16,560	42,800
Fiscal Year 1991	252,410	886	2,590	19,247	229,687

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. MOTOR OIL HELLAS CORINTH REFIN	$28,558	Liquid Propellants & Fuel, Petroleum Base	$25,992
2. DEUTSCHE AEROSPACE AG	12,762	Guided Missile Remote Control Systems	10,703
3. PACIFIC ARCHTCTS ENGINEERS INC	11,769	Facilities Operations Support Services	6,609
4. PANDIESTRA OCEANIC NAVEGACION	10,934	Marine Charter For Things	10,934
5. HELLENIC FUEL & LUBRICANT IND	10,300	Liquid Propellants & Fuel, Petroleum Base	10,300
Total of Above	$74,323	(92.2% of total awards over $25,000)	

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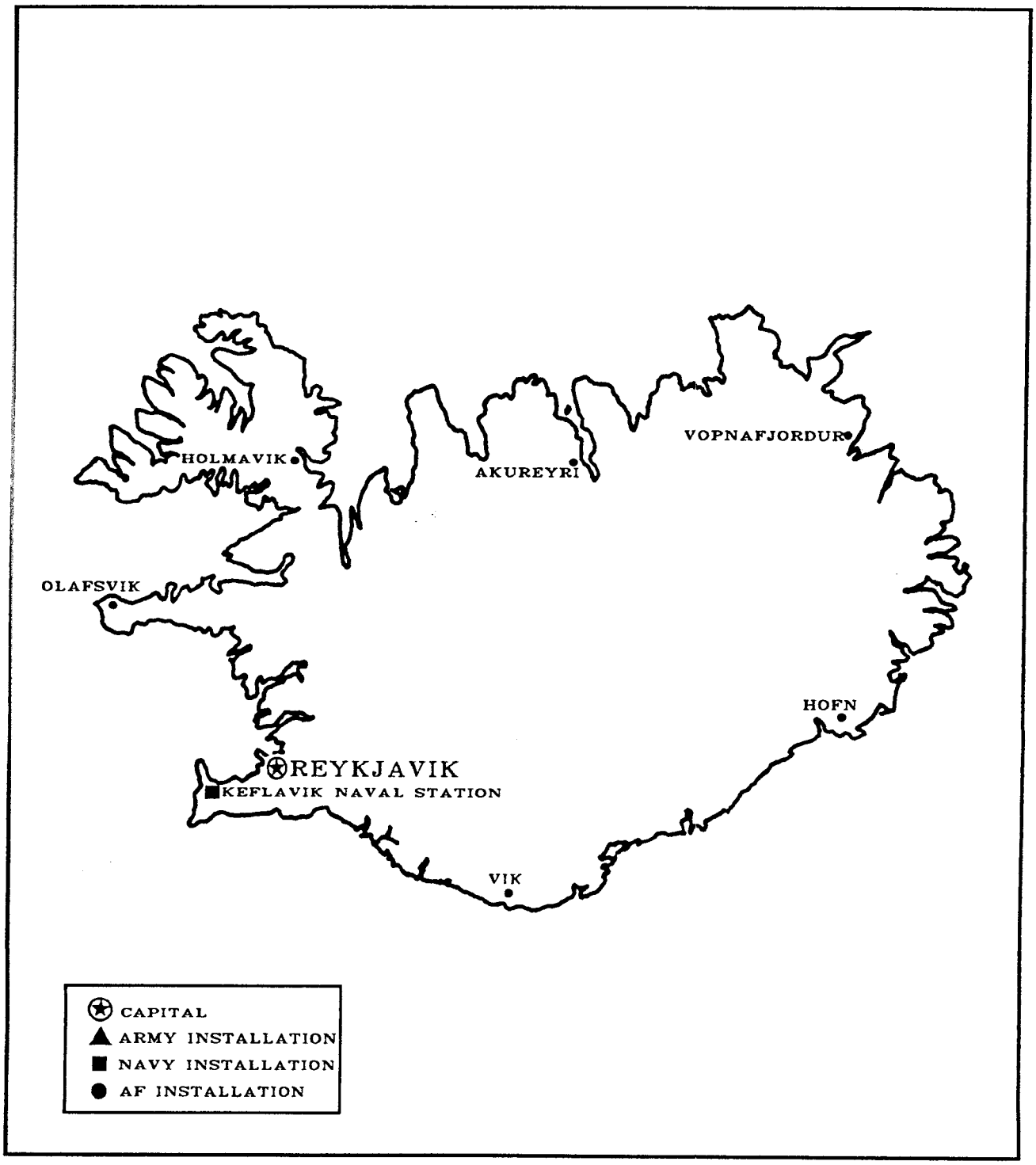
MAP NO. 61

ICELAND



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ICELAND

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	5,884	2	3,547	2,201	134
Active Duty Military	2,474	2	1,406	1,066	0
Civilian	993	0	798	73	122
Military Dependents	2,365	0	1,304	1,061	0
U.S. Civilian Dependents	52	0	39	1	12
II. Expenditures - Total	$196,784	$106	$163,959	$26,728	$5,991
A. Payroll Outlays - Total	107,374	106	76,707	26,728	3,833
Active Duty Military Pay	66,117	83	39,384	26,650	0
Civilian Pay	41,088	0	37,255	0	3,833
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	169	23	68	78	0
B. Prime Contracts Over $25,000 Total	89,410	0	87,252	0	2,158
Supply and Equipment Contracts	172	0	172	0	0
RDT&E Contracts	0	0	0	0	0
Service Contracts	39,426	0	37,268	0	2,158
Construction Contracts	49,812	0	49,812	0	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$42,998	$0	$38,077	$0	$4,921
Fiscal Year 1992	48,400	0	44,407	142	3,851
Fiscal Year 1991	104,882	0	98,314	1,148	5,420

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. ICELAND PRIME CONTRACTORS	$35,063	Fuel Supply Facilities	$18,334
2. KEFLAVIK CONTRACTORS	21,589	Maint/Family Housing Facilities	6,190
3. SPEEGLE CONSTRUCTION INC	16,958	All Other Non-Building Facilities	16,958
4. RADAR AGENCY GOVERNMENT OF ICE	7,443	Other Professional Services	5,206
5. OLIUFELAGID H F	1,300	Operation/Fuel Storage Buildings	2,373
Total of Above	$82,353	(92.1% of total awards over $25,000)	

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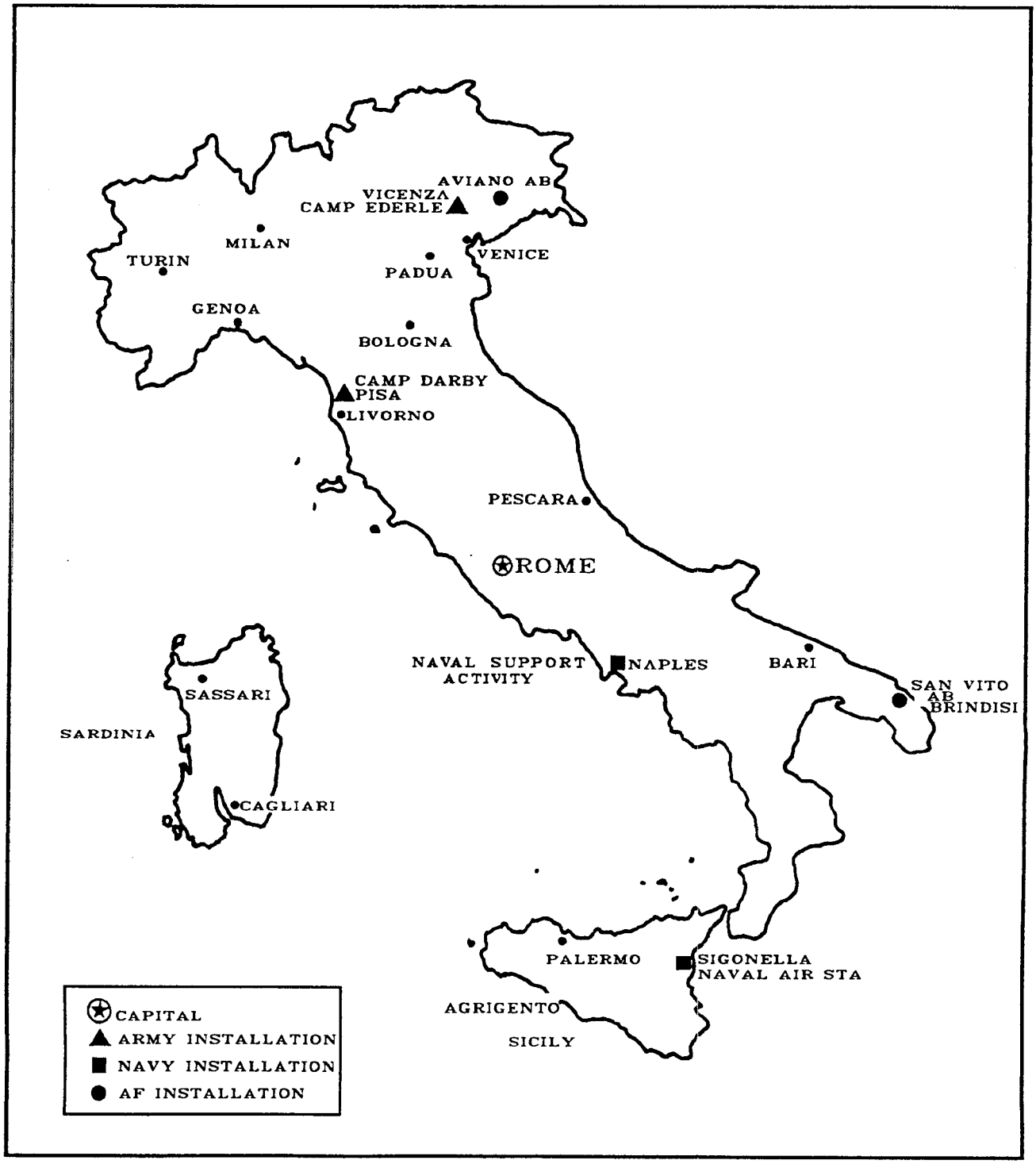
MAP NO. 62

ITALY



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ITALY

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	30,084	7,236	12,804	9,117	927
Active Duty Military	12,743	2,862	5,196	4,685	0
Civilian	4,880	1,314	1,928	762	876
Military Dependents	11,974	2,857	5,556	3,561	0
U.S. Civilian Dependents	487	203	124	109	51
II. Expenditures - Total	$996,512	$144,582	$432,016	$173,471	$246,443
A. Payroll Outlays - Total	585,506	135,785	272,760	146,192	30,769
Active Duty Military Pay	410,280	87,139	207,599	115,542	0
Civilian Pay	164,982	43,073	64,470	26,670	30,769
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	10,244	5,573	691	3,980	0
B. Prime Contracts Over $25,000 Total	411,006	8,797	159,256	27,279	215,674
Supply and Equipment Contracts	225,673	717	15,147	5,854	203,955
RDT&E Contracts	805	530	275	0	0
Service Contracts	138,616	4,420	103,044	19,433	11,719
Construction Contracts	45,912	3,130	40,790	1,992	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$235,630	$10,625	$105,991	$20,104	$98,910
Fiscal Year 1992	213,535	39,330	108,100	15,841	50,264
Fiscal Year 1991	354,432	35,947	138,153	25,686	154,646

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. PRAOIL AROMATICI E RAFFINAZION	$94,957	Liquid Propellants & Fuel, Petroleum Base	$80,520
2. EXXON CORPORATION	82,736	Liquid Propellants & Fuel, Petroleum Base	82,736
3. ALISUD SPA	36,992	Operation/Airport Terminals	36,992
4. ENI SPA	27,419	Fuel Oils	23,314
5. LOTOS SNC DI LO SCIUTO GIUSEPP	10,002	Other Airfield Structures	4,882
Total of Above	$252,106	(61.3% of total awards over $25,000)	

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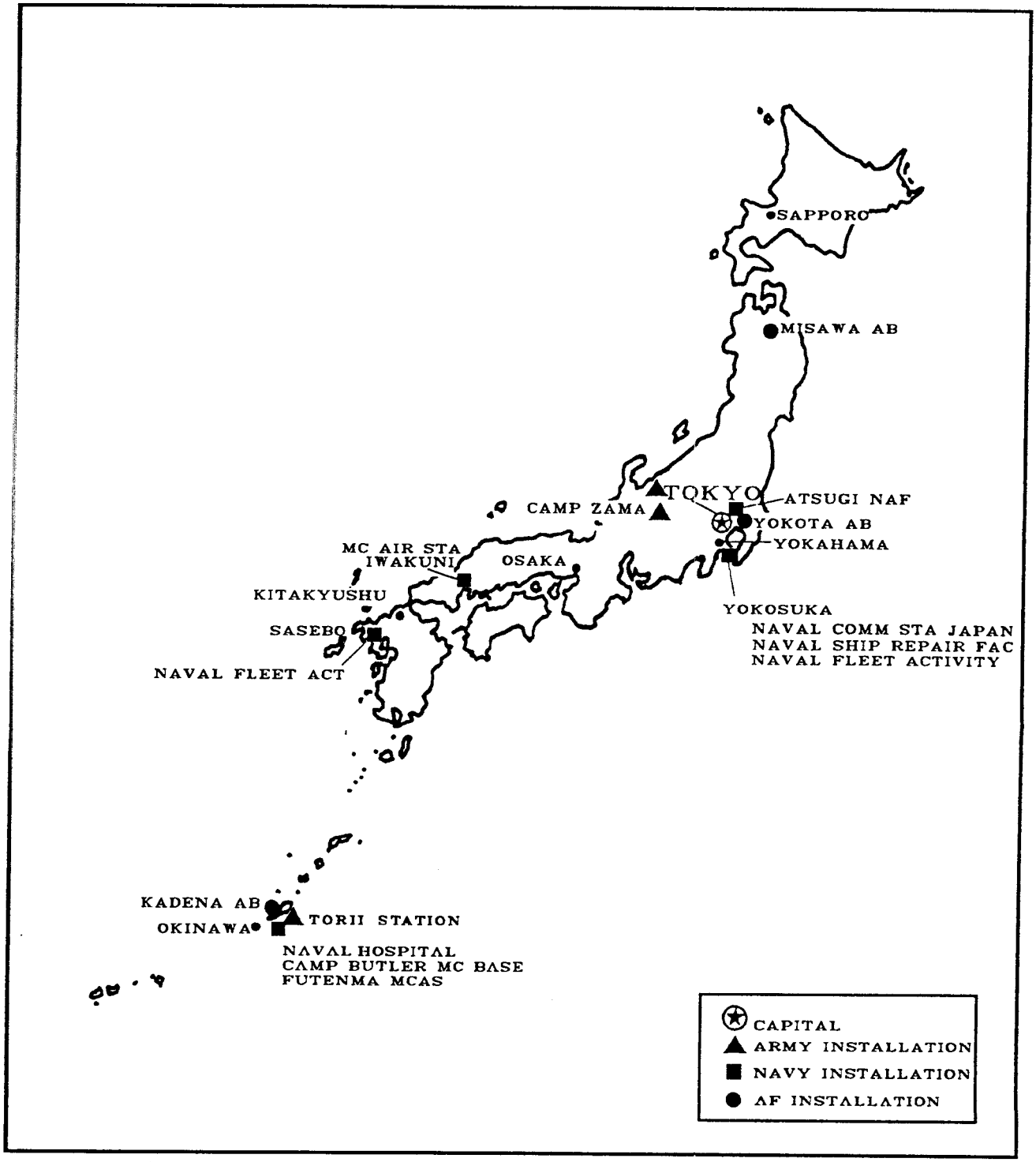
MAP NO. 63

JAPAN



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JAPAN

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	103,081	5,051	57,994	37,039	2,997
Active Duty Military	45,398	1,979	28,088	15,331	0
Civilian	5,504	696	1,769	925	2,114
Military Dependents	48,553	1,940	26,812	19,801	0
U.S. Civilian Dependents	3,626	436	1,325	982	883
II. Expenditures - Total	$2,643,410	$134,294	$1,265,266	$1,129,212	$114,638
A. Payroll Outlays - Total	1,847,870	99,569	1,132,784	516,088	99,429
Active Duty Military Pay	1,605,790	72,439	1,062,545	470,806	0
Civilian Pay	216,715	21,124	60,840	35,322	99,429
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	25,365	6,006	9,399	9,960	0
B. Prime Contracts Over $25,000 Total	795,540	34,725	132,482	613,124	15,209
Supply and Equipment Contracts	29,432	3,848	7,773	2,976	14,835
RDT&E Contracts	385	385	0	0	0
Service Contracts	756,778	27,353	119,182	609,869	374
Construction Contracts	8,909	3,103	5,527	279	0
Civil Function Contracts	36	36	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$572,499	$33,587	$118,899	$348,702	$71,311
Fiscal Year 1992	823,966	29,542	131,577	641,405	21,442
Fiscal Year 1991	909,251	41,216	148,453	658,563	61,019

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. DEFENSE FACILITIES ADMIN AGNCY	$244,089	Operation/Other Administrative & Service B	$244,089
2. OKINAWA ELECTRIC POWER CO INC	86,942	Electric Services	86,942
3. TOKYO ELECTRIC POWER CO INC	61,390	Electric Services	61,390
4. TOHOKU ELECTRIC POWER CO INC	22,100	Electric Services	22,100
5. SUMITOMO HEAVY INDUSTRIES LTD	21,137	Maint & Repair of Eq/Ships-Sml Craft-Docks	20,961
Total of Above	$435,658	(54.8% of total awards over $25,000)	

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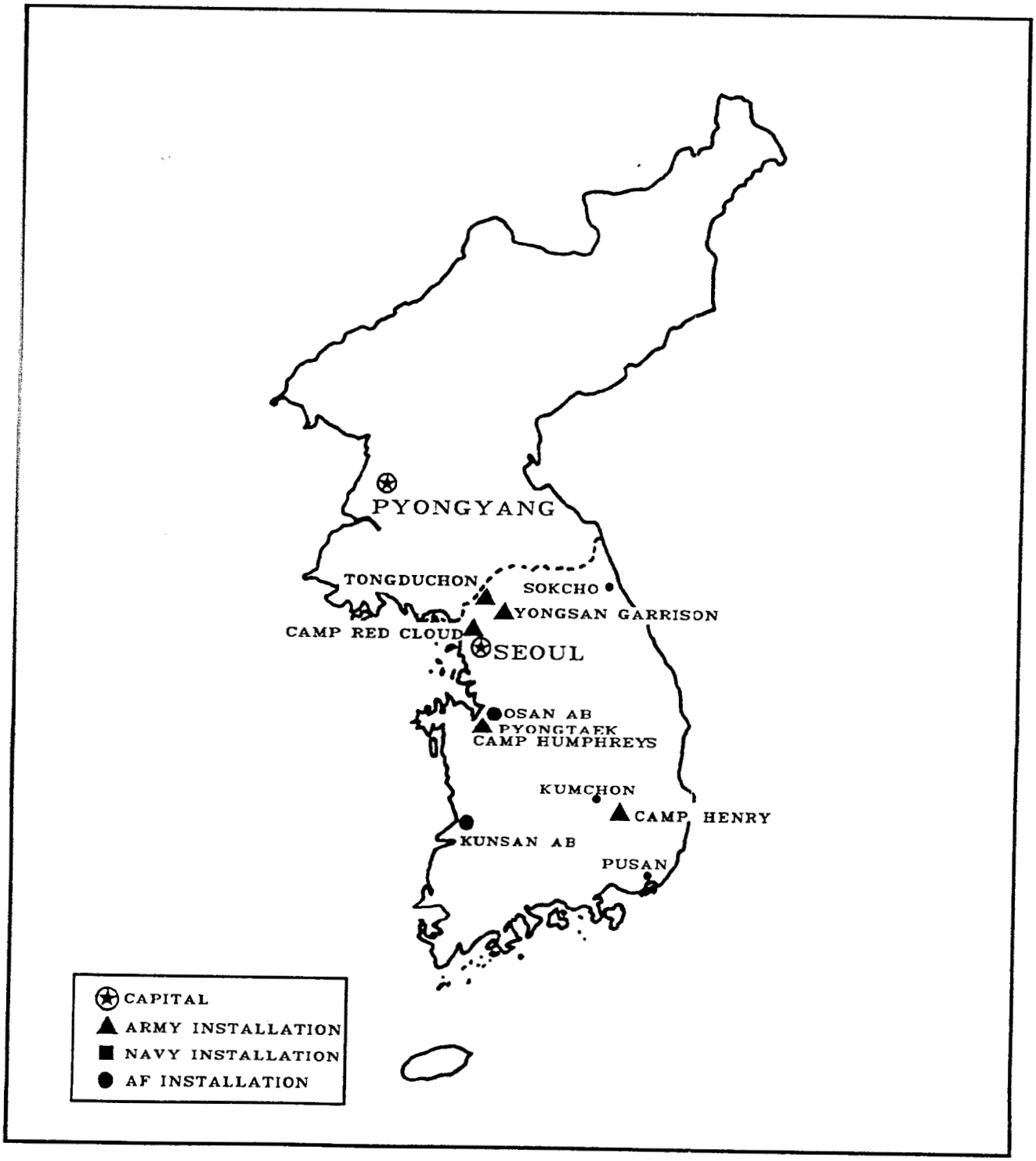
MAP NO. 64

KOREA



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KOREA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	59,778	46,185	806	11,543	1,244
Active Duty Military	36,796	27,486	350	8,960	0
Civilian	10,840	8,569	151	1,148	972
Military Dependents	10,414	8,747	305	1,362	0
U.S. Civilian Dependents	1,728	1,383	0	73	272
II. Expenditures - Total	$1,664,570	$1,145,172	$16,887	$290,009	$212,502
A. Payroll Outlays - Total	1,239,115	927,813	16,513	263,556	31,233
Active Duty Military Pay	937,357	700,170	14,562	222,625	0
Civilian Pay	282,609	214,658	1,577	35,141	31,233
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	19,149	12,985	374	5,790	0
B. Prime Contracts Over $25,000 Total	425,455	217,359	374	26,453	181,269
Supply and Equipment Contracts	190,235	7,775	0	913	181,547
RDT&E Contracts	0	0	0	0	0
Service Contracts	174,572	148,936	374	25,540	278-
Construction Contracts	60,648	60,648	0	0	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$436,726	$234,215	$928	$32,576	$169,007
Fiscal Year 1992	428,488	200,075	1,076	32,021	195,316
Fiscal Year 1991	565,422	310,521	9,756	6,972	238,173

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. SSANG YONG OIL REFINING CO LTD	$103,591	Liquid Propellants & Fuel, Petroleum Base	$92,448
2. KYUNG IN ENERGY CO LTD	42,451	Fuel Oils	42,451
3. KOREA ELECTRIC POWER CORP	32,557	Electric Services	32,557
4. SUNKYOUNG LTD	32,103	Liquid Propellants & Fuel, Petroleum Base	24,906
5. SHIN CHEON CO., LTD	20,181	Guard Services	20,181
Total of Above	$230,883	(54.3% of total awards over $25,000)	

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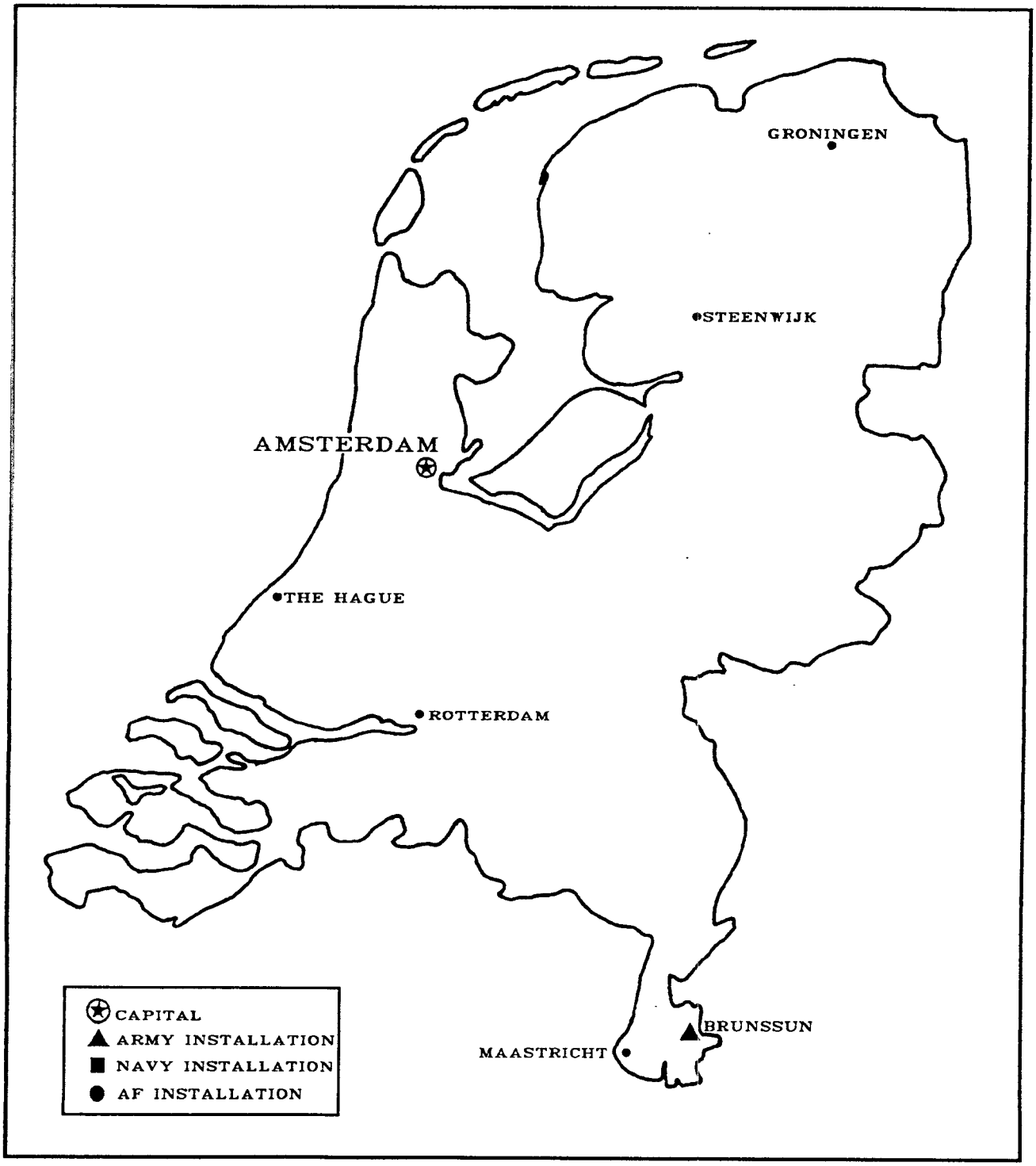
MAP NO. 65

NETHERLANDS



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NETHERLANDS

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	2,601	1,378	66	982	175
Active Duty Military	826	455	28	343	0
Civilian	282	108	2	14	158
Military Dependents	1,400	756	35	609	0
U.S. Civilian Dependents	93	59	1	16	17
II. Expenditures - Total	$102,768	$64,337	$2,580	$24,497	$11,354
A. Payroll Outlays - Total	45,204	18,930	1,263	17,137	7,874
Active Duty Military Pay	28,134	14,105	1,136	12,893	0
Civilian Pay	13,744	3,780	67	2,023	7,874
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	3,326	1,045	60	2,221	0
B. Prime Contracts Over $25,000 Total	57,564	45,407	1,317	7,360	3,480
Supply and Equipment Contracts	6,073	129	365	3,148	2,431
RDT&E Contracts	636	528	58	50	0
Service Contracts	50,403	44,184	894	4,276	1,049
Construction Contracts	414	528	0	114-	0
Civil Function Contracts	38	38	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$76,052	$50,026	$2,690	$16,364	$6,972
Fiscal Year 1992	78,625	50,189	2,389	22,286	3,761
Fiscal Year 1991	154,701	74,085	3,867	19,131	57,618

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. MINISTERIE VAN DEFENSIE	$40,266	Other Housekeeping Services	$40,266
2. UNITED TECHNOLOGIES CORP	5,035	Maint & Repair of Eq/Engines, Turbines & C	2,454
3. EUROPE COMBINED TERMINALS BV	1,661	Stevedoring	1,661
4. KONINKLIJKE PTT NEDERLAND NV	1,049	Other ADP & Telecommunication Services	971
5. SAMAS-GROEP NV	963	Office Furniture	963
Total of Above	$48,974	(85.1% of total awards over $25,000)	

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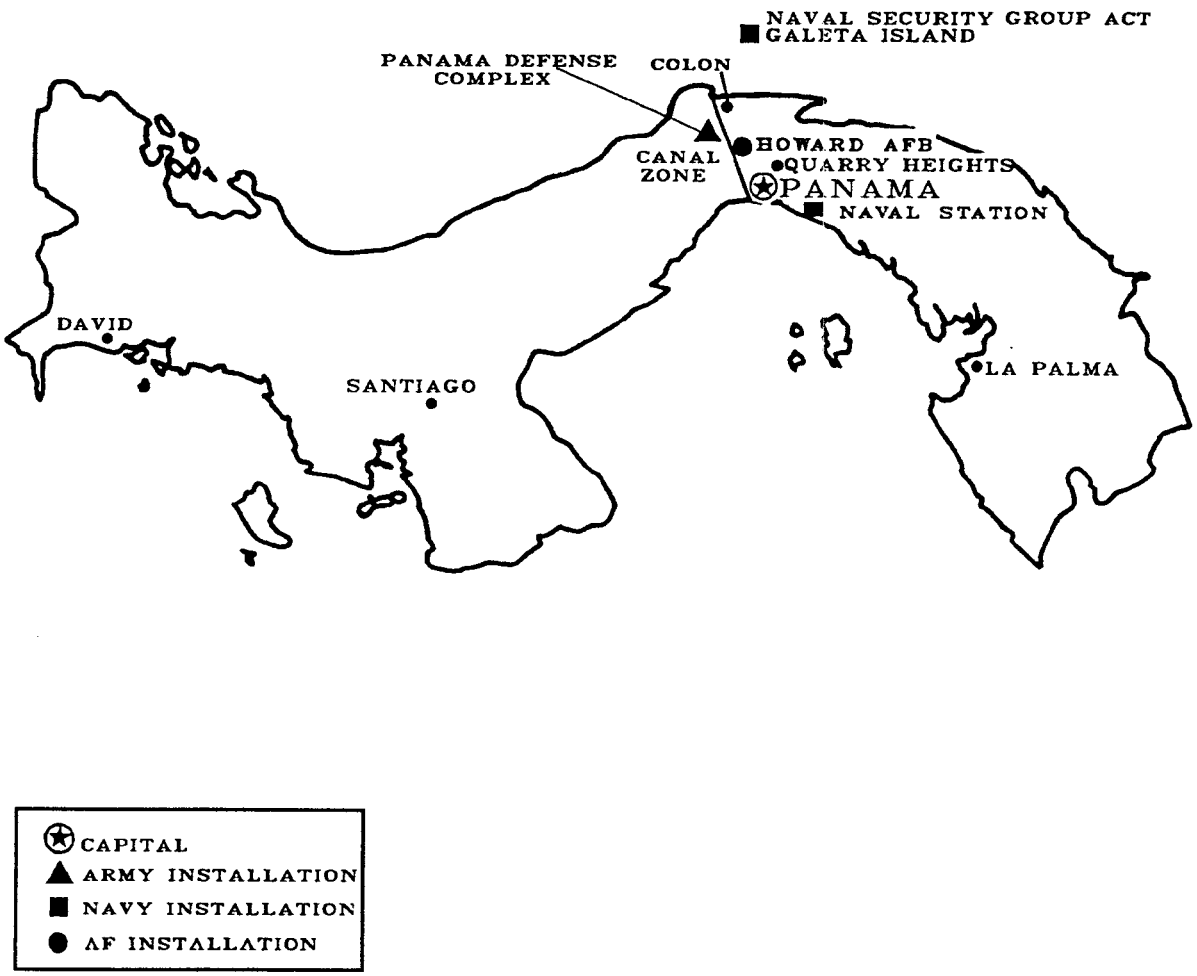
MAP NO. 66

PANAMA



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PANAMA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	27,092	17,717	1,968	6,234	1,173
Active Duty Military	9,479	6,317	662	2,500	0
Civilian	5,845	3,407	431	838	1,169
Military Dependents	9,579	6,186	695	2,698	0
U.S. Civilian Dependents	2,189	1,807	180	198	4
II. Expenditures - Total	$478,267	$309,093	$44,986	$95,945	$28,243
A. Payroll Outlays - Total	416,599	263,446	35,257	89,953	27,943
Active Duty Military Pay	258,711	167,411	23,342	67,958	0
Civilian Pay	147,840	88,430	11,723	19,744	27,943
Reserve & National Guard Pay	1,849	1,849	0	0	0
Retired Military Pay	8,199	5,756	192	2,251	0
B. Prime Contracts Over $25,000 Total	61,668	45,647	9,729	5,992	300
Supply and Equipment Contracts	5,416	4,909	0	207	300
RDT&E Contracts	1,940	1,940	0	0	0
Service Contracts	34,157	19,677	8,695	5,785	0
Construction Contracts	19,191	18,157	1,034	0	0
Civil Function Contracts	964	964	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$52,493	$34,200	$7,784	$8,599	$1,910
Fiscal Year 1992	52,627	33,010	10,736	6,949	1,932
Fiscal Year 1991	64,202	41,351	10,824	8,902	3,125

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. H I HOMA COMPANY INC, THE	$6,585	All Other Non-Building Facilities	$6,392
2. ISTHMNIAN ROAD MIX INC	4,393	Airport Runways	3,988
3. HARBERT CORPORATION	3,708	Other Miscellaneous Buildings	3,708
4. CONTRATOS Y MANTENIMIENTOS S A	3,289	Maint/All Other Non-Building Facilities	2,572
5. COMAJA J A	2,572	Maint/Fuel Supply Facilities	2,572
Total of Above	$20,547	(33.3% of total awards over $25,000)	

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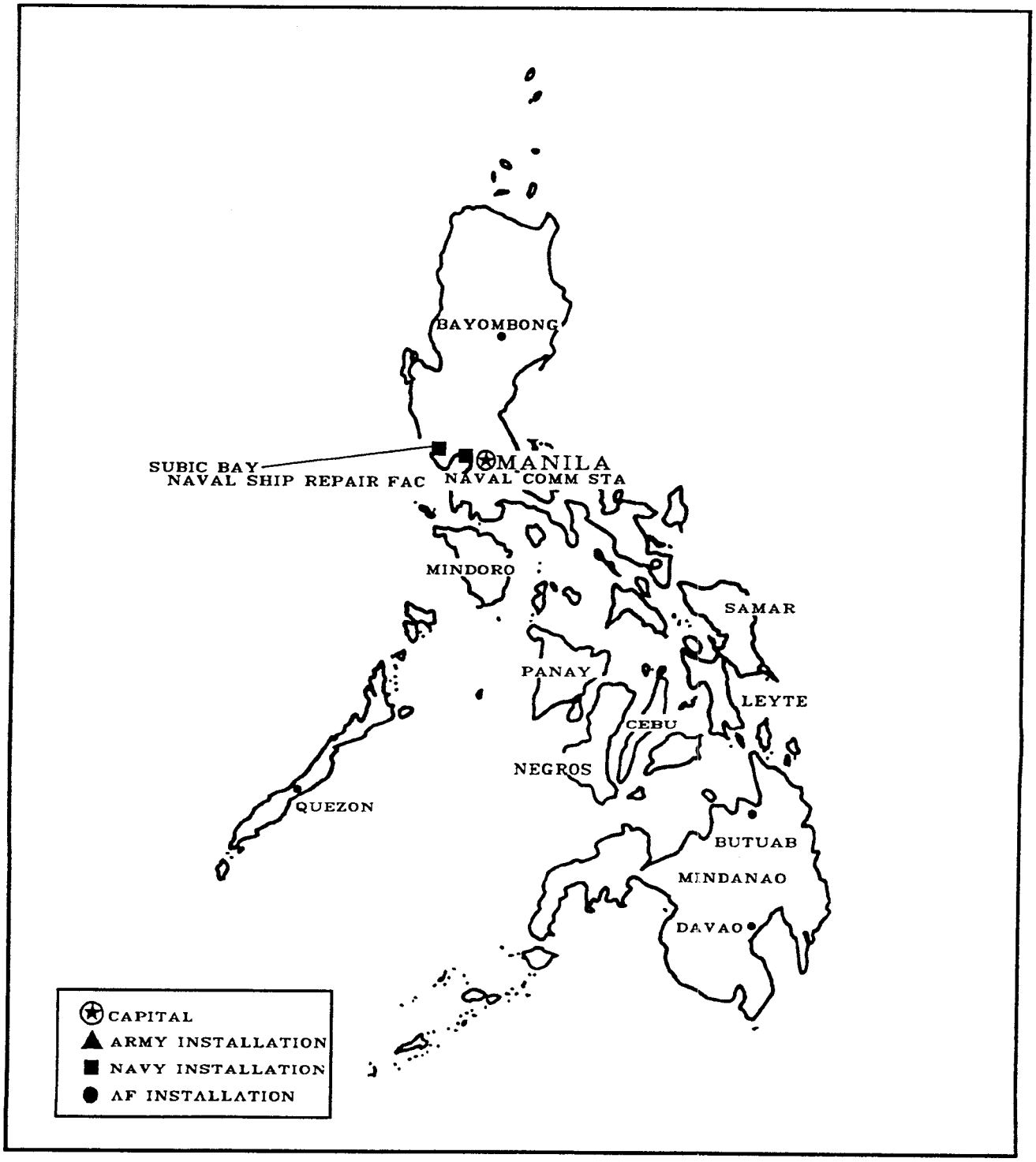
MAP NO. 67

PHILIPPINES



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PHILIPPINES

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	279	19	245	12	3
Active Duty Military	232	13	211	8	0
Civilian	26	0	23	0	3
Military Dependents	21	6	11	4	0
U.S. Civilian Dependents	0	0	0	0	0
II. Expenditures - Total	$56,106	$7,296	$41,562	$6,646	$602
A. Payroll Outlays - Total	54,151	5,957	41,431	6,646	117
Active Duty Military Pay	7,794	403	6,758	633	0
Civilian Pay	575	0	458	0	117
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	45,782	5,554	34,215	6,013	0
B. Prime Contracts Over $25,000 Total	1,955	1,339	131	0	485
Supply and Equipment Contracts	1,224	739	0	0	485
RDT&E Contracts	440	440	0	0	0
Service Contracts	291	160	131	0	0
Construction Contracts	0	0	0	0	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$5,364	$2,599	$527	$1,286	$952
Fiscal Year 1992	22,460	929	20,921	45-	655
Fiscal Year 1991	56,883	756	41,531	10,398	4,198

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. EAC GRAPHICS (A DIVISION OF L	$485	Printing, Duplicating & Bookbinding Equip	$485
2. COMMUNICATIONS GENERAL INTL	453	Telephone and Telegraph Equipment	453
3. B T R PLC	440	RDTE/Aircraft-Management & Support	440
4. REDCOM LABORATORIES INC	220	Telephone and Telegraph Equipment	220
5. HILL INTERNATIONAL INC	160	Other Architect & Engineering Services	160
Total of Above	$1,758	(89.9% of total awards over $25,000)	

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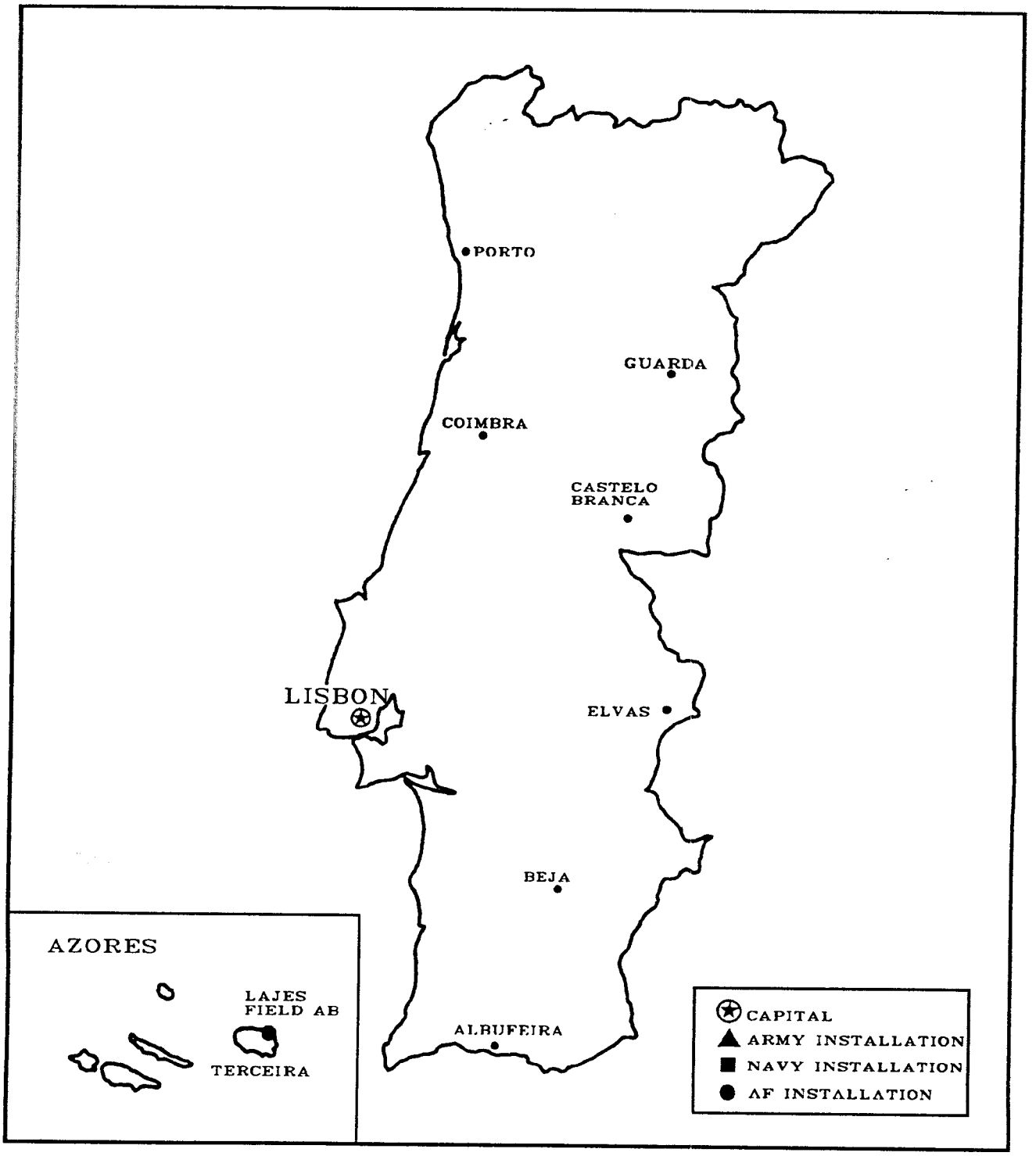
MAP NO. 68

PORTUGAL



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PORTUGAL

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	3,604	39	173	3,268	124
Active Duty Military	1,173	29	68	1,076	0
Civilian	919	2	42	768	107
Military Dependents	1,437	8	63	1,366	0
U.S. Civilian Dependents	75	0	0	58	17
II. Expenditures - Total	$79,271	$1,163	$8,988	$60,341	$8,779
A. Payroll Outlays - Total	61,038	1,163	4,144	51,827	3,904
Active Duty Military Pay	31,270	900	3,173	27,197	0
Civilian Pay	28,982	61	907	24,110	3,904
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	786	202	64	520	0
B. Prime Contracts Over $25,000 Total	18,233	0	4,844	8,514	4,875
Supply and Equipment Contracts	1,764	0	0	149	1,615
RDT&E Contracts	0	0	0	0	0
Service Contracts	16,469	0	4,844	8,365	3,260
Construction Contracts	0	0	0	0	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$19,418	$999	$6,782	$11,637	$0
Fiscal Year 1992	12,912	100-	406	12,606	0
Fiscal Year 1991	22,605	505	6,948	15,117	35

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. HOJGAARD HOLDING A/S	$3,951	Maint/Sewage & Waste Facilities	$3,951
2. ADMISNISTRAACO-GERALDOCTT	3,260	Other ADP & Telecommunication Services	3,260
3. MCC CONSTRUCTION CORPORATION	2,001	Maint/Other Miscellaneous Buildings	976
4. TRAMP HOLDINGS LTD	1,615	Fuel Oils	1,615
5. CARTOR	1,260	Maint/Other Miscellaneous Buildings	946
Total of Above	$12,087	(66.3% of total awards over $25,000)	

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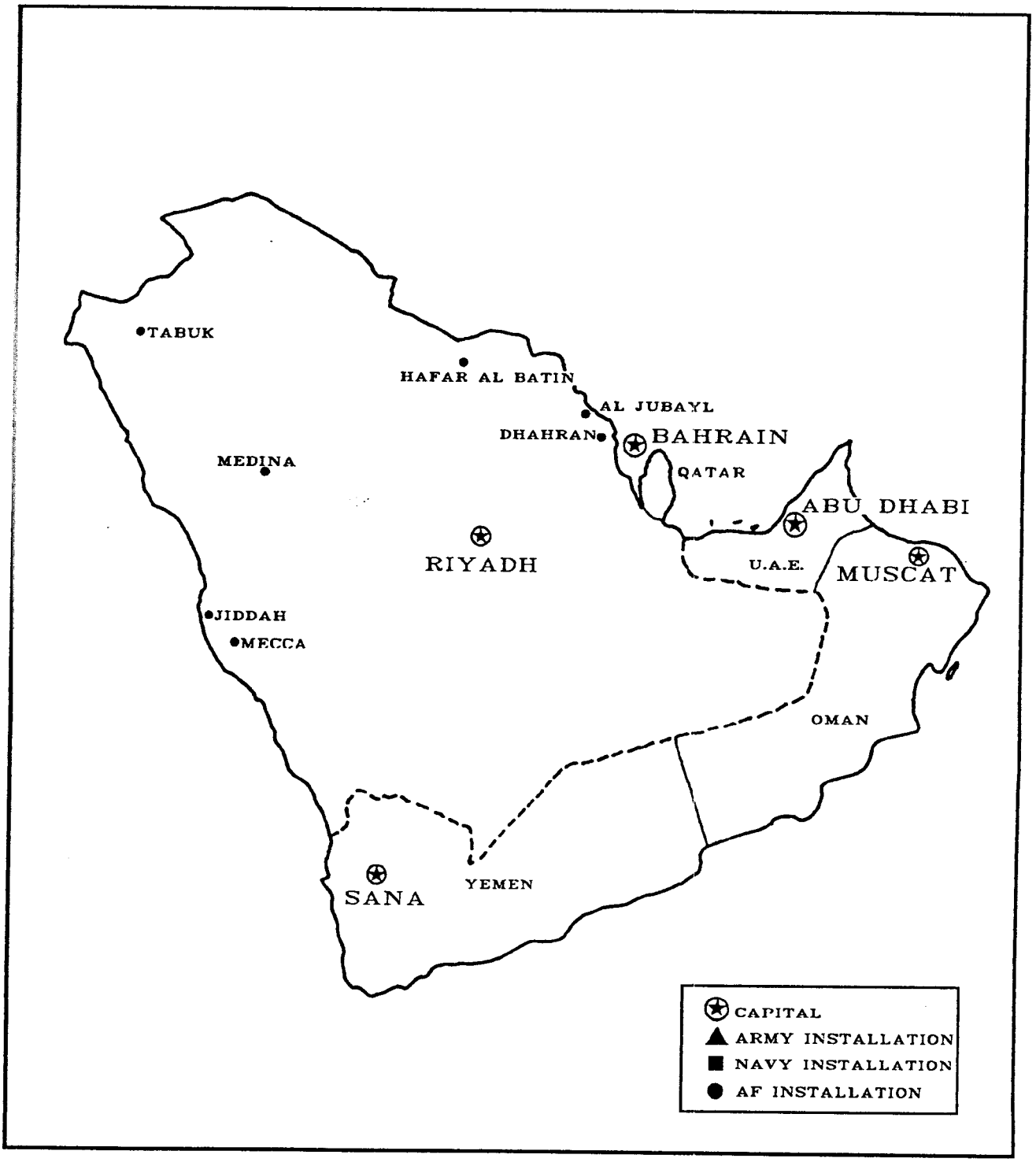
MAP NO. 69

SAUDI ARABIA



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SAUDI ARABIA

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	1,561	671	152	560	178
Active Duty Military	710	423	97	190	0
Civilian	343	148	6	100	89
Military Dependents	348	71	48	229	0
U.S. Civilian Dependents	160	29	1	41	89
II. Expenditures - Total	$643,667	$484,296	$16,065	$65,142	$78,164
A. Payroll Outlays - Total	52,659	22,148	5,948	20,817	3,746
Active Duty Military Pay	26,228	13,113	4,778	8,337	0
Civilian Pay	9,990	4,239	348	1,657	3,746
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	16,441	4,796	822	10,823	0
B. Prime Contracts Over $25,000 Total	591,008	462,148	10,117	44,325	74,418
Supply and Equipment Contracts	220,714	144,814	0	1,482	74,418
RDT&E Contracts	0	0	0	0	0
Service Contracts	364,403	316,119	10,117	38,167	0
Construction Contracts	5,891	1,215	0	4,676	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$591,436	$235,424	$13,733	$208,785	$133,494
Fiscal Year 1992	447,776	76,999	11,744	311,241	47,792
Fiscal Year 1991	1,243,614	461,568	589,366	90,246	102,434

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. CARLYLE PARTNERS LEVERAGED CAP	$201,302	Other Education & Training Services	$200,055
2. MANSOUR GENERAL DYNAMICS LTD	116,452	Miscellaneous Battery Retaining Fixtures &	103,889
3. MOBIL CORPORATION	69,059	Liquid Propellants & Fuel, Petroleum Base	69,059
4. SAUDI OPERATION & MAINTENANCE	36,667	Program Management/Support Services	36,667
5. ADVANCE ELECTRONIC CO LTD	32,303	Radio & TV Comm Equipment, Except Airborne	29,360
Total of Above	$455,783	(77.1% of total awards over $25,000)	

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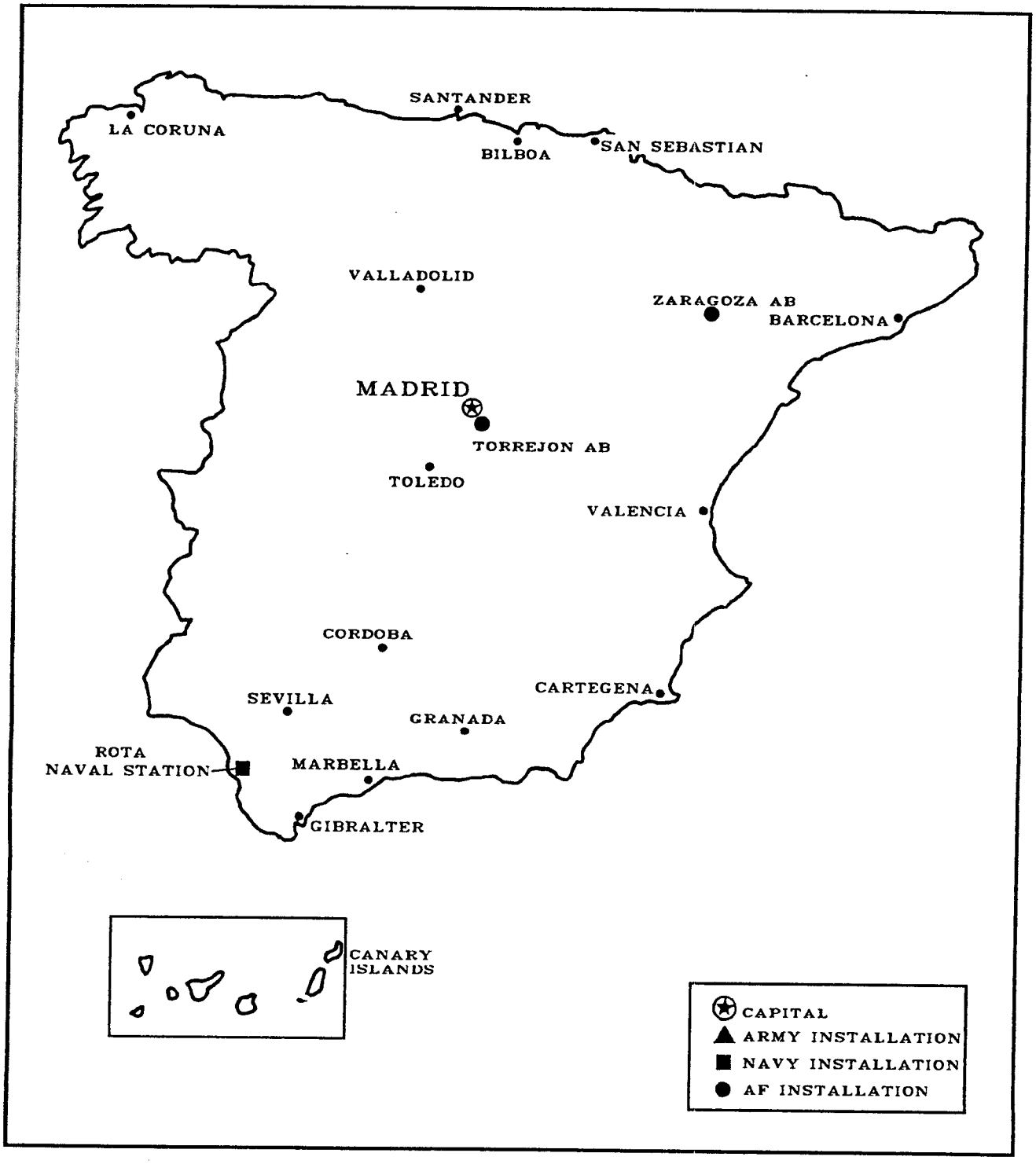
MAP NO. 70

SPAIN



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SPAIN

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	6,755	23	5,929	523	280
Active Duty Military	2,790	9	2,563	218	0
Civilian	410	8	219	17	166
Military Dependents	3,249	6	3,000	243	0
U.S. Civilian Dependents	306	0	147	45	114
II. Expenditures - Total	$365,088	$3,493	$169,399	$41,399	$150,797
A. Payroll Outlays - Total	121,258	1,823	91,232	20,941	7,262
Active Duty Military Pay	94,718	279	81,579	12,860	0
Civilian Pay	17,302	264	7,905	1,871	7,262
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	9,238	1,280	1,748	6,210	0
B. Prime Contracts Over $25,000 Total	243,830	1,670	78,167	20,458	143,535
Supply and Equipment Contracts	183,489	69	40,224	27	143,169
RDT&E Contracts	0	0	0	0	0
Service Contracts	42,584	1,601	20,300	20,317	366
Construction Contracts	17,757	0	17,643	114	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$176,189	$0	$36,139	$19,899	$120,151
Fiscal Year 1992	99,109	54-	24,611	52,797	21,755
Fiscal Year 1991	429,707	2,888	37,955	26,636	362,218

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. CIA ESPANOLA DE PETROLEOS SA	$142,248	Liquid Propellants & Fuel, Petroleum Base	$141,059
2. CESELSA SA	39,700	Electrical & Elct Meas & Test Instruments	39,000
3. PACIFIC ARCHTCTS ENGINEERS INC	14,979	Warehousing & Storage Services	14,499
4. NEWIMAR, S.A.	8,473	Family Housing Facilities	4,861
5. AIR GROUND SERVICES ESPANA S.A	3,723	Operation/Airport Terminals	3,723
Total of Above	$209,123	(85.8% of total awards over $25,000)	

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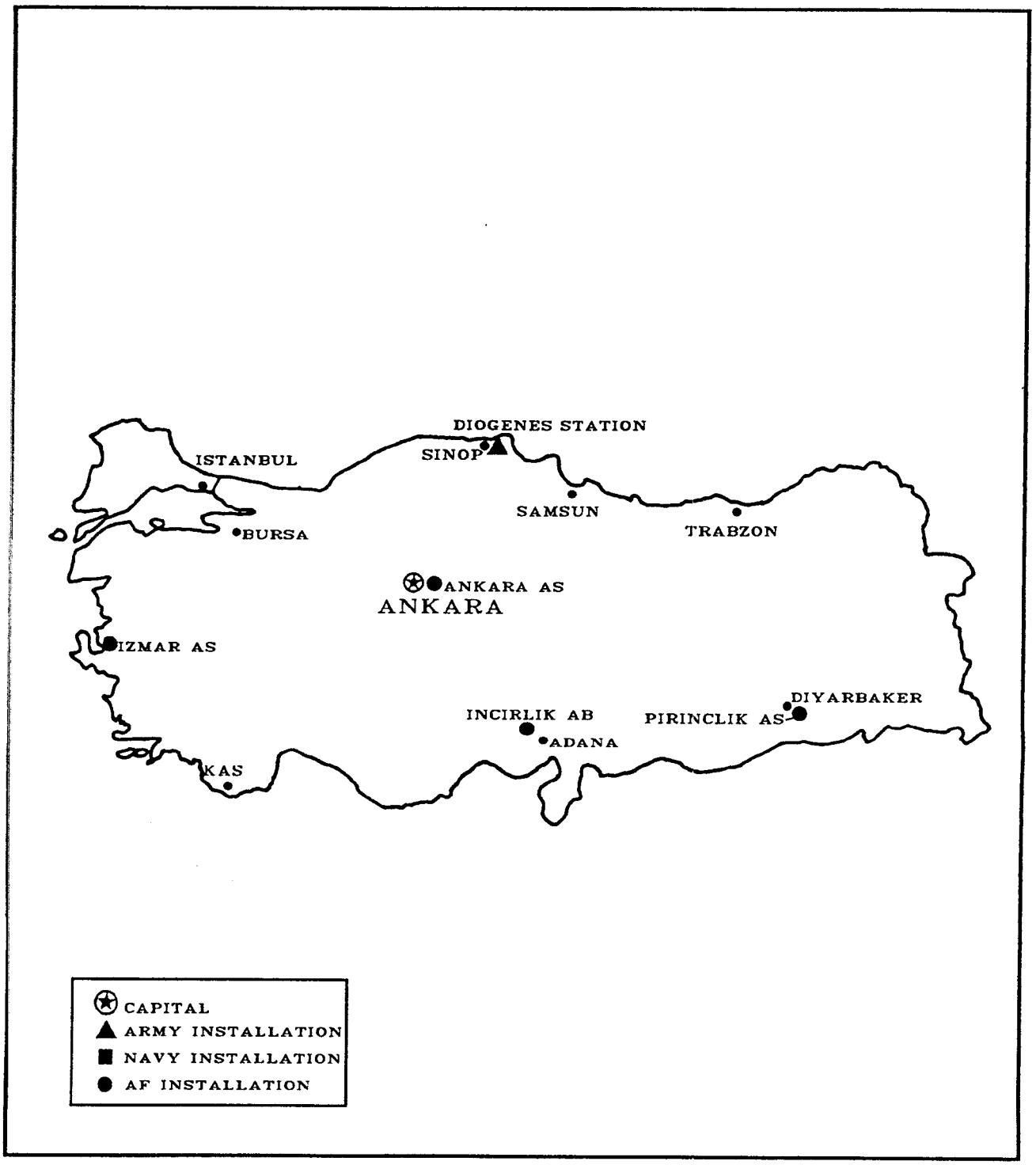
MAP NO. 71

TURKEY



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TURKEY

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	8,325	772	59	7,097	397
Active Duty Military	4,077	273	44	3,760	0
Civilian	802	25	0	444	333
Military Dependents	3,307	467	15	2,825	0
U.S. Civilian Dependents	139	7	0	68	64
II. Expenditures - Total	$247,787	$12,386	$3,818	$204,693	$26,890
A. Payroll Outlays - Total	137,138	9,238	2,983	112,924	11,993
Active Duty Military Pay	116,083	8,463	2,945	104,675	0
Civilian Pay	18,107	775	0	5,339	11,993
Reserve & National Guard Pay	0	0	0	0	0
Retired Military Pay	2,948	0	38	2,910	0
B. Prime Contracts Over $25,000 Total	110,649	3,148	835	91,769	14,897
Supply and Equipment Contracts	24,375	0	0	10,972	13,403
RDT&E Contracts	0	0	0	0	0
Service Contracts	83,294	959	835	80,006	1,494
Construction Contracts	2,980	2,189	0	791	0
Civil Function Contracts	0	0	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$135,688	$5,950	$2,328	$60,145	$67,265
Fiscal Year 1992	215,099	122	10,901	187,225	16,851
Fiscal Year 1991	273,974	4,686	4,710	213,873	50,705

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. CARLYLE PARTNERS LEVERAGED CAP	$41,373	Facilities Operations Support Services	$41,373
2. GENERAL ELECTRIC COMPANY	16,271	Operation/Electronic & Communication Facil	16,271
3. PATROL OFISI A S GENEL MUD	10,773	Fuel Oils	10,393
4. CUKUROVA ELEKTRIK AS	9,461	Electric Services	9,461
5. KOBA COMPANY LTD	3,855	Bakery and Cereal Products	3,312
Total of Above	$81,733	(73.9% of total awards over $25,000)	

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MAP NO. 72

UNITED KINGDOM

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Operations and Reports

UNITED KINGDOM

FISCAL YEAR 1994 (DOLLARS IN THOUSANDS)

Personnel/Expenditures 1/	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
I. Personnel - Total	35,666	379	4,985	29,399	903
Active Duty Military	13,781	243	2,060	11,478	0
Civilian	2,133	53	437	809	834
Military Dependents	18,905	66	2,263	16,576	0
U.S. Civilian Dependents	847	17	225	536	69
II. Expenditures - Total	$962,636	$84,725	$293,238	$442,572	$142,101
A. Payroll Outlays - Total	543,574	13,373	93,206	398,437	38,558
Active Duty Military Pay	420,997	7,533	68,861	344,603	0
Civilian Pay	81,745	1,855	18,838	22,494	38,558
Reserve & National Guard Pay	763	0	763	0	0
Retired Military Pay	40,069	3,985	4,744	31,340	0
B. Prime Contracts Over $25,000 Total	419,062	71,352	200,032	44,135	103,543
Supply and Equipment Contracts	270,950	22,499	132,393	30,226	85,832
RDT&E Contracts	18,761	8,264	3,520	1,804	5,173
Service Contracts	109,701	24,413	60,545	12,105	12,538
Construction Contracts	19,616	16,142	3,474	0	0
Civil Function Contracts	34	34	0	0	0

Prime Contracts Over $25,000 (Prior Three Years)	Total	Army	Navy & Marine Corps	Air Force	Other Defense Activities
Fiscal Year 1993	$620,895	$156,142	$202,157	$38,765	$223,831
Fiscal Year 1992	576,968	93,116	262,654	116,443	104,755
Fiscal Year 1991	773,794	59,812	389,375	147,104	177,503

Top Five Contractors Receiving the Largest Dollar Volume of Prime Contract Awards in this Country	Total Amount	Major Area of Work: FSC or Service Code Description	Major Area of Work: Amount
1. ROLLS-ROYCE PLC	$90,937	Gas Turbines and Jet Engines, Acft & Comps	$58,642
2. SALOMON INC	62,290	Fuel Oils	62,290
3. MARTIN-BAKER AIRCRAFT CO LTD	25,449	Msl Aircraft Accessories and Components	19,309
4. BOMBARDIER INC	24,211	Maint & Repair of Eq/Aircraft Comps & Accy	13,250
5. GENERAL ELECTRIC CO PLC THE	17,261	Night Vision Equipment, Emitted and Reflec	9,791
Total of Above	$220,148	(52.5% of total awards over $25,000)	

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AIR FORCE TEAM

First the budget cutters said active-duty units were too costly. Now they're asking how ready the Guard and Reserve must be.

The Force Mix Fight Heats Up

By John T. Correll, Editor in Chief

IMAGINE this. A few years from now, international accord is deteriorating. Early warning signs point to a coming conflict that may be too much for the pint-size US armed forces to handle.

About a third of the Navy and fully half the Army and the Air Force are in mothballs. Of the combat units available and ready, more than forty percent are in the National Guard or the Reserve. Altogether, the Air Force has only a dozen fighter wings. (AR)

The President mobilizes the Individual Ready Reserve. As Air Force Materiel Command pulls fighter aircraft out of storage, the recalled pilots begin a concentrated training program to requalify for cockpit duty.

It's easy to poke holes in this strategy and its shaky reliance on "stored" fighter wings, "cadre" divisions, and "nested" ships. Nevertheless, just such an option—called "Alternative III"—was seriously floated for discussion in September by the Congressional Budget Office.

CBO, like others exploring ways to cut the defense budget, begins with the assumption that a much smaller active-duty force will be sufficient, now that the global threat posed by the Soviet Union is gone. It also sees the possibility of different (and cheaper) forces in the National Guard and Reserve.

"If the United States would have years of warning before a major war, then today's selected reserves—those who are paid to train or drill in peacetime—may actually be more ready for war than necessary," CBO says. "They may also be too costly."

Alternative III is a radical application of the "flexible readiness" concept introduced in 1990 by Sen. Sam Nunn (D-Ga.), chairman of the Senate Armed Services Committee. Senator Nunn told defense leaders three years ago they would take heavy losses in force structure if they insisted on traditional readiness levels for all units. He suggested that some forces be assigned the mission "to be ready to get ready."

The mothball strategists might also claim some support from the Pentagon's latest Joint Military Net Assessment, which postulates extended warning time for a major crisis and cites "cadre-type units and stored equipment" among the assets that would allow a "reconstitution of forces."

When making that assessment, of course, the Joint Chiefs presumed the standing force would be substantially larger than Alternative III would allow and that there would be considerably more capability in both the active-duty and Selected Reserve components for the reconstitution units to build on. The presumption of long warning time was already factored into the Base Force calculation.

The real point of Alternative III, however, is not strategy. It's money. CBO estimates this option would cost about thirteen percent less than the projected Base Force, and that will appeal to politicians seeking new ways to cut more from the battered defense budget.

Experiments in Progress

Current Pentagon plans call for the creation of two cadre divisions in the

Mobilizing From Mothballs: Air Force Fighter Wing Equivalents

	Force in 1991	1997 Base Force	Aspin's Option C	Alternative III (CBO)
Active-duty wings	22	15	10	7
Selected Reserve wings	12	11	8	5
Stored wings	–	–	–	14
Total	34	26	18	26

Although fighter wings constitute only part of the operational Air Force, their total is used routinely by the Pentagon, Congress, and others as a shorthand for describing the force structure. The Base Force is the Bush Administration's plan for reductions by 1997. The main challenge to it has been Option C, proposed by Rep. Les Aspin. Alternative III is a recent—and radical—force mix concept laid out by the Congressional Budget Office.

Army. These units would be manned at about twenty-five percent of full strength in peacetime and fleshed out in wartime by Reservists.

The Navy, prodded by Congress, is considering a nested ship concept for seventeen percent of its frigate fleet. These vessels, manned at ten percent, would be based alongside fully crewed "mother ship" frigates for maintenance and support in peacetime.

So far, proposals for "teamed" squadrons and "stored" wings in USAF have not gone beyond informal discussion. The teamed squadron approach would store aircraft at the home base of an Air Guard or Reserve unit, manned at a higher level than usual to provide a cadre in the event of mobilization.

The stored wing approach would go further, mothballing aircraft wholesale. A variation on this idea, CBO says, would be for pilots in the remaining wings to fly all of the aircraft, including the stored ones, in rotation as an aid to keeping the entire fleet in working order.

Crews for the stored wings would be drawn not from the Selected (or drilling) Reserve but from the Individual Ready Reserve. They would be veterans who served in the armed forces at some point in the last few years and who can be called back in a declared national emergency.

CBO speculates that the new units might be ready for combat in a matter of months. The average pilot would need about six weeks of intensive flying to requalify, the analysts figure, but more time would probably be required, depending on the number of Reservists activated, the availability of practice ranges, and other factors.

There is no realistic chance that Alternative III will be adopted outright, at least not in the near future. Its real effect is to set a new bottom option in the force structure debate that is likely to play out this year between Congress and the Clinton Administration.

IMA vs Cn

The Base Force and Option C: Troop Strength in Active and Reserve Components

	Bush's Base Force		Aspin's Option C	
	Active-Duty	Reserve Component	Active-Duty	Reserve Component
Air Force	430,000	200,000	364,000	193,000
Army	536,000	567,000	476,000	550,000
Navy	501,000	118,000	432,000	112,000
Marine Corps	159,000	35,000	137,000	49,000
Total	**1,626,000**	**920,000**	**1,409,000**	**904,000**

The Base Force plan, proposed by the Bush Administration, would cut active-duty strength to 1.6 million by 1997. Rep. Les Aspin's Option C, endorsed by Bill Clinton in his election campaign, would lower the total to 1.4 million. Alternative III, introduced by the Congressional Budget Office, would cut active-duty strength to 1.25 million and the Reserve Component to 845,000.

Size and Mix

The bedrock force-structure issues are how large the armed services need to be and how the units and personnel should be distributed among the active-duty, National Guard, and Reserve components.

The Bush Administration's plan, called the "Base Force," was to reduce active-duty troop strength from a high of 2.3 million in the 1980s to 1.6 million by 1997 and to make commensurate reductions in the Guard and Reserve.

The principal challenge to the Base Force plan has been "Option C," proposed last year by Rep. Les Aspin (D-Wis.), chairman of the House Armed Services Committee. It would reduce active-duty forces to 1.4 million and put more of the force structure in the Guard and Reserve. This is basically the approach Mr. Clinton advocated in his election campaign.

From beginning to end, the Bush Administration clashed with Congress on the question of Guard and Reserve forces in the total mix.

Secretary of Defense Dick Cheney complained often that Congress demanded sweeping force cuts but blocked his ability to reduce the Guard and Reserve. One of his favorite examples is the drawdown of the Army's VII Corps, which used to keep two divisions deployed to Europe.

VII Corps had 100,000 active-duty troops, backed up by another 140,000 in its Guard and Reserve components. The entire active-duty component was eliminated, and VII Corps closed its headquarters, but, Mr. Cheney said in October, "I've still got the 140,000 Guardsmen and Reservists backing it up, and they no longer have a mission."

Mr. Cheney said the Defense Department is forced to keep troops it does not need because "my friends in Congress don't like to shut down Na-

tional Guard armories back home in their districts."

For its part, Congress accused Mr. Cheney's Department of cooking the books when it computed force requirements. According to Sen. John Glenn (D-Ohio), chairman of the Senate Armed Services Committee's Manpower and Personnel Subcommittee, a 1991 Defense Department Study that pointed to greater reliance on Reserve forces was "watered down" and its conclusions were "reversed 180 degrees."

In the defense budget adopted in October, Congress agreed readily to cut another 100,400 active-duty troops in 1993 (bringing to 309,900 the total cut in a three-year period), but balked at the proposal to take 115,997 troops out of the Reserve Component. The Senate and the House finally agreed in conference to approve a reduction of 39,617.

The Air Force has not been much involved in the Reserve Component dispute for several reasons. Far more so than the other services, the Air Force embraced the Total Force Policy early and relies heavily on the Air National Guard and the Air Force Reserve—both of which are superb—to perform core missions in peacetime as well as wartime. Neither the Air Guard nor the Air Force Reserve was projected to lose much in the Base Force reductions. Even a projected decrease in Reserve Component fighter wings will be offset by an increase in air refueling units, leaving the personnel structure essentially unchanged.

The Army's case is different. Its Base Force configuration was twelve active-duty, six Reserve, and two cadre divisions, down from sixteen active-duty and ten Reserve divisions in 1991.

The National Guard Association attacked the Pentagon's plan, calling instead for a force of ten active divisions and ten National Guard division equivalents. It also urged that, as a rule of thumb, *all* forces should be in the Guard or Reserve unless there are "compelling reasons" why their mission must be performed by active-duty personnel.

"There is no need for additional National Guard divisions in the structure," Gen. Colin Powell, Chairman of the Joint Chiefs of Staff, told the Senate Armed Services Committee, which asked him about the National Guard Association's counterproposal. "If we don't need twelve active divisions in the structure and we can take it down to ten—I don't think we can—but if we don't need twelve and have to go lower, we should not compensate for it by adding more, less-ready National Guard formations. We do not need more National Guard structure strength."

The next round in the debate will draw upon a new Total Force study that Congress directed the Pentagon to conduct and provide to Congress by December 1992. Secretary Cheney and General Powell were also told to submit by February 15 their assessment of the study group's findings.

Selected Reserve Strength (in Thousands)

Component	1980	1988	1991	1993	1997*
Air National Guard	96.3	115.2	117.8	119.3	118
Air Force Reserve	59.8	82.1	84.5	82.3	82
Army National Guard	366.6	455.2	446.1	422.7	338
Army Reserve	213.2	312.8	309.7	279.6	229
Navy Reserve	97.1	149.5	151.5	133.7	118
Marine Corps Reserve	35.4	43.6	44.9	42.3	35
Total	**868.4**	**1,158.4**	**1,154.5**	**1,079.9**	**920**

*Base Force

Sources: Department of Defense, Congressional Budget Office, 1993 Defense Authorization Act.

The Cost Difference

One of the strongest arguments for Guard and Reserve units in the force mix is that they cost less than active-duty units do. The flat assertion that Reserve ground component units operate for twenty-five percent of the cost of active-duty units, however, is too simplistic, General Powell told the Senate Armed Services Committee last spring.

"The cost figures vary," General Powell said. "I've seen numbers as low as twenty-five percent, [but] if you take a more sophisticated unit like an attack helicopter battalion, you will find that it starts to cost you up to seventy-five to eighty percent of the cost of an active-duty unit."

In a memo to members of the House Armed Services Committee in May, Chairman Aspin cited the cost of several types of Reserve Component units as a percentage of the cost of comparable active-duty units: Army Guard mechanized division, thirty-five percent; Army Guard infantry division, thirty percent; Marine Corps infantry battalion, thirty percent; Marine helicopter squadron, seventy percent; and Air Force F-16C/D squadron, seventy-five to eighty percent.

These savings, however, aren't a patch on what CBO claims might be achieved by moving both active-duty and Reserve Component forces into cadre, nested, or stored status. An active-duty F-16 wing based in Europe costs $3 million a year, CBO says. A similar F-16 wing in the Air National Guard costs $2 million. In a teamed configuration, the expense drops to $1.6 million, and a stored F-16 wing would cost only $330,000.

The Alternative III planners note that the Air Force now stores and maintains aircraft in contingency status for the Navy at Davis-Monthan AFB, Ariz. These aircraft get some monthly maintenance and an annual engine test. The average cost to keep an airplane in this condition is $20,000.

To estimate the cost of stored Air Force wings, CBO assumed an annual cost of $100,000 to "permit stored aircraft to be maintained at significantly higher levels of readiness than today's contingency planes."

Summing up the yield from all services, CBO figures the Alternative III force could be budgeted at $205.9

billion annually in 1993 dollars—or $32.1 billion less than the expense of the Base Force forecast by the Bush Administration.

The Total Relationship

"The Air Force Reserve is not a force in reserve. We contribute daily to the Air Force mission and are measured to the same standards as our active-duty counterparts," declares Maj. Gen. John J. Closner III, Chief of Air Force Reserve.

He has a point. The Air Force has been cited repeatedly as the service most committed to integrating and employing Reserve forces in the way the framers of the Total Force policy intended.

The Air Guard and the Air Force Reserve are both heavily tasked for numerous operational missions, even in peacetime. They handle more than half of the airlift work load and large shares of such other missions as rescue, reconnaissance, and aeromedical evacuation. Counting continental air defense interceptors flown by the Air National Guard, Reserve Component pilots will fill forty-eight percent of USAF's fighter cockpits by 1995. The prospect of assigning some of the heavy bomber mission to Reserve units has been discussed.

The Army experienced a bad bounce when a few of its National Guard roundout brigades were judged not ready to deploy when they were activated during the Persian Gulf War. Other ground units performed with distinction in the conflict. The Air Guard and Reserve began operations on the first day of the crisis and carried their full share of the wartime missions in admirable fashion.

Most of the time, when Total Force planners refer to "the Reserve Component," what they really mean is the Selected Reserve, whose members train at least forty days a year, usually much more than that. Nearly all of the pilots and many of the other personnel are veterans of the active-duty component.

At any given point, about 9,000 members of the Air National Guard and the Air Force Reserve will be serving tours of active duty that may last several years. Air Guard and Reserve units have some 35,000 "military technicians," members who work full-time for their units while also maintaining their status as drilling Reservists.

Also counted as part of the Ready Reserve—although the designation does not fit as well—are some 600,000 Individual Ready Reservists. These are people who served a tour in either the active-duty force or the Selected Reserve but who have not yet reached a combined total of eight years' active and inactive service. They can be called up in wartime or a declared national emergency. The Army, in fact, did mobilize about 17,000 Individual Ready Reservists during the Gulf War. The Air Force recalled a few of its Individual Ready Reserve medical personnel to fill specific skill shortfalls.

Another large segment of manpower is in the Retired Reserve, about 1.8 million retired military members from all services. They, like Individual Ready Reservists, are seldom called on, but, during the Gulf War, the Air Force mobilized about 1,250 retirees and the Marine Corps recalled 700.

The Air Force has no qualms about the caliber of its Guard and Reserve units, but reducing the active-duty component any lower than prescribed in the Base Force mix would probably meet stiff objection. The Bush Administration plan, attacked as insufficiently ruthless, cut the active-duty Air Force by thirty percent from its peak strength in the 1980s but left the Reserve Component levels essentially intact.

Alternative III would eliminate eight active-duty wings and six Reserve Component wings that were forecast in the Base Force. All together, the active-duty Air Force and the Selected Reserve would have only a dozen wings left to operate, with the other fourteen tucked away in storage.

It is difficult to imagine such a force having any quality edge on opponents in combat. The stored wing concept seems to assume implicitly that an effective fighting unit can be created by pulling individuals and pieces of equipment together in the same location. It further assumes that a stretch of refresher training is all that Individual Ready Reservists will need before going into battles where people bleed real blood.

Nobody is likely to invest much in new aircraft or system upgrades for a force in storage, so the hastily requalified crews could not expect to be flying top-of-the-line equipment. How well the aircraft would be maintained in storage is another question.

CBO theorists acknowledge that the mothballed force might need a lot of time to prepare. They estimate that some stored units, especially those in the ground forces, could require 720 days *or more* after mobilization before they are ready to deploy.

A critical assumption is the amount of warning time and what use the nation and its stored combat units would make of it. Given 720 days (or more) of strategic warning, there is no assurance that they would be devoted to mobilization and reconstitution of forces.

The politicians might view such preparation as provocative, increasing the likelihood of war. Or they may regard it as too great a financial burden for the voters to bear. It is entirely plausible that they would expend most of the warning interval making speeches to each other and dithering about. ■

What's What in the Reserve Component

The Ready Reserve

Selected (or drilling) Reserve. Units and individuals who train regularly and are responsible for significant portions of Total Force mission in peacetime.

Individual Ready Reserve. Veterans of active-duty, Guard, or Reserve service who have a residual obligation until they attain eight years' total active and inactive service.

Inactive National Guard (Army only). Guardsmen who do not participate in training but who would report to units in a mobilization.

The Standby Reserve Persons removed from the Ready Reserve for circumstances of civilian employment, ineligibility for mobilization, temporary hardship, or disability.

The Retired Reserve Retired military members who are still subject to call-up in an emergency.

Military Technicians Dual-status individuals who work full-time as civilians for Guard or Reserve units and also part-time as drilling Reservists or Guardsmen.

AIR FORCE TEAM

PART 7

SPECIAL USE AIRSPACE

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PART 7. SPECIAL USE AIRSPACE

Chapter 27. GENERAL

Section 1. POLICY

7000. INTRODUCTION

In addition to the requirements of Part 1, this part contains the policy, procedures, and criteria for the assignment, review, modification, and revocation of special use airspace. Special use airspace is airspace of defined dimensions wherein activities must be confined because of their nature, and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities.

7001. CATEGORIES

The handling of special use airspace matters falls into two categories. The first category consists of rulemaking actions which include restricted areas and prohibited areas. These relate to the assignment, review, modification, or revocation of airspace by a rule, regulation, or order as prescribed in Federal Aviation Regulations (See FAR Part 11). The second category consists of nonrulemaking actions and includes alert areas, controlled firing areas, and military operations areas (MOA's) where the FAA has the authority to make the final decision but does not express that decision by issuing a rule, regulation, or order. Also included in the nonrule category are offshore warning areas where the FAA has an interest, but the final approval is shared by other agencies.

7002. MINIMUM NUMBERS AND VOLUME

a. Special use airspace programs are designed to accommodate national security and welfare and necessary military activity. They identify for other airspace users where the activity occurs and protect other users from hazardous operations. While establishment of special use airspace is essential to national security and the military mission, unnecessary proliferation of these areas degrades the special use airspace program and adversely affects the overall efficiency of the National Airspace System.

b. The volume of airspace to be included in any specific area of special use airspace and the time during which it is to be assigned shall be the minimum required to contain the proposed user activities, including safety zones required by military authority. When an aircraft activity conducted in special use airspace could measurably affect the safety of persons or property on the surface, the proponent shall demonstrate that provisions have been made for their protection.

7003. OPTIMUM UTILIZATION

To ensure optimum airspace utilization, using agencies shall be encouraged to make their airspace available for the activities of other agencies on a shared use basis. In this regard, all special use airspace proposals shall be specifically reviewed for a determination of whether the military requirement can be accommodated within, or by modifying, existing areas.

7004. WAIVERS OF FAR's

The establishment/designation of special use airspace does not, in itself, waive any part of the Federal Aviation Regulations.

7005. ENVIRONMENTAL ASSESSMENT

Special use airspace actions are subject to environmental assessments and procedures if the floor of the proposed area is below 3,000 feet AGL or if supersonic flight is anticipated at any altitude. Compliance with the National Environmental Policy Act (NEPA) is the responsibility of the proponent under the lead agency concept. (See Order 1050.1.)

7006. COORDINATION OF PROPOSALS

Prior to submission for approval, military proponents of special use airspace will coordinate proposals with locally affected ATC facilities and military units, local FAA representatives/liaison officers where assigned, and the ARTCC having jurisdiction over the affected airspace. All coordination of nonmilitary proposals will be accomplished by the regional Air Traffic division.

7007. REGIONAL ACTION

Special use airspace rulemaking actions shall be processed in accordance with the procedures prescribed in FAR Part 11 and in Parts 1 and 7 of this Handbook. Nonrulemaking actions shall be processed in accordance with the procedures

described in Part 1 and this part. Upon receipt of a special use airspace proposal, the region shall:

a. Review the proposal for completeness and sufficient justification.

b. Coordinate the proposal to identify conflicts with the requirements of other airspace users. Give special attention to compatible airspace use relative to existing and planned airports and their associated airspace requirements.

c. Circularize the proposal in accordance with the procedures specified in Part 1 and the chapter of this part applicable to the type special use airspace proposed. Additionally, if it would increase the burden on the public and/or coordination and informal discussions indicate it will be controversial, circularize the proposal to interested persons under the procedures of Chapter 2, Section 2. Proposed actions which clearly do not impact aviation need not be circularized nor issued as an NPRM.

d. When comments, review, and/or coordination indicate that the proposal will be controversial, an informal airspace meeting may be scheduled in accordance with Chapter 2, Section 3 of this Handbook.

e. When conclusions are reached, complete processing as specified in the appropriate chapter of this part. When required, forward the proposal to ATP-200 for action. The package shall include at the minimum the region's recommendations, justification, documentation of regional actions, copies of pertinent correspondence, original sectional charts showing proper coordinates, and all other related information contained in Section 3 of this chapter that could be useful to make a determination or complete the coordination.

7008. JOINT USE

Special use airspace should be available for use by nonparticipating aircraft when all or part of the airspace is not required for its prescribed purpose provided there is no derogation to the using agency's mission. Because of their small size, geographic location, or high degree of utilization, some areas are impractical for joint use. Joint use procedures for specific types of airspace are contained in the appropriate chapter of this part.

7009. CONTROLLING AGENCY

Joint use of special use airspace requires the assignment of a controlling agency. The assigned facility is:

a. For joint use restricted areas, the ATC facility that may authorize transit through or flight within a restricted area in accordance with a joint use letter (reference FAR Part 73.17).

b. For other than joint use restricted areas, the FAA or the military ATC facility.

7010. USING AGENCY

Normally, the using agency is the agency, organization, or military command whose activity established the requirement for the special use airspace. An ATC facility may be the using agency for joint use areas when the facility is specified in a letter of procedure as having priority for use of the area.

7011. CHARTING AND PUBLICATION

With the exception of Controlled Firing Areas and an optional requirement for temporary MOA's and temporary restricted areas, special use airspace shall be reflected in aeronautical publications and depicted on aeronautical charts. New and revised areas normally become effective on the U.S. 56-day cycle publication dates (see Part 1).

7012-7119. RESERVED

Section 2. DIMENSIONS

7120. GENERAL

Special use airspace is described in terms of horizontal (boundaries) and vertical (altitude) dimensions, effective for a specified period of time.

7121. HORIZONTAL LIMITS

The horizontal limits of special use airspace are defined by geographic coordinates or other appropriate references that clearly describe their boundaries. Where it is difficult to establish boundaries easily discernible from the air, the area may be changed to allow the boundary to be located along some charted prominent terrain feature; i.e., rivers, highways, railroad tracks, etc. Except for temporary areas, boundaries shall not be described as "along the boundary" of another airspace area.

7122. VERTICAL LIMITS

a. Vertical limits shall be established, as necessary, to contain the planned activities. Stratification to enhance joint use is permitted and encouraged.

b. Within areas solely containing aircraft operations, altitudes at or above 18,000 feet MSL shall be expressed as flight levels. Within areas containing other than aircraft operations, altitudes at or above 18,000 feet MSL shall be expressed as feet above mean sea level (MSL).

c. Below 18,000 feet MSL, altitudes shall be expressed to the nearest 100 feet. Above 18,000 feet MSL, altitudes/flight levels shall be expressed to the nearest 500 feet.

d. Procedures for determining the floor of special use airspace vary according to area type and are contained in the appropriate chapters of this part.

e. Ceilings are expressed as flight levels or feet above MSL. Unless otherwise specified, the word "to" an altitude or flight level means "to and including" that altitude or flight level. If the vertical limit does not include the altitude or flight level, the ceiling shall be expressed as "to but not including."

7123. TIMES OF USE

a. Close scrutiny of proposed times of use is essential to good management of special use airspace. Publication of unrealistic usage times unnecessarily discourages pilots of nonparticipating aircraft from requesting transit or activity information. In determining the times of use, the guiding factors are equally to:

1. Assign the minimum period of time necessary to meet the requirements of the using agency.

2. Enhance real time joint use of special use airspace by conveying to nonparticipants definite and/or probable periods of inactivity. For areas that permit transit without specific approval, this must also be weighed against the opposite effect of presumed inactivity luring nonparticipants into a lack of vigilance in the area.

3. Keep to a minimum the amount of information necessary to publish and chart special use airspace areas.

b. Times of use shall be expressed using the terms or combinations of the terms indicated below and should reflect normal use for the majority of the time. When a using agency has knowledge of significant seasonal differences in usage requirements, different times of use may be established as appropriate; e.g., "Sep—Apr, Mon—Fri 0800—1700" and "May—Aug, Daily Sunrise—2300." Days of the week and/or months of the year should be indicated as appropriate.

1. Sunrise and sunset:

2. Specified time: Local time using the 24-hour clock.

3. Intermittent: Requires an associated time or NOTAM provision. Not applicable to restricted areas without a "by NOTAM" provision.

4. Continuous: Use only if justification exists for utilization 24 hours a day, 7 days a week. Not applicable to warning areas or combined use with 1 and 2 above.

5. By NOTAM:

(a) May be used alone or in combination with 1, 2, and 3 above when anticipated usage cannot be determined, or when the nature of the using agency's mission requires infrequent and/or erratic utilization. Use of the "by NOTAM" provision is not intended to provide solely for the "possibility of unforeseen short range requirements" of the using agency.

(b) Shall be applicable to an entire area and not only to a portion thereof. When time of use varies significantly from one portion of an area to another, action should be initiated to have dissimilar portions identified by subdivision or reestablished as separate areas.

(c) Activation by NOTAM should normally be at least 24 hours in advance. This may be reduced if justified to gain an operational advantage.

7124-7129. RESERVED

Section 3. CONTENT OF PROPOSALS

7130. DESCRIPTION

a. Title—A short definitive description of what is proposed.

b. Boundaries—A definitive description of the proposed area's perimeter in accordance with paragraph 7121.

c. Altitudes—Minimum and maximum altitudes in accordance with paragraph 7122.

d. Times of use—Local time operations are normally expected to begin and end in accordance with paragraph 7123.

e. Controlling agency—Not applicable when the airspace will not be joint use.

f. Using agency.

7131. COORDINATION

Furnish a resume of the coordination accomplished in accordance with paragraph 7006. For new areas, indicate that shared use and/or expansion of existing areas has been explored and determined unacceptable to satisfy the requirement for the proposed airspace. (See paragraph 7003.)

7132. JUSTIFICATION

The need for the proposed airspace must be definitive and able to support any resultant imposition on nonparticipants or affordance of priority to the special use proponent. Requirements, such as "the containment of military activity," or "in support of national defense," or other similar statements, in and of themselves are inadequate.

7133. ACTIVITIES

Activities include:

a. A detailed list of activities to be conducted by each organization proposing to use the area.

b. Local time daily operations normally are scheduled to begin and end. Include weather requirements if it is a condition of use. (See paragraph 7123.)

c. Number of hours (daily) the area will be used.

d. Days per week, weeks per month, or months per year, as appropriate, the area will be used.

e. If the area is to be used for aircraft operations, include:

1. The number and type of aircraft normally involved in performing activities for which the area is established.

2. A statement as to whether ground or airborne radar surveillance will be used during the operation. If radar surveillance will be used, indicate on the chart where the radar coverage is available.

3. The altitudes to be used in daily aircraft operations (expressed in feet MSL or flight levels as appropriate). For each type of activity, include the altitudes (or blocks of altitudes) and the number of hours these altitudes will be used. (See paragraph 7122.)

4. The intentions regarding flight at supersonic speeds.

f. If the area is to be used for surface firing (See paragraph 7122.):

1. Type weapon/s to be fired with their associated firing fans, footprints, buffers, etc.

2. Maximum altitude of surface firing (expressed in feet MSL) used in accomplishing required operations.

3. Number of hours highest altitude is to be used annually.

4. Altitude normally used for daily firing operations (expressed in feet MSL).

5. A detailed explanation of the peak hourly, daily, weekly, and monthly volume of firing.

g. Any special requirements.

7134. SAFETY CONSIDERATIONS

Include an explanation as to how each of the following, if applicable, is to be accomplished.

a. How activity will be confined within the proposed area.

b. Procedures for handling malfunctions.

c. Ordnance trajectory envelope.

7135. COMMUNICATIONS AND RADAR

Specify the availability and proposed utilization of ground and/or airborne communications coverage; e.g. range control, military radar unit (MRU), airborne radar unit (ARU), Fleet Area Control and Surveillance Facility (FACSFAC).

7136. ENVIRONMENTAL AND LAND USE INFORMATION

a. Identify the lead agency or appropriate representative responsible for compliance with NEPA.

b. Certify NEPA compliance. If delayed, must be in hand by FAA prior to issuance of final rule or publication cutoff date for nonrulemaking action.

c. Furnish the names, addresses, and telephone numbers of persons to whom comments on environmental and land use aspects may be submitted

d. Proposals requesting designation below 1,200 feet AGL which have underlying private or public use land must indicate agreement to provide reasonable and timely aerial access to such land. Prohibited

restricted area proposals requesting designation from the surface shall indicate that the proponent either owns, leases, or by agreement controls the underlying surface.

7137. GRAPHIC DISPLAY

Proposals shall include a graphic presentation of the proposed area on maps and aeronautical charts as appropriate. If applicable, the presentation should indicate those areas owned, leased, or controlled by the using agency. All proposals should, as a minimum, be depicted on an original Sectional Aeronautical Chart.

a. If the area is to contain aircraft operations, the following shall be depicted:

1. The location and the representative pattern of firing and/or bombing runs. If appropriate, show where run begins, lock-on point, where firing, if any, commences and ends, and release point and pullup points.

2. Impact areas.

b. If the area is to contain surface-to-surface or surface-to-air firings, the following shall be depicted:

1. Firing points.

2. Impact areas.

3. Perimeter of firing fans for each type weapon used.

7138. JOINT USE

State whether the area will be joint use, and if not, include justification.

7139. REMARKS

Specify any pertinent data not indicated elsewhere.

7140-7149. RESERVED

Section 4. REVIEW AND ANALYSIS

7150. ANNUAL REVIEW

ATP-200 and regional Air Traffic divisions shall systematically and periodically review special use airspace within their area of jurisdiction, and if required, initiate action to alter or revoke such airspace. As a minimum, the utilization of each area of special use airspace, except prohibited and warning areas, shall be reviewed on an annual basis.

7151. FORMAL/INFORMAL REVIEW

The review of special use airspace may be accomplished through formal or informal procedures. Formal reviews are conducted by special use airspace teams that are established when determined to be appropriate by ATP-200 or a regional Air Traffic division. Informal reviews are conducted on a continuous basis by all agency personnel engaged in handling special use airspace.

7152. TEAM REVIEW

Formal airspace reviews should be conducted by a special use airspace team that consists of three or more members. In matters involving Flight Standards, a representative from the Flight Standards division should be invited to participate as a member of the team. If required, representatives of more than one region can participate as members of the team. The team chairman should be an Air Traffic specialist of ATP-200 or the regional Air Traffic division. The selection and use of the special use airspace team should be on an "as required" basis, and a particular team shall be dissolved when its study is completed. Normally, team efforts should be directed toward problem areas evaluating the need for additional assignments of special use airspace and conducting reviews of selected special use areas for the purpose of developing recommendations for retention, alteration, or revocation based upon changing user requirements and/or actual utilization.

7153. TEAM RESPONSIBILITIES

The team shall act as a fact finding body for gathering complete information concerning the requirement for and use of special use airspace. It should determine the actual hours of use, altitudes and geographical area used, types of activities conducted, and any other pertinent information. Teams should not accept statements from users based on conjecture regarding the present or future usage of an area. Instead, any stated requirement must be based on factual data.

7154. DUTIES OF CHAIRMAN

In addition to the above general responsibilities of a special use airspace review team, the team chairman shall accomplish the following:

a. Prior to the team's visit to the area, coordinate with appropriate military commands and/or civil users. Coordination should be initiated far enough in advance of the team's visit to provide local representatives with sufficient time to prepare required data. Initial coordination with the military shall be effected through the appropriate regional military representative.

b. If deemed necessary, schedule an informal airspace meeting near the location of the area under study. Such a meeting would allow the users and other interested persons an opportunity to present their position and offer recommendations.

7155. TEAM REPORT

On completion of the review, the team shall analyze the information obtained and develop its recommendations. The team findings shall be forwarded through the regional Air Traffic division to the regional military representative for appropriate action. A copy shall be sent to ATP-200 and to the affected ATC facility/s. The report should include:

a. A summary of the positions of all interested civil and military users to include operational requirements and recommendations.

b. The findings, conclusions, and recommendations of the team.

c. Positions submitted in writing at a formal special use airspace review shall be attached to the team report.

7156 TEAM REPORT RESPONSES

The appropriate regional military representative should provide a response to the team report within 60 days. If the military concurs with the team's findings, conclusions, and recommendations, the Air Traffic division should initiate any appropriate airspace action and advise ATP-200. If the Air Traffic division and the military are unable to reach an agreement on the team's report, the Air Traffic division should forward the military position along with the Air Traffic division recommendation to ATP-200 for a determination. Also, provide a copy of the Air Traffic division recommendation to the appropriate military representative.

7157-7199 RESERVED

Chapter 28. PROHIBITED AREAS

Section 1. POLICY

7200. DEFINITION

A prohibited area is airspace designated under FAR Part 73 within which no person may operate an aircraft without the permission of the using agency.

7201. PURPOSE

Prohibited areas are designated when determined necessary to prohibit flight over a surface area in the interest of national security and welfare.

7202. IDENTIFICATION

Prohibited areas are identified by the prefix letter "P," followed by a dash, a two-digit number and a location (city/town/military reservation); e.g., "P-66 Rancho del Cielo, Goletta, CA." The identification number shall be assigned by ATP-200 and normally not until a proposal is published as an NPRM.

7203. EXTENT

Prohibited areas are normally designated from the surface to the minimum altitude required, with a continuous time of designation.

7204. PUBLICATION

Prohibited areas are designated and published in Part 73 of the Federal Aviation Regulations.

7205-7219. RESERVED

Section 2. PROCESSING

7220. SUBMISSION OF PROPOSAL

A proposal for the designation or amendment of a prohibited area should be submitted to the FAA regional Air Traffic division. If the proposal involves more than one region's airspace, Washington Headquarters (ATP-200) or a lead region may be designated as the focal point. The restrictions imposed by prohibited area designation are such that these actions are normally highly controversial and require indepth study. Although specifying a minimum processing time is impractical, at least 6 months is required for routine action.

7221. REGIONAL ACTIONS

After completion of the requirements of Chapter 27, prohibited area proposals shall be forwarded to ATP-200 for final determination. The proposal package shall include the region's recommendations, documentation of regional actions, copies of pertinent correspondence, and any other information that could be helpful in making a determination.

7222-7299. RESERVED

Chapter 29. RESTRICTED AREAS

Section 1. POLICY

7300. DEFINITION

A restricted area is airspace designated under FAR Part 73 within which the flight of aircraft, while not wholly prohibited, is subject to restriction.

7301. PURPOSE

Restricted areas shall be designated when determined necessary to confine or segregate activities considered to be hazardous to nonparticipating aircraft.

7302. IDENTIFICATION

Restricted areas are identified by the prefix letter "R," followed by a dash, a four-digit number, and a location (city/town/area/military reservation and state); e.g., R-2904 Camp Blanding, FL. A letter suffix is assigned to denote subdivisions; e.g., R-3005A Townsend, GA. Identification numbers shall be obtained from ATP-200 and will not normally be assigned until the proposal is published as a proposed rule.

7303. RESTRICTED AREA FLOOR

Restricted area floors will not normally be designated lower than 1,200 feet above the surface. If a valid requirement exists and there is minimal adverse aeronautical effect on the overall system, restricted areas can be established lower than 1,200 feet above the surface. However, the surface may be designated as the floor only when the using agency either owns, leases, or, by agreement otherwise, controls the underlying surface. At a minimum, provisions must be made for aerial access to private and public use land which underlies the restricted area and to accommodate instrument arrivals/departures with minimum delay. The restricted area shall exclude the airspace 1,500 feet AGL and below within a 3 NM radius of airports available for public use.

7304. PUBLICATION

Restricted areas are designated and published in FAR Part 73.

7305. JOINT USE

a. Restricted areas are designated as joint use areas by designating a using and a controlling agency and by executing a letter of procedure which provides for the operation of nonparticipating IFR and/or VFR flight within the area. Flight within these areas is controlled by the using agency except when released to the controlling agency during periods the airspace is not being used for its designated purpose. During such periods, the controlling agency may permit aircraft operations within the area.

b. When it is determined that a restricted area will be designated as joint use, the appropriate region will assign a controlling agency which shall, in conjunction with the using agency, execute a joint use letter of procedure. The preparation of the letter of procedure shall be in accordance with Order 7210.2. Also, see Figure 7-1. The format may be modified where local conditions warrant a departure from and/or the addition of other provisions, such as vertical and/or lateral subdivision of an area to facilitate joint use. For VFR operations it may be desirable to base lateral subdivisions on obvious, well defined landmarks. Charting of these subdivisions is optional.

c. The regional air traffic division shall be the approving authority of all joint use letters of procedure. This authority may be delegated to the facility designated as the controlling agency.

d. When there is a requirement to provide air traffic control services within a restricted area, the facility providing that service will be designated as the controlling agency.

Note.—Before ATC services can be provided in such airspace, it must be designated controlled airspace under FAR Part 71.

e. If both IFR and VFR requirements exist and if the controlling agency is an ATC facility remotely located from the restricted area, the area may be "flagged" on charts indicating to pilots that permission to transit the restricted area may be obtained by contacting an area or local FSS rather than the ATC facility.

f. Communications between the controlling and using agencies concerning the timely release of joint use restricted areas shall be outlined in the letter of procedure. Communications shall be accomplished by direct access telephone whenever possible. A record shall be made of all such communications.

se records shall be retained for 15 days or ger if needed.

g. Procedures for clearing IFR flights with respect to joint use restricted areas are contained in Order 7110.65.

7306. TEMPORARY RESTRICTED AREAS

a. Procedures to establish temporary restricted areas for military exercises are specified in Section 3 of this chapter. Temporary areas for other than military exercised may be designated to accommodate short term activities of various government or private agencies involved in research and development or other activity determined to be hazardous to nonparticipating aircraft.

b. Every attempt shall be made to process proposals in minimum time and provide the proponent assistance in submitting a proper proposal. Proponents shall be encouraged to seek permission from using agencies to conduct their activities within established restricted areas to preclude unnecessary designation of additional restricted airspace.

7307-7319. RESERVED

Figure 7-1. JOINT USE LETTER OF PROCEDURE

FEDERAL AVIATION ADMINISTRATION
Washington, D.C. 20591

JOINT USE RESTRICTED AREA LETTER OF PROCEDURE

SUBJECT: Joint Use Letter of Procedure for Use of Restricted Area R-_____

EFFECTIVE: _____

In accordance with §73.13, §73.15, and §73.17 of the Federal Aviation Regulations, the following letter establishes procedures for the use of Restricted Area R-_____, by _____, the Controlling Agency, and by _____, the Using Agency.

1. The Using Agency shall release R-_____ to the Controlling Agency when not in use for the purpose designated.

2. During the time when the airspace is released to the Controlling Agency, FAA may clear IFR traffic and authorize VFR traffic into R-_____

3. The Controlling Agency shall return the use of R-_____ to the Using Agency upon request. Such request shall be made at least _____(hours/minutes) prior to use by the Using Agency. (In determining this specific time, consideration should be given to such factors as: (1) IFR procedures which impinge upon the Restricted Area; (2) communications; and (3) time required to ascertain that all VFR aircraft shall be clear of the area.) _____ Tower, RAPCON, RATCF, FSS, etc., is designated as liaison station for the relaying of information concerning the release of the area between the Controlling Agency and the Using Agency. (This statement to be used only when required.)

EXECUTED:

For the Controlling Agency:	For the Using Agency:
Signed _____	Signed _____
Air Traffic Manager, _____	(Title) _____
_____ (Date)	_____ (Date)

Section 2. PROCESSING

7320. SUBMISSION OF PROPOSALS

Restricted area proposals are submitted to the FAA regional Air Traffic division at least 9 months in advance of the desired effective date. Military proposals shall be submitted through the appropriate regional military representative. The following schedule represents the minimum time to process proposals which require only routine coordination.

Calendar Days	
D	Proposal Received by FAA region.
D+30	Proposal reviewed by region and submitted to Washington Headquarters.
D+95	Proposal reviewed by Washington Headquarters. NOS coordination and chart preparation and Notice of Proposed Rulemaking (NPRM) is prepared and forwarded to Federal Register.
D+100	NPRM published in Federal Register.
D+145	Comment period for NPRM ends. Comments are directed to appropriate region.
D+165	Comments reviewed by appropriate region, and recommendations forwarded to Washington Headquarters within 20 days.
D+220	Proposal and comments receive final review. Rule is prepared and forwarded to Federal Register.
D+225	Rule published in Federal Register at least 30 days prior to effective date.
D+225-281	NOS cutoff date/rule effective date within this time frame (NOS cutoff date is 8 weeks prior to rule effective date).

7321. REGIONAL ACTION

After completion of the requirements of Chapter 27, restricted area proposals shall be forwarded to ATP-200 for final determination. The proposal package shall include the region's recommendations, documentation of regional actions, copies of pertinent correspondence, and any other information that could be helpful in making a determination.

7322-7329. RESERVED

Section 3. TEMPORARY RESTRICTED AREAS FOR MILITARY EXERCISES

7330. HANDLING REQUIREMENTS

The handling of temporary restricted airspace requirements associated with military exercises differs significantly from the processing of other restricted airspace requirements. The following paragraphs provide definitive guidelines for handling the details associated with such exercises.

7331. INFORMAL COORDINATION

Before submitting a formal proposal requesting a temporary restricted area for a military exercise, the proponent should be encouraged to initiate informal coordination with the appropriate FAA region. This informal review can do much in eliminating future objections to the proposal. Where potential problem areas are noted, mutually agreeable adjustments to the proposed area should be made before formally submitting the proposal. During this coordination, primary consideration should be given, but not limited, to the selection of the ground maneuver area. This is because the requirement for restricted airspace will be directly dependent upon the location of the ground maneuver area. Attention should be given to the impact that a particular site location would have on IFR and VFR airway traffic, regularly used VFR routes, off airway air carrier routes, airports within and in proximity, instrument approach and missed approach areas, approach and departure procedures, and any special military operations.

7332. MILITARY EXERCISES

To assist FAA and military personnel in planning and preparing for military exercises requiring restricted airspace, the following time-phased listing of information items that are normally required in the processing of the request for special use airspace has been developed. It is unlikely that the list below includes all items of information that may be required for a specific military exercise and, conversely, certain items will not be applicable in all cases. Its primary purpose is to provide a common basis from which this agency and the DOD can proceed toward determining and meeting the peculiar airspace requirements associated with military exercises.

7333. REQUIRED INFORMATION

Information normally required for processing requests, developing procedures, and time periods required by the FAA are described as follows:

a. After all informal coordination has been completed and at least 8 months prior to the desired effective date of a temporary restricted area, a formal proposal should be submitted to the FAA. The proposal should include:

1. Name of exercise.
2. Location and description of area.
3. Time of designation.
4. Controlling and using agency.
5. Complete justification for the area to include:

(a) Number of aircraft involved.

(b) Types of aircraft and missions they will perform.

(c) The exercise concept of operation (scenario).

6. A statement explaining if the entire area, as requested, is required for the complete exercise period, or does the scenario allow for releasing a portion of the area. If a portion can be released, what part, vertically or horizontally, and for what period of time.

7. Requirements for refueling tracks, location, VFR or IFR, in or below positive controlled airspace.

8. Commands that will take part in exercise.

9. Requirements for FAA liaison personnel at exercise facilities and military liaison personnel at affected ATC facilities.

10. Provision to be made for nonparticipating aircraft desiring to operate within area.

(a) Local airport operations.

(b) Ingress and egress routes.

(c) Over flights.

(d) Acceptance of reverse charge telephone requests from pilots.

(e) Capability of the using agency to accept direct radio requests from pilots.

b. Four months prior to the proposed effective date of restricted area an NPRM is published provided the proponent furnishes the following data:

1. Bases to be used as staging airfields and estimated volume of activity at each.

2. Bare (inactive) bases to be activated and their locations.

3. Military control facilities or navigation aids to be established where none now exist for use of participating aircraft outside of restricted area. Information provided should include locations and frequencies.

4. Requirements for ingress and egress areas (vector areas).

5. Requirements for routes from staging bases to include estimated volume of use.

6. Location of military air traffic facilities.

7. Requirements for refueling tracks, location, VFR or IFR, in or below area positive control.

8. Requirements for military control of exercise traffic outside of restricted area.

9. Requirements for FAA liaison personnel at exercise facilities.

c. Three months prior to beginning of exercise:

1. Make provisions to assure that participating pilots are provided the capability of closing VFR flight plans.

2. Provide information concerning other activities not mentioned which will require development of special operating procedures and/or FAA military agreements.

3. NPRM comment period ends. Comments analyzed.

d. Two months prior to beginning of exercise provide any additional information deemed necessary by the FAA. During this period, the rule is published designating the restricted area, or the proposal is rejected, and the NPRM is withdrawn.

e. Forty-five (45) days prior to beginning of exercise:

1. Provide any additional information deemed necessary by the FAA or exercise proponent.

2. Provide copies of all established procedures and agreements for distribution to FAA and military personnel who require this information.

7334. DISCOURAGE LATE CHANGES IN REQUIREMENTS

The proponent of a temporary restricted area should be discouraged from making late changes in stated requirements which would generate different procedures from those previously developed. In any case, no change should be made within 45 days of the exercise unless (a) absolutely essential to the safe and successful conduct of the exercise, or (b) to reduce the amount of airspace to be restricted.

7335. TIME REQUIREMENTS

The agency requires a sufficient amount of time to designate airspace, develop procedures, and complete actions necessary to assist the proponent of an exercise to realize its objectives with a minimum of problems. To accomplish this mission, the planning and execution of that portion of the maneuver which deals with air traffic control must be a joint military/FAA effort from site selection to the final day of the exercise. In summary, close, early, and continuous coordination is essential.

7336. SUBMISSION OF PROPOSALS

Calendar Days

D	Proposal received by FAA region.
D+30	Proposal reviewed by region and submitted to Washington Headquarters.
D+95	Proposal reviewed by Washington Headquarters. NOS coordination and chart preparation. Notice of Proposed Rulemaking (NPRM) is prepared and forwarded to Federal Register.
D+100	NPRM published in Federal Register.
D+145	Comment period for NPRM ends. Comments are directed to appropriate region.
D+165	Comments reviewed by appropriate region, and recommendations forwarded to Washington Headquarters within 20 days.
D+220	Proposal and comments receive final review. Rule is prepared and forwarded to Federal Register.
D+225	Rule published in Federal Register at least 30 days prior to effective date.
D+225-260	Class II NOTAM cutoff date/Rule effective date within this time frame. (Class II NOTAM cutoff date is 5 weeks prior to Rule effective date.)

7337-7339. RESERVED

Section 4. ANNUAL UTILIZATION REPORT

7340. REQUIREMENT

Part 73.19 of the Federal Aviation Regulations requires using agencies to submit an annual utilization report detailing the use of each assigned restricted area. Supplemental reports may also be required upon request by the FAA.

7341. REVIEW

A detailed review of the annual utilization report shall be made by the appropriate regional Air Traffic division to:

a. Determine if a particular area's utilization is consistent with its airspace designation or if an adjustment is in order.

b. Provide data for and to supplement a team review of an area.

c. Assist in resolution of questions concerning an area.

7342. REPORT AMENDMENTS

If, after reviewing a utilization report it is determined that additional information is needed to evaluate the use of a restricted area, the regional Air Traffic division shall request the using agency to submit a supplemental report in accordance with FAR 73.19. Requests for supplemental reports shall identify the specific additional information which is to be reported.

7343. REVIEW SUMMARY

Regional Air Traffic divisions shall conduct annual utilization reviews of all restricted areas within their jurisdiction and forward recommendations for corrective action, if required, to the regional military representative. An annual review summary including recommendations or actions taken, as appropriate, shall be submitted to ATP-200 ATTN: ATM-420 by June 15 of each year.

7344-7399. RESERVED

Chapter 30. WARNING AREAS

Section 1. POLICY

7400. DEFINITION

A warning area is airspace of defined dimensions over international waters that contains activity which may be hazardous to nonparticipating aircraft. Because international agreements do not provide for prohibition of flight in international airspace, no restriction to flight is imposed. The term "warning area" is synonymous with the International Civil Aviation Organization (ICAO) term "danger area."

7401. PURPOSE

Warning areas are established in international airspace to contain activity that may be hazardous and to alert pilots of nonparticipating aircraft to the potential danger.

7402. IDENTIFICATION

Warning areas are identified by the prefix letter "W," followed by a dash, a two- or three-digit number, and a location (city/town/area/military reservation and state); e.g., W-72 VACAPES VA. A letter suffix is assigned to denote subdivisions; e.g., W-72A VACAPES, VA. Identification numbers shall be assigned by ATP-200.

7403. PUBLICATION

When established, warning areas are published in the National Flight Data Digest (NFDD). Additionally, information concerning warning areas not adjacent to or near the conterminous United States, Alaska, or Hawaii, will be disseminated by International NOTAM's issued by National Flight Data Center (NFDC) at least 28 days prior to effective date.

7404. JOINT USE

When it is determined that a warning area will be established as joint use, a letter of agreement will be executed to assign a controlling agency and define the conditions under which nonparticipating aircraft may be authorized to operate within the area. Apply the procedures of paragraph 7305 as appropriate.

7405-7419. RESERVED

Section 2. PROCESSING

7420. SUBMISSION OF PROPOSALS

Warning area proposals are submitted to the FAA regional Air Traffic division through the appropriate military representative at least 7 months in advance of the desired effective date. The following schedule represents the minimum time to process proposals which require only routine coordination.

Calendar Days	
D	Proposal received by FAA region.
D+30	Proposal reviewed by region and coordinated as required. Nonrule circularization published.
D+75	Comment period for nonrule circularization ends.
D+95	Comments reviewed, and proposal forwarded to ATP-200 with region's recommendations.
D+140	E.O. 10854 and NOS coordination completed by ATP-200.
D+160	Warning area published in NFDD on or before cutoff date for next available charting date.
D+160-216	NOS cutoff date/effective date within this time frame. (NOS cutoff date is 8 weeks prior to effective date.)

7421. REGIONAL ACTION

After completion of the requirements of Chapter 27, warning area proposals shall be forwarded to ATP-200 for final coordination and publication.

7422. E.O. 10854 COORDINATION

In accordance with Executive Order 10854, warning area actions require coordination with Departments of State and Defense. This coordination will be accomplished by ATP-200 and normally requires a minimum of 45 days.

7423-7499. RESERVED

Chapter 31. MILITARY OPERATIONS AREAS (MOA'S)

Section 1. POLICY

7500. DEFINITION

A military operations area (MOA) is airspace established outside positive control area to separate/segregate certain nonhazardous military activities from IFR traffic and to identify for VFR traffic where these activities are conducted.

7501. PURPOSE

The military has a continuing requirement to conduct nonhazardous training activities, such as air combat maneuvers, air intercepts, acrobatics, low altitude tactics, etc. MOA's are established to contain these activities in airspace as free as practicable from nonparticipating aircraft.

7502. IDENTIFICATION

MOA's shall be identified by the use of a nickname from a geographical location or any other common name; e.g., "GATOR" or "FORT STEWART," and if desired, further identified in numerical sequence; e.g., "MOODY 1," "MOODY 2," etc. Cardinal points, letters, or "high" and "low" may be used to identify subsections; e.g., "GATOR LOW." Lengthy composites of the above are cumbersome for communications and charting and should be avoided.

7503. MOA FLOOR

If a valid requirement exists and there is minimal adverse aeronautical effect on the overall system, MOA's can be established below 1,200 feet AGL. Determination of effect must include special consideration for aerial access to private and public use land and for terminal VFR and IFR flight operations. At a minimum, provisions must be made to accommodate instrument arrivals/departures with minimum delay, and the MOA shall exclude the airspace 1,500 feet AGL and below within a 3 nautical mile radius of airports available for public use.

7504. LOCATION

While MOA's should be located to create minimum adverse impact on nonparticipating aircraft operations, full consideration shall be given to the military requirement. Where necessary, feasible, and a significant operational advantage will not be lost, airspace configurations may be changed and routes realigned or revoked to accommodate establishment of MOA's. Establishment of terminal or en route airspace to coincide with or supersede existing MOA's shall be avoided unless a significant operational advantage can be gained. MOA's shall not be established off-shore outside the U.S. 3 NM territorial limit. Additionally, and to the extent possible, locate MOA's:

a. Within radar and communication coverage of an ATC facility or Military Radar Unit (MRU).

b. Within 100 miles of the base of flight origin.

c. Outside terminal airspace and away from Federal airways and regularly used VFR routes.

7505. CONTROLLED AIRSPACE

Designate controlled airspace to coincide with MOA's only if IFR ATC service is to be provided in that airspace by an FAA or military ATC facility.

7506. JOINT USE

MOA's, in effect, are always joint use in that VFR aircraft are not denied access and that IFR aircraft may be routed through the airspace when approved separation can be provided from MOA activity. Procedures for use of the airspace by nonparticipating IFR traffic shall be set forth in letters of agreement executed between the controlling and the using agencies. Such letters shall also include procedures for the appropriate flight service stations to be provided real-time active/inactive status of the MOA.

7507-7519. RESERVED

Section 3. TEMPORARY MOA'S

7530. GENERAL

Regional Air Traffic divisions are the approval authority for temporary MOA's. Approved temporary MOA's shall be forwarded to ATP-200 for processing and publication. Disapproved proposals shall be fully documented in correspondence to the proponents with a copy to ATP-200. If the proponent resubmits the proposal, the regional office shall reevaluate and forward the package to ATP-200 for final determination.

The provision for temporary MOA's is in recognition of the military's need for additional airspace to periodically conduct readiness exercises that supplement routine training. When it is known that this need will occur on a regular and continuing basis, the necessary airspace should be considered for establishment as a permanent MOA with provisions for its activation by NOTAM/Special Notice disseminated well in advance of the scheduled activity.

7531. LOCATION AND DURATION

When existing airspace is inadequate to accommodate short-term military training exercises, temporary MOA's may be established for a period not to exceed 30 days. Preference will be given to expansion of existing MOA's over establishment of new areas.

7532. PUBLICATION

In all cases, approval of temporary MOA's shall include the provision that the military publicize the exercise within 100 miles of the affected airspace through such avenues as public media, pilot forums, and distribution of bulletins to known aviation interests. Determination of appropriate additional publication for temporary MOA's requires a case-by-case evaluation according to the scope of the exercise, anticipated impact on nonparticipants, time constraints, and other considerations. Normally, temporary MOA's will be published by NOTAM "L," at least 24 hours prior to activation, and Class II Graphic NOTAM's (available through ATP-200 on 8-9 weeks notice). Mailing the Graphic NOTAM to all licensed pilots within the appropriate geographical area may be required to ensure adequate notification of the temporary airspace. Publication of temporary MOA's on aeronautical charts is normally not required; however, it may be a provision of approval if, because of anticipated impact on nonparticipants, such action is determined essential to aviation safety. Full consideration shall be given to the potential detrimental effect on the military of the additional processing time associated with aeronautical chart cyclic printing dates, and such a requirement shall not be imposed without ATP-200 concurrence.

7533. SUBMISSION OF PROPOSALS

Temporary MOA proposals are submitted to the FAA regional Air Traffic division through the appropriate regional military representative at least 4 months prior to the desired effective date. The following schedule represents the minimum time to process proposals which require only routine coordination.

Calendar Days

D	Proposal received by FAA region.
D+15	Proposal reviewed by region and coordinated as required. Nonrule circularization published.
D+60	Comment period for nonrule circularization ends.
D+80	Comments reviewed by region and approval/disapproval determination made and forwarded to Washington Headquarters within 20 days.
D+100-135	Class II NOTAM cutoff date/effective date within this time frame. (Class II NOTAM cutoff date is 5 weeks prior to effective date.)

7534-7599. RESERVED

Section 2. PROCESSING

7520. SUBMISSION OF PROPOSALS

MOA proposals are submitted to the FAA regional Air Traffic division through the appropriate regional military representative at least 6 months in advance of the effective date. The following schedule represents the minimum time to process proposals which require only routine coordination.

Calendar Days

D	Proposal received by FAA region.
D+30	Proposal reviewed by region and coordinated as required. Nonrule circularization published.
D+75	Comment period for nonrule circularization ends.
D+95	Comments reviewed and approval recommendation or disapproval determination made by region. MOA's recommended for approval sent to ATP-200 for final determination and processing.
D+115	NOS coordination and MOA published in NFDD on or before cutoff date for next charting date.
D+115-171	NOS cutoff date/effective date within this time frame. (NOS cutoff date is 8 weeks prior to effective date.)

7521. REGIONAL ACTION

a. ATP-200 is the final approval authority for MOA's. After completion of the requirements of Chapter 27, the regional Air Traffic division shall forward MOA proposals which are recommended for approval to ATP-200 for final determination. The proposal package shall include the region's recommendations, documentation of regional actions, copies of pertinent correspondence, and any other information that can be helpful in making a determination.

b. Authority to disapprove MOA proposals is delegated to the regional Air Traffic division. Disapproved proposals shall be fully documented in correspondence to the proponent with a copy to ATP-200. If the proponent resubmits the proposal, the regional office shall reevaluate and forward the package to ATP-200 for final determination.

7522-7529. RESERVED

Chapter 32. ALERT AREAS
Section 1. GENERAL

7600. PURPOSE

Alert areas are established to inform pilots of specific areas wherein a high volume of pilot training or an unusual type of aeronautical activity is conducted.

7601. ACTIVITY

The activity within an alert area shall be conducted in accordance with Federal Aviation Regulations, without waiver, and pilots of participating aircraft, as well as pilots transiting the area, shall be equally responsible for collision avoidance. The establishment of alert areas does not impose any flight restrictions or communication requirements. Flight service stations in the vicinity may broadcast information regarding the use being made of the area, as circumstances dictate. Operations which may be hazardous to other aircraft shall not be conducted within alert areas since such activity must be confined within restricted areas.

7602. MINIMUM NUMBERS

Alert areas should only be established when a determination has been made that dissemination of the information concerning the activity would be of operational value to the flying public.

7603-7619. RESERVED

Section 2. ESTABLISHMENT

7620. PROPOSALS/REQUESTS

Regional Air Traffic divisions are responsible for initiating proposals or processing requests for alert areas and submitting recommendations to ATP-200.

7621. REVIEW BY ATP-200

ATP-200 is responsible for reviewing the regional recommendations and making the final determination regarding the establishment of alert areas.

7622. CHART DEPICTION

Alert areas shall be flagged on aeronautical charts with information regarding time of use, altitudes employed, and type of activity conducted. They will be identified by the prefix letter "A" followed by two or more digits. ATP-200 shall assign the identifying number.

7623. TIME OF SUBMISSION

Proposals for the establishment of alert areas shall be submitted to the appropriate regional office at least 6 months in advance of the desired effective date.

Calendar Days

D	Proposal received by FAA region.
D+30	Proposal reviewed by region and coordinated as required. Nonrule circularization published.
D+75	Comment period for nonrule circularization ends.
D+95	Comments reviewed by region, and recommendations forwarded to Washington Headquarters within 20 days.
D+115	NOS coordination and Alert Area published in NFDD on or before cutoff date for next charting date.
D+115-171	NOS cutoff date/effective date within this time frame. (NOS cutoff date is 8 weeks prior to effective date.)

7624. CONTENT OF PROPOSALS

These proposals shall include the following information:

a. Title: A definitive description of what is proposed.

b. Purpose: A comprehensive explanation as to why the action is proposed.

c. Location and Dimensions:

1. A description of the airspace requested by geographic coordinates or other appropriate reference that clearly define the areas.

2. Minimum and maximum altitudes (MSL/AGL) as appropriate

3. A graphic presentation of the proposal to maps and aeronautical charts as appropriate.

d. Pertinent data on activities to be conducted:

1. A detailed list of activities to be conducted in the area by all user organizations.

2. Time, expressed in local time, daily operations normally are scheduled to begin and end.

3. Number of hours (daily) the area will be used.

4. Days per week, weeks per month, or months per year, as appropriate, the area will be used.

5. Number and type of aircraft normally involved in performing activities for which the area is requested.

6. Altitudes (MSL/AGL) to be used in daily aircraft operations.

7625. REGIONAL ACTIONS

Upon receipt of a proposal for an alert area, the appropriate region shall comply with the provisions of Part 1 and this part.

7626-7629. RESERVED

Section 2. ESTABLISHMENT

7620. PROPOSALS/REQUESTS

Regional Air Traffic divisions are responsible for initiating proposals or processing requests for alert areas and submitting recommendations to ATP-200.

7621. REVIEW BY ATP-200

ATP-200 is responsible for reviewing the regional recommendations and making the final determination regarding the establishment of alert areas.

7622. CHART DEPICTION

Alert areas shall be flagged on aeronautical charts with information regarding time of use, altitudes employed, and type of activity conducted. They will be identified by the prefix letter "A" followed by two or more digits. ATP-200 shall assign the identifying number.

7623. TIME OF SUBMISSION

Proposals for the establishment of alert areas shall be submitted to the appropriate regional office at least 6 months in advance of the desired effective date.

Calendar Days

D	Proposal received by FAA region.
D+30	Proposal reviewed by region and coordinated as required. Nonrule circularization published.
D+75	Comment period for nonrule circularization ends.
D+95	Comments reviewed by region, and recommendations forwarded to Washington Headquarters within 20 days.
D+115	NOS coordination and Alert Area published in NFDD on or before cutoff date for next charting date.
D+115-171	NOS cutoff date/effective date within this time frame. (NOS cutoff date is 8 weeks prior to effective date.)

7624. CONTENT OF PROPOSALS

These proposals shall include the following information:

a. Title: A definitive description of what is proposed.

b. Purpose: A comprehensive explanation as to why the action is proposed.

c. Location and Dimensions:

1. A description of the airspace requested by geographic coordinates or other appropriate reference that clearly define the areas.

2. Minimum and maximum altitudes (MSL/AGL) as appropriate

3. A graphic presentation of the proposal to maps and aeronautical charts as appropriate.

d. Pertinent data on activities to be conducted:

1. A detailed list of activities to be conducted in the area by all user organizations.

2. Time, expressed in local time, daily operations normally are scheduled to begin and end.

3. Number of hours (daily) the area will be used.

4. Days per week, weeks per month, or months per year, as appropriate, the area will be used.

5. Number and type of aircraft normally involved in performing activities for which the area is requested.

6. Altitudes (MSL/AGL) to be used in daily aircraft operations.

7625. REGIONAL ACTIONS

Upon receipt of a proposal for an alert area, the appropriate region shall comply with the provisions of Part 1 and this part.

7626-7629. RESERVED

Chapter 33. CONTROLLED FIRING AREAS

Section 1. GENERAL

7700. PURPOSE

Controlled firing areas are established to contain activities which, if not conducted in a controlled environment, would be hazardous to nonparticipating aircraft. It is the user's responsibility to provide for the safety of persons and property on the surface, and the proponent's written request for a controlled firing area should indicate that such provisions have been made.

7701. BASIS FOR APPROVAL

The approval of a controlled firing area shall only be considered for those activities which are either of short duration or of such a nature that they could be immediately suspended on notice that such activity might endanger nonparticipating aircraft. Examples of such activities are as follows:

a. The firing of missiles, rockets, anti-aircraft artillery, and field artillery. (Includes military and civil firings, and in the case of rockets, also pertains to those fired by amateurs.)

b. Static testing of large rocket motors.

c. Blasting.

d. Ordnance disposal.

e. Chemical disposal.

7702-7719. RESERVED

Section 3. CRITERIA

7630. GENERAL

The criteria in this section shall be applied to determine whether or not alert areas should be established. The activity must be nonhazardous, and all flight activity shall be conducted in accordance with visual flight rules.

7631. HORIZONTAL BOUNDARIES

To the extent possible, these areas should be established so as to avoid Federal airways, major terminal areas, and high volume VFR routes. After an alert area is established, the designation of Federal airways through such areas should be kept to a minimum.

7632. VERTICAL DIMENSIONS

The ceiling and floor shall be established at levels necessary to contain the activity. In addition, the ceiling shall not extend into positive control airspace nor the floor established below 4,000 feet above ground level within a control zone.

7633. TIME ASSIGNMENT

A time period, expressed in local time, shall be specified to indicate hours of regularly scheduled use. When conditions warrant, provision may also be made for activation of the area by Notice to Airmen during other than regularly scheduled hours.

7634. TYPES OF OPERATIONS

Only the following types of operations should be considered.

a. Concentrated Student Training: A high volume of flight operations at one or more airports at a given location. Singly or jointly, the volume of activity should exceed 250,000 local operations annually and be generated primarily by student training in fixed-wing or rotary-type aircraft. A local operation is an aircraft arrival at or departure from an airport in which the aircraft:

1. Operates in the local traffic pattern or within sight of the tower.

2. Is known to be departing for, or arriving from, flight in local practice areas.

3. Executes simulated instrument approaches or low passes at the airport.

b. Unusual Aerial Activity: This type of activity is harder to define and must be individually considered as to its operational significance to the flying public. As an example, an alert area may be established where regularly used VFR routes transit an area which regularly contains a specialized type of air traffic and where prior knowledge of such traffic would significantly enhance aviation safety.

7635-7699. RESERVED

Section 2. ESTABLISHMENT

7720. RESPONSIBILITY FOR APPROVAL

The authority to approve or disapprove controlled firing area proposals rests with the regional Air Traffic divisions within whose jurisdiction the activity will take place.

7721. SUBMISSION REQUIREMENTS

The proposal for a controlled firing area should be submitted to the appropriate regional Air Traffic division at least 3 months in advance of the desired effective date.

7722. CONTENT OF PROPOSALS

Controlled firing area proposals should include the information listed in Chapter 27, Section 3.

7723. REGIONAL ACTION

Upon receipt of a proposal requesting a controlled firing area, the responsible regional Air Traffic division shall:

a. Review the proposal to determine if the proposed area's location would conflict with the requirements of other airspace users.

b. Accomplish the following:

1. If practicable, encourage the proponent to explore the feasibility of conducting the activity in an existing restricted area.

2. After reaching a decision to approve or disapprove a proposal, inform the proponent of such decision by formal letter. If approval is granted, issue a Certificate of Waiver to FAR Part 101 as required.

3. If the decision is to approve a proposal, the letter of approval shall include, as a minimum, the following:

(a) Activity for which approval has been granted.

(b) Specific area for the activity.

(c) Altitudes.

(d) The name of the user.

(e) Time of use.

(f) Effective date.

(g) Safety precautions to be observed (see Section 3 of this chapter).

(h) Instructions, if applicable, for the user to notify the owner or manager of any airport that might be affected by the controlled firing area.

(i) Instructions for the user to file the following information with the nearest flight service station in sufficient time to permit a notice to airmen to be transmitted at least 12 hours prior to scheduled operations:

(1) Location of the area.

(2) Time of use.

(3) Activity to be conducted.

(4) Altitudes.

(5) User.

c. Circularize potentially or known controversial proposals.

d. Forward to ATP-200, for information purposes, a copy of the request for a controlled firing area and subsequent regional action.

7724-7729. RESERVED

Section 3. SAFETY PRECAUTIONS

7730. PRECAUTIONARY MEASURES

Precautionary measures necessary to protect aircraft in flight, and where appropriate, persons and property on the surface are dependent on the type of activity, terrain, and other factors involved. The approving FAA office shall assure that adequate safety precautions are established for each controlled firing area. The following precautionary measures are considered to be the minimum required and shall be mandatory for all controlled firing areas:

a. The ceiling shall be at least 1,000 feet above the highest altitude of fire or other activity that could be hazardous to aircraft in the area.

b. Visibility shall be sufficient to maintain visual surveillance of the entire controlled firing area and for a distance of 5 miles therefrom in all directions.

7731. RADAR SURVEILLANCE

If the approving FAA office determines that adequate radar surveillance is available, the criteria set forth in paragraph 7730a and b need not apply. The approving FAA office may establish ceiling and visibility requirements as it deems necessary; however, no projectile is to enter any cloud formation.

7732. SAFETY OFFICER

The user of a controlled firing area shall appoint a safety officer. This person is responsible to see that surveillance of the area and for distance of 5 miles therefrom is maintained immediately prior to and during the time that activity hazardous to aircraft is in progress. Surveillance may be accomplished by ground observers, radar, patrol aircraft, and/or surface vessels. While the use of any one or a combination of the methods in considered satisfactory, the limited capabilities of a surveillance plan based solely on the use of ground observers must be recognized. Although it would not be reasonable to restrict the altitude of an area on this factor alone, its limitations must be considered.

7733. USER RESPONSIBILITIES

The user must agree to cease any activity which creates a hazard upon notification that an aircraft is approaching the area. To accomplish this, each observer shall have continuous effective communications with the safety officer and shall be thoroughly briefed as to observer responsibilities.

7734-7999. RESERVED

May 11, 1995

UPDATE 5/11/95: DISREGARD PREVIOUS COPIES

To: CeCe, Chip, Sylvia, Cristin, David, Charlie, Wade, Chuck, John, Commissioners

Fr: Jim Schufreider

Re: Bases/facilities slated for closure **(C)**, realignment **(R)**, redirect **(Rd)**, or receive **(Rcv)** and the affected Members' districts. **Bold** connotes an add.
* = primary Member

Alabama	**C/R/Rd/Rcv**	**Governor**	**Senators**	**Member(s)**
Ft. McClellan	C	James, Jr. (D)	Heflin (D) Shelby (R)	Browder (D-3)
Anniston Army Dep.	Rcv	"	"	Browder (D-3)
Redstone Arsenal	Rcv	"	"	Cramer (D-5)
Space & Strat. Cmd.	**C**			"
Alaska				
NAF Adak	C	Knowles (D)	Stevens (R) Murkowski (R)	Young (R-AL)
Ft. Greely	R	"	"	Young (R-AL)
Ft. Wainwright	Rcv	"	"	Young (R-AL)
Arizona				
Williams AFB	Rd	Symington (R)	McCain (R) Jon Kyl (R)	Hayworth (R-6)
Ft. Huachuca	Rcv	"	"	Kolbe (R-5)
Yuma Proving Grd.	Rcv	"	"	Pastor (D-2)
Arkansas				
Ft. Chaffee	C	Tucker (D)	Bumpers (D) Pryor (D)	Hutchinson (R-3)
California				
Long Beach	C	Wilson (R)	Feinstein (D) Boxer (D)	Horn (R-38) * Waters (D-35) Tucker (D-37) Harman (D-36) Dixon (D-32) Torres (D-34)
Ft. Hunter Liggett	R	"	"	Farr (D-17)

Sierra Army Depot	R	"	"	Herger (R-2)
N. Highlands AGS	C	"	"	Matsui (D-5) Fazio (D-3)* Pombo (R-11)
Ontario IAP AGS	C	"	"	Kim (R-41)
McClellan AFB	**C/R**	**"**	**"**	**Fazio (D-3)**
Onizuka Air Station	R	"	"	Lofgren (D-16) Mineta (D-15) Eshoo (D-14) *
Moffett AGS	C	"	"	Mineta (D-15) Lofgren (D-16) * Eshoo (D-14)
East Ft. Baker	C	"	"	Woolsey (D-6)
Rio Vista USARC	C	"	"	Fazio (D-3)
Branch Disciplinary Barracks, Lompoc	C	"	"	Seastrand (R-22)
Reserve Center, Pomona	C	"	"	Kim (R-41)
Resrv. Ctr Santa Ana, Irvine	C	"	"	Dornan (R-46)
Reserve Center, Stockton	C	"	"	Pombo (R-11)
MCAS El Toro/Tustin	Rd	"	"	Dornan (R-46)
NAVPERS San Diego	C	"	"	Bilbray (R-49)
Nav. Health Res., San Diego	C	"	"	Bilbray (R-49)
NADEP, North Island	Rcv	"	"	Bilbray (R-49)
DCMD West, El Segundo	Rcv	"	"	Harman (D-36)
FISC, Oakland	**C**	**"**	**"**	**Dellums (D-9)**
SupShip, SFO	**C**	**"**	**"**	**Pelosi (D-8)**
EFAW, San Bruno	**C/R**	**"**	**"**	**Lantos (D-12)**
NWAD, Corona	**C/R**	**"**	**"**	**Calvert (R-43)**
NAWC, Pt. Mugu	**C/R**	**"**	**"**	**Gallegly (R-23)**
Oakland Army Terminal	**C/R**	**"**	**"**	**Dellums (D-9)**

Colorado

Lowry AFB	Rd	Romer (D)	Brown (R) Campbell (R)	Schroeder (D-1)
Fitzsimons Hosp.	C	"	"	Schroeder (D-1) * Schaefer (R-6)
Ft. Carson	Rcv	"	"	Hefley (R-5)
Falcon AFB	Rcv	"	"	Hefley (R-5)
Peterson AFB	Rcv	"	"	Hefley (R-5)

Connecticut

Stratford Army Eng.	C	Rowland (R)	Dodd (D) Lieberman (D)	DeLauro (D) * Shays (R)
NUWC, New London	C	"	"	Gejdenson (D)

District of Columbia				
Walter Reed AMC	Rcv	---	"	Norton (D-AL)
Florida				
NAS Key West	R	Chiles (D)	Graham (D) Mack (R)	Deutsch (D-20)
Eglin AFB	R	"	"	Scarborough (R-1)
MacDill AFB	Rd	"	"	Gibbons (D-11)
***Homestead AFB**	**C**	"	"	**Meek (D-17)**
Patrick AFB	Rd	"	"	Weldon (R-15)
Big Coppett Key	C	"	"	Deutsch (D-20)
NADEP, Pensacola	Rd	"	"	Scarborough (R-1)
NPPTC, Orlando	Rd	"	"	Mica (R-7)
		"	"	McCollum (R-8) *
NTC, Orlando	Rd	"	"	Mica (R-7)
		"	"	McCollum (R-8) *
NAS Cecil Field	Rd	"	"	Fowler (R-4)
Georgia				
***Robins AFB**	**R/C**	**Miller (D)**	**Nunn (D)** **Coverdell (R)**	**Chambliss (R-8)**
Ft. Gordon	Rcv	"	"	Norwood (R-10)
DCMD South, Marietta	C	"	"	Barr (R-7)
NAS Atlanta	**C**	"	"	**Gingrich (R-6)**
Guam				
Ship Repair Facility	C	Gutierrez (D)	---	Underwood (D-AL)
Naval Activities	R	"		Underwood (D-AL)
Public Works Center	**R/C**	"		"
Hawaii				
Tripler AMC	Rcv	Cayetano (D)	Inouye (D) Akaka (D)	Abercrombie (D-1)
NAS Barbers Point	Rd	"	"	Abercrombie (D-1) * Mink (D-2)
Illinois				
Price Support Center	C	Edgar (R)	Simon (D) Moseley-Braun (D)	Costello (D-12)
Savanna Army Depot	C	"	"	Evans (D-17) *

				Leach (R-1/IA)
O'Hare ARS	**R/C**	"	"	**Hyde (R-6)**

Indiana

NAWC Indianapolis	C	Bayh (D)	Lugar (R)	Jacobs (D-10) *
			Coats (R)	Burton (R-6)
NSWC Crane	Rcv	"	"	Hostettler (R-8)

Kansas

Reserve Center Olathe	C	Graves (R)	Dole (R)	Meyers (R-3)
			Kassebaum (R)	

Kentucky

NOS Louisville	C	Jones (D)	Ford (D)	Ward (D-3) *
			McConnell (R)	Hamilton (D-9/IN)
Ft. Knox	Rcv	"	"	Lewis (R-2)

Louisiana

Naval Biodynamics Lab	C	Edwards (D)	Johnston (D)	Jefferson (D-2)
			Breaux (D)	
Reserve Cen., New Orleans	C	"	"	Jefferson (D-2)

Maine

NAS Brunswick	Rcv	King (I)	Cohen (R)	Longley (R-1)
			Snowe (R)	Baldacci (D-2)
Portsmouth Naval Shipyard	**C**	"	"	**Longley (R-1)**

Maryland

Ft. Ritchie	C	Glendening (D)	Sarbanes (D)	Bartlett (R-6) *
			Mikulski (D)	Shuster (R-9/PA)
NSWC White Oak	C	"	"	Hoyer (D-5)
		"	"	Morella (R-8) *
				Wynn (D-4)
Ft. Meade	R	"	"	Hoyer (D-5) *
		"	"	Gilchrest (R-1)
				Cardin (D-3)
NSWC Annapolis	R	"	"	Gilchrest (R-1)
Pub. Distrib. Center	C	"	"	Ehrlich (R-2) *
				Cardin (D-3)
				Mfume (D-7)
Concepts Anlys Agnc.	Rd	"	"	Morella (R-8)
Aberdeen Prov. Grd	Rcv	"	"	Ehrlich (R-2)

Revised

Ft. Detrick	Rcv	"	"	Bartlett (R-6)
Naval Med. Res. Inst.	R	"	"	Morella (R-9)
DIS Ft. Holabird	**R/C**	**"**	**"**	**Gilchrest (R-1)**

Massachusetts

NAS S. Weymouth	C	Weld (R)	Kennedy (D) Kerry (D)	Studds (D-10)
Sudbury Train. Anx.	C	"	"	Meehan (D-5)
Hingham Cohst. USARC	C	"	"	Studds (D-10)
Natick RD&E Ctr.	Rcv	"	"	Markey (D-7)

Michigan

Selfridge Army Garrsion	C	Engler (R)	Levin (D) Abraham (R)	Bonior (D-10)
Detroit Arsenal	R	"	"	Levin (D-12)
Detroit Tank Plant	C	"	"	Levin (D-12)
Reserve Center Cadillac	C	"	"	Hoekstra (R-2)

Minnesota

Minn.-St. Paul ARS	**C**	**Carlson (R)**	**Wellstone (D)** **Grams (R)**	**Sabo (D-5)**

Mississippi

NAS Meridian	C	Fordice (R)	Cochran (R) Lott (R)	Montgomery (D-3)
Columbus AFB	**R/C**	**"**	**"**	**Montgomery (D-3)**

Missouri

ATCOM, St. Louis	C	Carnahan (D)	Bond (R) Ashcroft (R)	Gephardt (D-3) * Clay (D-1) Talent (R-2)
Ft. Leonard Wood	R	"	"	Skelton (R-7)
St. Louis Pub. Ctr.	Rcv	"	"	Clay (D-1) Gephardt (D-3) * Talent (R-2)

Montana

Malmstrom AFB	R	Racicot (R)	Baucus (D) Burns (R)	Williams (D-AL)
Ft. Missoula	C	"	"	Williams (D-AL)

New Jersey

NAES Lakehurst	C	Whitman (R)	Bradley (D) Lautenberg (D)	Smith (R-4)
Bayonne Ocean Ter.	C	"	"	Menendez (D-13) *
		"	"	Payne (D-10)
Ft. Dix	R	"	"	Saxton (R-3)
Camp Pedricktown	C	"	"	LoBiondo (R-2)
Camp Kilmer	C	"	"	Pallone (D-6) *
				Franks (R-7)
Caven Point USARC	C	"	"	Torricelli (D-9) *
				Payne (D-10)
Ft. Monmouth	Rcv	"	"	Pallone (D-6)
New Mexico				
Kirtland AFB	R	Johnson (R)	Domenici (R) Bingaman (D)	Schiff (R-1) * Skeen (R-2)
				Richardson (D-3)
New York				
Ft. Hamilton	R	Pataki (R)	Moynihan (D) D'Amato (R)	Molinari (R-13) * Schumer (D-9)
				Towns (D-10)
				Owens (D-11)
				Velasquez (D-12)
Rome Laboratory	C	"	"	Boehlert (R-23)
Seneca Army Depot	C	"	"	Houghton (R-31)
Roslyn AGS	C	"	"	King (R-3) *
				Ackerman (D-5)
Griffiss AFB	Rd	"	"	Boehlert (R-23)
Watervliet Arsenal	Rcv	"	"	McNulty (D-21)
Bellmore Logist. Act.	C	"	"	King (R-3)
Ft. Drum	Rcv	"	"	McHugh (R-24)
Real-Time DCAPA, Buffalo	C	"	"	Quinn (R-30)
Ft. Totten	C	"	"	Ackerman (D-5)
Reserve Center, Staten Isl.	C	"	"	Molinari (R-13)
Niagara ARS	**R/C**	"	"	**LaFalce (D-29)**
North Carolina				
Rec. Ctr. #2, Fayetteville	C	Hunt (D)	Helms (R) Faircloth (R)	Hefner (D-8) * Clayton (D-1)
				Rose (D-7)
MCAS Cherry Point	Rd	"	"	Jones (R-3)
North Dakota				
Grand Forks AFB	**C/R**	**Schafer (R)**	**Conrad (D)**	**Pomeroy (D-AL) ***

			Dorgan (D)	**Peterson (D-7/MN)**
Minot AFB	R	"	"	Pomeroy (D-AL)
Ohio				
Springfield-Beckley MAP AGS	C	Voinovich (R)	Glenn (D) Dewine (R)	Hobson (R-7)
Def. Dist. Depot Columbus	R	"	"	Pryce (R-15) * Kasich (R-12)
DCMC, Dayton	R	"	"	Hall (D-3)
Youngstown-Warren ARS	**C/R**	"	"	**Traficant (D-17)**
Oklahoma				
McAlester Army Ammo. Plt.	Rcv	Keating (R)	Nickles (R) Inhofe (R)	Brewster (D-3)
Tinker AFB	**C/R**	"	"	**Watts (R-4) ***
		"	"	**Istook (R-5)**
Vance AFB	**C/R**	"	"	**Lucas (R-6)**
Pennsylvania				
Greater Pittsburgh IAP, ARS	C	Ridge (R)	Specter (R) Santorum (R)	Doyle (D-18)
Ft. Indiantown Gap	C	"	"	Gekas (R-17)
NSWC Warminster	C	"	"	Greenwood (R-8) *
		"	"	McHale (D-15) Fox (R-13)
Letterkenny Depot	**C/R**	"	"	**Shuster (R-9) ***
		"	"	**Bartlett (R-6/MD)**
Kelly Support Center	R	"	"	Doyle (D-18)
Def. Ind. Supply Ctr., Phila.	R	"	"	Borski (D-3) * Fattah (D-2) Foglietta (D-1)
Tobyhanna Army Depot	**C**	"	"	**McDade (D-10)**
NAESU/NATSF, Phila.	C	"	"	Borski (D-3)
Puerto Rico				
Ft. Buchanan	R	Rossello (NP)	---	Romero-Barcelo (D)
Nav. Sta. Roosevelt Rds.		"	"	Romero-Barcelo (D)
Rhode Island				
NETC Newport	Rcv	Almond (R)	Pell (D) Chafee (R)	Kennedy (D-1)
NUWC Newport	Rcv	"	"	Kennedy (D-1)
South Carolina				

Ft. Jackson	Rcv	Beasley (R)	Thurmond (R)	Spence (R-2)
			Hollings (D)	
Reserve Center Charleston	C	"	"	Sanford (R-1) *
				Clyburn (D-6)
				Spence (R-2)
FISC, Charleston	C	"	"	Sanford (R-1) *
				Clyburn (D-6)
				Spence (R-2)
WPNSTA Charleston	Rcv	"	"	Sanford (R-1) *
				Clyburn (D-6)
				Spence (R-2)
Tennessee				
Def. Dist. Depot, Memphis	C	Sundquist (R)	Thompson (R)	Ford (D-9) *
			Frist (R)	Lambert (D-1/AR)
NAS Memphis	Rcv	"	"	Tanner (D-8)
Texas				
Red River Depot	C	Bush, Jr . (R)	Gramm (R)	Chapman (D-1) *
			Hutchison (R)	Dickey (R-AR/4)
				McCrery (R-LA/5)
				Brewster (D-OK/3)
Lone Star Ammo.	Rcv	"	"	Chapman (D-1)
Reese AFB	C	"	"	Combest (R-19)
Brooks AFB	C	"	"	Gonzalez (D-20)
				Bonilla (R-23)
				Smith (R-21)
				Tejeda (D-28) *
NAS Corpus Christi	R	"	"	Ortiz (R-27) *
			"	de la Garza (D-15)
				Laughlin (D-14)
Reserve Center, Laredo	C	"	"	Ortiz (D-27)
Bergstrom ARB	C	"	"	Doggett (D-10) *
				Laughlin (D-14)
* **Kelly AFB**	**C/R**	"	"	**Gonzalez (D-20) ***
(include. San Ant. ALC)				**Smith (R-21)**
				Bonilla (R-23)
				Tejeda (D-28)
Ft. Sam Houston	Rcv	"	"	Gonzalez (D-20)
Ft. Bliss	Rcv	"	"	Coleman (D-16) *
				Skeen (R-2)
Elec. War. Eval. Sim. Act.	C	"	"	Geren (D-12)
NAS Kingsville	Rcv	"	"	Ortiz (D-27)
* **Carswell ARS**	**C/R**	"	"	**Geren (D-12)**

Laughlin AFB	**C/R**	"	"	**Bonilla (R-23)**

Utah

Dugway Proving Grd	C	Leavitt (R)	Hatch (R) Bennett (R)	Hansen (R-1)
Hill AFB	**C/R**	"	"	**Hansen (R-1) ***
		"	"	**Waldholtz (R-2)**
Def. Depot, Ogden	C	"	"	Waldholtz (R-2)
			"	Hansen (R-1) *

Virginia

Ft. Pickett	C	Allen (R)	Warner (R) Robb (D)	Sisisky (D-4)
Ft. Lee	R	"	"	Sisisky (D-4) * Scott (D-3) Bliley (R-7)
Ft. Lee-Kenner Hosp.	R	"	"	Sisisky (D-4)
Ft. Belvoir	Rcv	"	"	Moran (D-8)
ISSC, Fairfax Lease	R	"	"	Davis (R-11)
NAS Oceana	Rcv	"	"	Sisisky (D-4) * Clayton (D-1/NC)

Washington

NUWC Keyport	R	Lowry (D)	Gorton (R) Murray (D)	White (R-1)
Camp Bonneville	C	"	"	Smith (R-3) * Tate (R-9)
Ft. Lewis	Rcv	"	"	Dicks (D-6) * Tate (R-9)
NAS Whidbey Island	Rcv	"	"	Metcalf (R-2)

West Virginia

Valley Grove AMSC	C	Caperton (D)	Byrd (D) Rockefeller (D)	Mollohan (D-1)

Wisconsin

Rsrv. Ctr. Sheboygan	C	Thompson (R)	Kohl (D) Feingold (D)	Sensenbrenner (R-9)
Gen. Mitchell ARS	**C**	"	"	**Kleczka (D-4)**

United States Senate

104TH CONGRESS

Notes:

(1) Building abbreviations are:
DSOB = Dirksen Senate Office Building
HSOB = Hart Senate Office Building
RSOB = Russell Senate Office Building

(2) Use of ZIP+Four in mail to Senators' offices will expedite delivery.
When writing, do not use room or building. The correct form is, e.g.:
Honorable Spencer Abraham
United States Senate
Washington, DC 20510-2203

(3) Note: Some room assignments will change before publication of the Spring edition of the *Congressional Yellow Book.*

104th Congress: Republicans: 54 Democrats: 46
103rd Congress: Republicans: 47 Democrats: 53

Name	Location	ZIP+Four	Telephone	Fax Number
A				
Abraham, Spencer (R-Mich.)	*SD-B40 DSOB	20510-2203	224-4822	224-8834
Akaka, Daniel K. (D-Hawaii)	SH-720 HSOB	20510-1103	224-6361	224-2126
Ashcroft, John (R-Mo.)	*SH-705 HSOB	20510-2504	224-6154	
B				
Baucus, Max (D-Mont.)	SH-511 HSOB	20510-2602	224-2651	
Bennett, Robert F. (R-Utah)	SD-241 DSOB	20510-4403	224-5444	
Biden, Joseph R., Jr. (D-Del.)	SR-221 RSOB	20510-0802	224-5042	224-0139
Bingaman, Jeff (D-N.M.)	SH-110 HSOB	20510-3102	224-5521	
Bond, Christopher (Kit) (R-Mo.)	SR-293 RSOB	20510-2503	224-5721	224-8149
Boxer, Barbara (D-Calif.)	SH-112 HSOB	20510-0505	224-3553	
Bradley, Bill (D-N.J.)	SH-731 HSOB	20510-3001	224-3224	224-8567
Breaux, John B. (D-La.)	SH-516 HSOB	20510-1803	224-4623	
Brown, Hank (R-Colo.)	SH-716 HSOB	20510-0604	224-5941	
Bryan, Richard H. (D-Nev.)	SR-364 RSOB	20510-2804	224-6244	
Bumpers, Dale (D-Ark.)	SD-229 DSOB	20510-0401	224-4843	
Burns, Conrad (R-Mont.)	SD-183 DSOB	20510-2603	224-2644	224-8594
Byrd, Robert C. (D-W.Va.)	SH-311 HSOB	20510-4801	224-3954	224-8070
C				
Campbell, Ben Nighthorse (R-Colo.)	SR-380 RSOB	20510-0605	224-5852	224-1933
Chafee, John H. (R-R.I.)	SD-567 DSOB	20510-3902	224-2921	
Coats, Dan (R-Ind.)	SR-404 RSOB	20510-1403	224-5623	
Cochran, Thad (R-Miss.)	SR-326 RSOB	20510-2402	224-5054	
Cohen, William S. (R-Maine)	SH-322 HSOB	20510-1901	224-2523	
Conrad, Kent (D-N.D.)	SH-724 HSOB	20510-3403	224-2043	

**Temporary location.*

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Name	Location	ZIP+Four	Telephone	Fax Number
Coverdell, Paul (R-Ga.)	SR-200 RSOB	20510-1004	224-3643	
Craig, Larry E. (R-Idaho)	SH-313 HSOB	20510-1203	224-2752	224-2573
D				
D'Amato, Alfonse M. (R-N.Y.)	SH-520 HSOB	20510-3202	224-6542	224-5871
Daschle, Thomas A. (D-S.D.)	SH-317 HSOB	20510-4103	224-2321	224-2047
DeWine, Mike (R-Ohio)	SR-140 RSOB	20510-3503	224-2315	224-6519
Dodd, Christopher J. (D-Conn.)	SR-444 RSOB	20510-0702	224-2823	
Dole, Bob (R-Kan.)	SH-141 HSOB	20510-1601	224-6521	228-4569
Domenici, Pete V. (R-N.M.)	SH-328 HSOB	20510-3101	224-6621	
Dorgan, Byron L. (D-N.D.)	SH-713 HSOB	20510-3405	224-2551	224-1193
E				
Exon, J. James (D-Neb.)	SH-528 HSOB	20510-2702	224-4224	
F				
Faircloth, Lauch (R-N.C.)	SH-702 HSOB	20510-3305	224-3154	
Feingold, Russell D. (D-Wis.)	SH-502 HSOB	20510-4904	224-5323	
Feinstein, Dianne (D-Calif.)	SH-331 HSOB	20510-0504	224-3841	
Ford, Wendell H. (D-Ky.)	SR-173A RSOB	20510-1701	224-4343	
Frist, Bill (R-Tenn.)	SH-825 HSOB	20510-4205	224-3344	228-1264
G				
Glenn, John (D-Ohio)	SH-503 HSOB	20510-3501	224-3353	
Gorton, Slade (R-Wash.)	SH-730 HSOB	20510-4701	224-3441	224-9393
Graham, Bob (D-Fla.)	SH-524 HSOB	20510-0903	224-3041	
Gramm, Phil (R-Tex.)	SR-370 RSOB	20510-4302	224-2934	
Grams, Rod (R-Minn.)	*SD-B40 DSOB	20510-2304	224-3244	228-0956
Grassley, Charles E. (R-Iowa)	SH-135 HSOB	20510-1501	224-3744	224-6020
Gregg, Judd (R-N.H.)	SR-393 RSOB	20510-2904	224-3324	224-4952
H				
Harkin, Tom (D-Iowa)	SH-531 HSOB	20510-1502	224-3254	
Hatch, Orrin G. (R-Utah)	SR-135 RSOB	20510-4402	224-5251	224-6331
Hatfield, Mark O. (R-Ore.)	SH-711 HSOB	20510-3701	224-3753	
Heflin, Howell T. (D-Ala.)	SH-728 HSOB	20510-0101	224-4124	224-3149
Helms, Jesse (R-N.C.)	SD-403 DSOB	20510-3301	224-6342	
Hollings, Ernest F. (D-S.C.)	SR-125 RSOB	20510-4002	224-6121	
Hutchison, Kay Bailey (R-Tex.)	SH-703 HSOB	20510-4303	224-5922	224-0776
I				
Inhofe, James M. (R-Okla.)	SR-453 RSOB	20510-3603	224-4721	
Inouye, Daniel K. (D-Hawaii)	SH-722 HSOB	20510-1102	224-3934	
J				
Jeffords, James M. (R-Vt.)	SH-513 HSOB	20510-4503	224-5141	
Johnston, J. Bennett (D-La.)	SH-136 HSOB	20510-1802	224-5824	
K				
Kassebaum, Nancy Landon (R-Kan.)	SR-302 RSOB	20510-1602	224-4774	
Kempthorne, Dirk (R-Idaho)	SD-367 DSOB	20510-1204	224-6142	224-5893
Kennedy, Edward M. (D-Mass.)	SR-315 RSOB	20510-2101	224-4543	224-2417
Kerrey, J. Robert (D-Neb.)	SH-303 HSOB	20510-2704	224-6551	
Kerry, John F. (D-Mass.)	SR-421 RSOB	20510-2102	224-2742	224-8525

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Name	Location	ZIP+Four	Telephone	Fax Number
Kohl, Herb (D-Wis.)	SH-330 HSOB	20510-4903	224-5653	
Kyl, Jon (R-Ariz.)	*SR-363 RSOB	20510-0304	224-4521	224-2207
L				
Lautenberg, Frank R. (D-N.J.)	SH-506 HSOB	20510-3002	224-4744	224-9707
Leahy, Patrick J. (D-Vt.)	SR-433 RSOB	20510-4502	224-4242	
Levin, Carl (D-Mich.)	SR-459 RSOB	20510-2202	224-6221	
Lieberman, Joseph I. (D-Conn.)	SH-316 HSOB	20510-0703	224-4041	
Lott, Trent (R-Miss.)	SR-487 RSOB	20510-2403	224-6253	224-2262
Lugar, Richard G. (R-Ind.)	SH-306 HSOB	20510-1401	224-4814	
M				
Mack, Connie (R-Fla.)	SH-517 HSOB	20510-0904	224-5274	
McCain, John (R-Ariz.)	SR-111 RSOB	20510-0303	224-2235	
McConnell, Mitch (R-Ky.)	SR-120 RSOB	20510-1702	224-2541	224-2499
Mikulski, Barbara A. (D-Md.)	SH-709 HSOB	20510-2003	224-4654	224-8858
Moseley-Braun, Carol (D-Ill.)	SH-320 HSOB	20510-1303	224-2854	
Moynihan, Daniel P. (D-N.Y.)	SR-464 RSOB	20510-3201	224-4451	
Murkowski, Frank (R-Alaska)	SH-706 HSOB	20510-0202	224-6665	224-5301
Murray, Patty (D-Wash.)	SH-302 HSOB	20510-4704	224-2621	224-0238
N				
Nickles, Don (R-Okla.)	SH-133 HSOB	20510-3602	224-5754	
Nunn, Sam (D-Ga.)	SD-303 DSOB	20510-1001	224-3521	224-0072
P				
Packwood, Bob (R-Ore.)	SR-259 RSOB	20510-3702	224-5244	
Pell, Claiborne (D-R.I.)	SR-335 RSOB	20510-3901	224-4642	
Pressler, Larry (R-S.D.)	SR-243 RSOB	20510-4101	224-5842	224-1630
Pryor, David (D-Ark.)	SR-267 RSOB	20510-0402	224-2353	
R				
Reid, Harry (D-Nev.)	SH-324 HSOB	20510-2803	224-3542	224-7327
Robb, Charles S. (D-Va.)	SR-493 RSOB	20510-4603	224-4024	224-8689
Rockefeller, John D. (Jay), IV (D-W.Va.)	SH-109 HSOB	20510-4802	224-6472	
Roth, William V., Jr. (R-Del.)	SH-104 HSOB	20510-0801	224-2441	
S				
Santorum, Rick (R-Pa.)	*SD-B40 DSOB	20510-3804	224-6324	228-4991
Sarbanes, Paul S. (D-Md.)	SH-309 HSOB	20510-2002	224-4524	
Shelby, Richard C. (R-Ala.)	SH-509 HSOB	20510-0103	224-5744	224-3416
Simon, Paul (D-Ill.)	SD-462 DSOB	20510-1302	224-2152	
Simpson, Alan K. (R-Wyo.)	SD-105 DSOB	20510-5002	224-3424	224-1315
Smith, Robert C. (R-N.H.)	SD-332 DSOB	20510-2903	224-2841	
Snowe, Olympia J. (R-Maine)	*SR-174 RSOB	20510-1903	224-5344	
Specter, Arlen (R-Pa.)	SH-530 HSOB	20510-3802	224-4254	
Stevens, Ted (R-Alaska)	SH-522 HSOB	20510-0201	224-3004	
T				
Thomas, Craig (R-Wyo.)	*SD-B34 DSOB	20510-5003	224-6441	224-1724
Thompson, Fred (R-Tenn.)	*SD-506 DSOB	20510-4204	224-4944	228-3679
Thurmond, Strom (R-S.C.)	SR-217 RSOB	20510-4001	224-5972	224-1300

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Name	Location	ZIP+Four	Telephone	Fax Number
W				
Warner, John (R-Va.)	SR-225 RSOB	20510-4601	224-2023	224-6295
Wellstone, Paul David (DFL-Minn.)	SH-717 HSOB	20510-2303	224-5641	224-8438

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United States House of Representatives
104TH CONGRESS

Notes:

(1) Building abbreviations are:
CHOB = Cannon House Office Building
LHOB = Longworth House Office Building
RHOB = Rayburn House Office Building

(2) Use of ZIP+Four in mail to Representatives' offices will expedite delivery.
When writing, do not use room or building. The correct form is, e.g.:
Honorable Neil Abercrombie
United States House of Representatives
Washington, DC 20515-1101

104th Congress: Republicans: 230 Democrats: 208 Independent: 2
103rd Congress: Republicans: 177 Democrats: 261 Independent: 1 Vacant: 1

Name	Location	ZIP+Four	Telephone	Fax Number
A				
bercrombie, Neil (D-Hawaii, 1st)	1233 LHOB	20515-1101	225-2726	
ckerman, Gary L. (D-N.Y., 5th)	2243 RHOB	20515-3205	225-2601	225-1589
Allard, Wayne (R-Colo., 4th)	422 CHOB	20515-0604	225-4676	
Andrews, Robert E. (D-N.J., 1st)	2439 RHOB	20515-3001	225-6501	225-6583
Archer, Bill (R-Tex., 7th)	1236 LHOB	20515-4307	225-2571	225-4381
Armey, Dick (R-Tex., 26th)	301 CHOB	20515-4326	225-7772	225-7614
B				
Bachus, Spencer (R-Ala., 6th)	127 CHOB	20515-0106	225-4921	225-2082
Baesler, Scotty (D-Ky., 6th)	113 CHOB	20515-1706	225-4706	
Baker, Bill (R-Calif., 10th)	1724 LHOB	20515-0510	225-1880	225-2150
Baker, Richard (R-La., 6th)	434 CHOB	20515-1806	225-3901	
Baldacci, John (D-Maine, 2nd)	1740 LHOB	20515-1902	225-6306	
Ballenger, Cass (R-N.C., 10th)	2238 RHOB	20515-3310	225-2576	225-0316
Barcia, James A. (D-Mich., 5th)	1410 LHOB	20515-2205	225-8171	225-2168
Barr, Bob (R-Ga., 7th)	1607 LHOB	20515-1007	225-2931	225-2944
Barrett, Bill (R-Neb., 3rd)	1213 LHOB	20515-2703	225-6435	
Barrett, Thomas M. (D-Wis., 5th)	1224 LHOB	20515-4905	225-3571	
Bartlett, Roscoe G. (R-Md., 6th)	322 CHOB	20515-2006	225-2721	
Barton, Joe (R-Tex., 6th)	2264 RHOB	20515-4306	225-2002	225-3052
Bass, Charles F. (R-N.H., 2nd)	1728 LHOB	20515-2902	225-5206	225-2946
Bateman, Herbert H. (R-Va., 1st)	2350 RHOB	20515-4601	225-4261	225-4382
Becerra, Xavier (D-Calif., 30th)	1119 LHOB	20515-0530	225-6235	225-2202
Beilenson, Anthony C. (D-Calif., 24th)	2465 RHOB	20515-0524	225-5911	
Bentsen, Ken (D-Tex., 25th)	128 CHOB	20515-4325	225-7508	225-7492
Bereuter, Doug (R-Neb., 1st)	2348 RHOB	20515-2701	225-4806	
erman, Howard L. (D-Calif., 26th)	2231 RHOB	20515-0526	225-4695	
Bevill, Tom (D-Ala., 4th)	2302 RHOB	20515-0104	225-4876	
Bilbray, Brian (R-Calif., 49th)	1004 LHOB	20515-0549	225-2040	225-2948
Bilirakis, Michael (R-Fla., 9th)	2240 RHOB	20515-0909	225-5755	225-4085

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Name	Location	ZIP+Four	Telephone	Fax Number
Bishop, Sanford (D-Ga., 2nd)	1632 LHOB	20515-1002	225-3631	225-2203
Bliley, Thomas J., Jr. (R-Va., 7th)	2241 RHOB	20515-4607	225-2815	
Blute, Peter I. (R-Mass., 3rd)	1029 LHOB	20515-2103	225-6101	225-2217
Boehlert, Sherwood L. (R-N.Y., 23rd)	2246 RHOB	20515-3223	225-3665	225-1891
Boehner, John A. (R-Ohio, 8th)	1009 LHOB	20515-3508	225-6205	225-0704
Bonilla, Henry (R-Tex., 23rd)	1427 LHOB	20515-4323	225-4511	225-2237
Bonior, David E. (D-Mich., 10th)	2207 RHOB	20515-2210	225-2106	226-1169
Bono, Sonny (R-Calif., 44th)	512 CHOB	20515-0544	225-5330	225-2961
Borski, Robert A. (D-Pa., 3rd)	2182 RHOB	20515-3803	225-8251	225-4628
Boucher, Rick (D-Va., 9th)	2245 RHOB	20515-4609	225-3861	
Brewster, Bill (D-Okla., 3rd)	1727 LHOB	20515-3603	225-4565	225-9029
Browder, Glen (D-Ala., 3rd)	2344 RHOB	20515-0103	225-3261	225-9020
Brown, Corrine (D-Fla., 3rd)	1610 LHOB	20515-0903	225-0123	225-2256
Brown, George E., Jr. (D-Calif., 42nd)	2300 RHOB	20515-0542	225-6161	
Brown, Sherrod (D-Ohio, 13th)	1019 LHOB	20515-3513	225-3401	
Brownback, Sam (R-Kan., 2nd)	1313 LHOB	20515-1602	225-6601	225-2983
Bryant, Ed (R-Tenn., 7th)	1516 LHOB	20515-4207	225-2811	225-2989
Bryant, John (D-Tex., 5th)	2330 RHOB	20515-4305	225-2231	
Bunn, Jim (R-Ore., 5th)	1517 LHOB	20515-3705	225-5711	
Bunning, Jim (R-Ky., 4th)	2437 RHOB	20515-1704	225-3465	
Burr, Richard (R-N.C., 5th)	1431 LHOB	20515-3305	225-2071	225-2995
Burton, Dan (R-Ind., 6th)	2411 RHOB	20515-1406	225-2276	225-0016
Buyer, Steve (R-Ind., 5th)	326 CHOB	20515-1405	225-5037	

C

Callahan, Sonny (R-Ala., 1st)	2418 RHOB	20515-0101	225-4931	225-0562
Calvert, Ken (R-Calif., 43rd)	1034 LHOB	20515-0543	225-1986	
Camp, Dave (R-Mich., 4th)	137 CHOB	20515-2204	225-3561	225-9679
Canady, Charles T. (R-Fla., 12th)	1222 LHOB	20515-0912	225-1252	225-2279
Cardin, Benjamin L. (D-Md., 3rd)	104 CHOB	20515-2003	225-4016	
Castle, Michael N. (R-Del., At Large)	1207 LHOB	20515-0801	225-4165	225-2291
Chabot, Steve (R-Ohio, 1st)	1641 LHOB	20515-3501	225-2216	225-3012
Chambliss, Saxby (R-Ga., 8th)	1708 LHOB	20515-1008	225-6531	225-3013
Chapman, Jim (D-Tex., 1st)	2417 RHOB	20515-4301	225-3035	225-7265
Chenoweth, Helen (R-Idaho, 1st)	1719 LHOB	20515-1201	225-6611	225-3029
Christensen, Jon (R-Neb., 2nd)	1020 LHOB	20515-2702	225-4155	225-3032
Chrysler, Dick (R-Mich., 8th)	327 CHOB	20515-2208	225-4872	225-3034
Clay, William L. (Bill) (D-Mo., 1st)	2306 RHOB	20515-2501	225-2406	225-1725
Clayton, Eva (D-N.C., 1st)	222 CHOB	20515-3301	225-3101	
Clement, Bob (D-Tenn., 5th)	2229 RHOB	20515-4205	225-4311	
Clinger, William F., Jr. (R-Pa., 5th)	2160 RHOB	20515-3805	225-5121	225-4681
Clyburn, James E. (D-S.C., 6th)	319 CHOB	20515-4006	225-3315	225-2313
Coble, Howard (R-N.C., 6th)	403 CHOB	20515-3306	225-3065	225-8611
Coburn, Tom (R-Okla., 2nd)	511 CHOB	20515-3602	225-2701	225-3038
Coleman, Ronald D. (D-Tex., 16th)	2312 RHOB	20515-4316	225-4831	
Collins, Barbara-Rose (D-Mich., 15th)	401 CHOB	20515-2215	225-2261	225-6645
Collins, Cardiss (D-Ill., 7th)	2308 RHOB	20515-1307	225-5006	225-8396
Collins, Mac (R-Ga., 3rd)	1130 LHOB	20515-1003	225-5901	
Combest, Larry (R-Tex., 19th)	1511 LHOB	20515-4319	225-4005	
Condit, Gary A. (D-Calif., 18th)	2444 RHOB	20515-0518	225-6131	
Conyers, John, Jr. (D-Mich., 14th)	2426 RHOB	20515-2214	225-5126	225-0072
Cooley, Wes (R-Ore., 2nd)	1609 LHOB	20515-3702	225-6730	225-3046
Costello, Jerry F. (D-Ill., 12th)	2454 RHOB	20515-1312	225-5661	225-0285
Cox, Christopher (R-Calif., 47th)	2402 RHOB	20515-0547	225-5611	225-9177
Coyne, William J. (D-Pa., 14th)	2455 RHOB	20515-3814	225-2301	

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Name	Location	ZIP+Four	Telephone	Fax Number
Cramer, Bud (D-Ala., 5th)	236 CHOB	20515-0105	225-4801	
Crane, Philip M. (R-Ill., 8th)	233 CHOB	20515-1308	225-3711	
Crapo, Michael D. (R-Idaho, 2nd)	437 CHOB	20515-1202	225-5531	
Cremeans, Frank (R-Ohio, 6th)	1107 LHOB	20515-3506	225-5705	225-3054
Cubin, Barbara (R-Wyo., At Large)	1114 LHOB	20515-5001	225-2311	225-3057
Cunningham, Randy (Duke) (R-Calif., 51st)	227 CHOB	20515-0551	225-5452	
D				
Danner, Pat (D-Mo., 6th)	1323 LHOB	20515-2506	225-7041	225-8221
Davis, Tom (R-Va., 11th)	415 CHOB	20515-4611	225-1492	225-3071
Deal, Nathan (D-Ga., 9th)	1406 LHOB	20515-1009	225-5211	
DeFazio, Peter A. (D-Ore., 4th)	2134 RHOB	20515-3704	225-6416	
de la Garza, E (Kika) (D-Tex., 15th)	1401 LHOB	20515-4315	225-2531	225-2534
DeLauro, Rosa (D-Conn., 3rd)	436 CHOB	20515-0703	225-3661	
DeLay, Tom (R-Tex., 22nd)	203 CHOB	20515-4322	225-5951	
Dellums, Ronald V. (D-Calif., 9th)	2108 RHOB	20515-0509	225-2661	
Deutsch, Peter (D-Fla., 20th)	204 CHOB	20515-0920	225-7931	225-8456
Diaz-Balart, Lincoln (R-Fla., 21st)	431 CHOB	20515-0921	225-4211	225-8576
Dickey, Jay (R-Ark., 4th)	230 CHOB	20515-0404	225-3772	225-1314
Dicks, Norman D. (D-Wash., 6th)	2467 RHOB	20515-4706	225-5916	
Dingell, John D. (D-Mich., 16th)	2328 RHOB	20515-2216	225-4071	
Dixon, Julian C. (D-Calif., 32nd)	2252 RHOB	20515-0532	225-7084	225-4091
Doggett, Lloyd (D-Tex., 10th)	126 CHOB	20515-4310	225-4865	
Dooley, Calvin (D-Calif., 20th)	1227 LHOB	20515-0520	225-3341	225-9308
Doolittle, John T. (R-Calif., 4th)	1526 LHOB	20515-0504	225-2511	225-5444
Dornan, Robert K. (R-Calif., 46th)	1201 LHOB	20515-0546	225-2965	
Doyle, Mike (D-Pa., 18th)	1218 LHOB	20515-3818	225-2135	225-3084
Dreier, David (R-Calif., 28th)	411 CHOB	20515-0528	225-2305	
Duncan, John J., Jr. (R-Tenn., 2nd)	2400 RHOB	20515-4202	225-5435	225-6440
Dunn, Jennifer (R-Wash., 8th)	432 CHOB	20515-4708	225-7761	
Durbin, Richard J. (D-Ill., 20th)	2463 RHOB	20515-1320	225-5271	
E				
Edwards, Chet (D-Tex., 11th)	328 CHOB	20515-4311	225-6105	225-0350
Ehlers, Vern J. (R-Mich., 3rd)	1717 LHOB	20515-2203	225-3831	
Ehrlich, Robert L., Jr. (R-Md., 2nd)	315 CHOB	20515-2002	225-3061	225-3094
Emerson, Bill (R-Mo., 8th)	2268 RHOB	20515-2508	225-4404	225-9621
Engel, Eliot L. (D-N.Y., 17th)	1433 LHOB	20515-3217	225-2464	
English, Phil (R-Pa., 21st)	1721 LHOB	20515-3821	225-5406	
Ensign, John (R-Nev., 1st)	414 CHOB	20515-2801	225-5965	225-3119
Eshoo, Anna G. (D-Calif., 14th)	308 CHOB	20515-0514	225-8104	
Evans, Lane (D-Ill., 17th)	2335 RHOB	20515-1317	225-5905	225-5396
Everett, Terry (R-Ala., 2nd)	208 CHOB	20515-0102	225-2901	
Ewing, Thomas W. (R-Ill., 15th)	1317 LHOB	20515-1315	225-2371	225-8071
F				
Faleomavaega, Eni F.H. (D-Am. Samoa, Del.)	2422 RHOB	20515-5201	225-8577	
Farr, Sam (D-Calif., 17th)	1117 LHOB	20515-0517	225-2861	
Fattah, Chaka (D-Pa., 2nd)	1205 LHOB	20515-3802	225-4001	225-3127
Fawell, Harris W. (R-Ill., 13th)	2159 RHOB	20515-1313	225-3515	225-9420
Fazio, Vic (D-Calif., 3rd)	2113 RHOB	20515-0503	225-5716	
Fields, Cleo (D-La., 4th)	218 CHOB	20515-1804	225-8490	225-8959
Fields, Jack (R-Tex., 8th)	2228 RHOB	20515-4308	225-4901	
Filner, Bob (D-Calif., 50th)	504 CHOB	20515-0550	225-8045	
Flake, Floyd H. (D-N.Y., 6th)	1035 LHOB	20515-3206	225-3461	226-4169

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Name	Location	ZIP+Four	Telephone	Fax Number
Flanagan, Michael P. (R-Ill., 5th)	1407 LHOB	20515-1305	225-4061	225-3128
Foglietta, Thomas M. (D-Pa., 1st)	341 CHOB	20515-3801	225-4731	225-0088
[illegible]ley, Mark (R-Fla., 16th)	506 CHOB	20515-0916	225-5792	225-3132
[illegible]orbes, Michael P. (R-N.Y., 1st)	502 CHOB	20515-3201	225-3826	225-3143
Ford, Harold E. (D-Tenn., 9th)	2111 RHOB	20515-4209	225-3265	
Fowler, Tillie (R-Fla., 4th)	413 CHOB	20515-0904	225-2501	225-9318
Fox, Jon (R-Pa., 13th)	510 CHOB	20515-3813	225-6111	225-3155
Frank, Barney (D-Mass., 4th)	2210 RHOB	20515-2104	225-5931	
Franks, Bob (R-N.J., 7th)	429 CHOB	20515-3007	225-5361	225-9460
Franks, Gary A. (R-Conn., 5th)	133 CHOB	20515-0705	225-3822	225-5085
Frazer, Victor O. (Ind.-Virgin Islands, Del.)	1711 LHOB	20515-5501	225-1790	225-3171
Frelinghuysen, Rodney (R-N.J., 11th)	514 CHOB	20515-3011	225-5034	225-3186
Frisa, Dan (R-N.Y., 4th)	1529 LHOB	20515-3204	225-5516	225-3817
Frost, Martin (D-Tex., 24th)	2459 RHOB	20515-4324	225-3605	225-4951
Funderburk, David (R-N.C., 2nd)	427 CHOB	20515-3302	225-4531	225-3191
Furse, Elizabeth (D-Ore., 1st)	316 CHOB	20515-3701	225-0855	225-9497

G

Gallegly, Elton (R-Calif., 23rd)	2441 RHOB	20515-0523	225-5811	
Ganske, Greg (R-Iowa, 4th)	1108 LHOB	20515-1504	225-4426	225-3193
Gejdenson, Sam (D-Conn., 2nd)	2416 RHOB	20515-0702	225-2076	225-4977
Gekas, George W. (R-Pa., 17th)	2410 RHOB	20515-3817	225-4315	225-8440
Gephardt, Richard A. (D-Mo., 3rd)	1226 LHOB	20515-2503	225-2671	225-7452
Geren, Pete (D-Tex., 12th)	2448 RHOB	20515-4312	225-5071	225-2786
Gibbons, Sam M. (D-Fla., 11th)	2204 RHOB	20515-0911	225-3376	
Gilchrest, Wayne T. (R-Md., 1st)	332 CHOB	20515-2001	225-5311	
Gillmor, Paul E. (R-Ohio, 5th)	1203 LHOB	20515-3505	225-6405	
[illegible]lman, Benjamin A. (R-N.Y., 20th)	2449 RHOB	20515-3220	225-3776	
[illegible]ngrich, Newt (R-Ga., 6th)	2428 RHOB	20515-1006	225-4501	225-4656
Gonzalez, Henry B. (D-Tex., 20th)	2413 RHOB	20515-4320	225-3236	
Goodlatte, Robert W. (R-Va., 6th)	123 CHOB	20515-4606	225-5431	225-9681
Goodling, William F. (R-Pa., 19th)	2263 RHOB	20515-3819	225-5836	
Gordon, Bart (D-Tenn., 6th)	2201 RHOB	20515-4206	225-4231	225-6887
Goss, Porter J. (R-Fla., 14th)	108 CHOB	20515-0914	225-2536	225-6820
Graham, Lindsey (R-S.C., 3rd)	1429 LHOB	20515-4003	225-5301	225-3216
Green, Gene (D-Tex., 29th)	1024 LHOB	20515-4329	225-1688	225-9903
Greenwood, Jim (R-Pa., 8th)	430 CHOB	20515-3808	225-4276	225-9511
Gunderson, Steve (R-Wis., 3rd)	2185 RHOB	20515-4903	225-5506	
Gutierrez, Luis V. (D-Ill., 4th)	408 CHOB	20515-1304	225-8203	225-7810
Gutknecht, Gil (R-Minn., 1st)	425 CHOB	20515-2301	225-2472	

H

Hall, Ralph M. (D-Tex., 4th)	2236 RHOB	20515-4304	225-6673	225-3332
Hall, Tony P. (D-Ohio, 3rd)	1436 LHOB	20515-3503	225-6465	
Hamilton, Lee H. (D-Ind., 9th)	2314 RHOB	20515-1409	225-5315	225-1101
Hancock, Mel (R-Mo., 7th)	438 CHOB	20515-2507	225-6536	225-7700
Hansen, James V. (R-Utah, 1st)	2466 RHOB	20515-4401	225-0453	225-5857
Harman, Jane (D-Calif., 36th)	325 CHOB	20515-0536	225-8220	
Hastert, J. Dennis (R-Ill., 14th)	2453 RHOB	20515-1314	225-2976	225-0697
Hastings, Alcee L. (D-Fla., 23rd)	1039 LHOB	20515-0923	225-1313	226-0690
Hastings, Richard (Doc) (R-Wash., 4th)	1229 LHOB	20515-4704	225-5816	225-3251
Hayes, Jimmy (D-La., 7th)	2432 RHOB	20515-1807	225-2031	
Hayworth, J.D. (R-Ariz., 6th)	1023 LHOB	20515-0306	225-2190	225-3263
[illegible]ley, Joel (R-Colo., 5th)	2351 RHOB	20515-0605	225-4422	225-1942
[illegible]ner, W.G. (Bill) (D-N.C., 8th)	2470 RHOB	20515-3308	225-3715	

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Name	Location	ZIP+Four	Telephone	Fax Number
Heineman, Fred (R-N.C., 4th)	1440 LHOB	20515-3304	225-1784	225-3269
Herger, Wally (R-Calif., 2nd)	2433 RHOB	20515-0502	225-3076	
Hilleary, Van (R-Tenn., 4th)	114 CHOB	20515-4204	225-6831	225-3272
Hilliard, Earl F. (D-Ala., 7th)	1007 LHOB	20515-0107	225-2665	226-0772
Hinchey, Maurice D. (D-N.Y., 26th)	1524 LHOB	20515-3226	225-6335	
Hobson, David L. (R-Ohio, 7th)	1514 LHOB	20515-3507	225-4324	
Hoekstra, Peter (R-Mich., 2nd)	1122 LHOB	20515-2202	225-4401	
Hoke, Martin R. (R-Ohio, 10th)	212 CHOB	20515-3510	225-5871	226-0994
Holden, Tim (D-Pa., 6th)	1421 LHOB	20515-3806	225-5546	226-0996
Horn, Steve (R-Calif., 38th)	129 CHOB	20515-0538	225-6676	226-1012
Hostettler, John N. (R-Ind., 8th)	1404 LHOB	20515-1408	225-4636	225-3284
Houghton, Amo (R-N.Y., 31st)	1110 LHOB	20515-3231	225-3161	225-5574
Hoyer, Steny H. (D-Md., 5th)	1705 LHOB	20515-2005	225-4131	
Hunter, Duncan L. (R-Calif., 52nd)	2265 RHOB	20515-0552	225-5672	225-0235
Hutchinson, Tim (R-Ark., 3rd)	1005 LHOB	20515-0403	225-4301	
Hyde, Henry J. (R-Ill., 6th)	2110 RHOB	20515-1306	225-4561	
I				
Inglis, Bob (R-S.C., 4th)	1237 LHOB	20515-4004	225-6030	226-1177
Istook, Ernest Jim (R-Okla., 5th)	119 CHOB	20515-3605	225-2132	
J				
Jacobs, Andrew, Jr. (D-Ind., 10th)	2313 RHOB	20515-1410	225-4011	
Jefferson, William J. (D-La., 2nd)	240 CHOB	20515-1802	225-6636	
Johnson, Eddie Bernice (D-Tex., 30th)	1123 LHOB	20515-4330	225-8885	
Johnson, Nancy L. (R-Conn., 6th)	343 CHOB	20515-0706	225-4476	225-4488
Johnson, Sam (R-Tex., 3rd)	1030 LHOB	20515-4303	225-4201	225-1485
Johnson, Tim (D-S.D., At Large)	2438 RHOB	20515-4101	225-2801	225-2427
Johnston, Harry (D-Fla., 19th)	2458 RHOB	20515-0919	225-3001	225-8791
Jones, Walter B., Jr. (R-N.C., 3rd)	214 CHOB	20515-3303	225-3415	225-3286
K				
Kanjorski, Paul E. (D-Pa., 11th)	2429 RHOB	20515-3811	225-6511	
Kaptur, Marcy (D-Ohio, 9th)	2104 RHOB	20515-3509	225-4146	225-7711
Kasich, John R. (R-Ohio, 12th)	1131 LHOB	20515-3512	225-5355	
Kelly, Sue (R-N.Y., 19th)	1037 LHOB	20515-3219	225-5441	225-3289
Kennedy, Joseph P., II (D-Mass., 8th)	2242 RHOB	20515-2108	225-5111	225-9322
Kennedy, Patrick (D-R.I., 1st)	1505 LHOB	20515-3901	225-4911	225-3290
Kennelly, Barbara B. (D-Conn., 1st)	201 CHOB	20515-0701	225-2265	225-1031
Kildee, Dale E. (D-Mich., 9th)	2187 RHOB	20515-2209	225-3611	
Kim, Jay (R-Calif., 41st)	435 CHOB	20515-0541	225-3201	226-1485
King, Peter T. (R-N.Y., 3rd)	224 CHOB	20515-3203	225-7896	226-2279
Kingston, Jack (R-Ga., 1st)	1507 LHOB	20515-1001	225-5831	226-2269
Kleczka, Gerald D. (D-Wis., 4th)	2301 RHOB	20515-4904	225-4572	225-8135
Klink, Ron (D-Pa., 4th)	125 CHOB	20515-3804	225-2565	
Klug, Scott (R-Wis., 2nd)	1113 LHOB	20515-4902	225-2906	
Knollenberg, Joe (R-Mich., 11th)	1221 LHOB	20515-2211	225-5802	226-2356
Kolbe, Jim (R-Ariz., 5th)	205 CHOB	20515-0305	225-2542	225-0378
L				
LaFalce, John J. (D-N.Y., 29th)	2310 RHOB	20515-3229	225-3231	225-8693
LaHood, Ray (R-Ill., 18th)	329 CHOB	20515-1318	225-6201	225-9249
Lantos, Tom (D-Calif., 12th)	2217 RHOB	20515-0512	225-3531	
Largent, Steve (R-Okla., 1st)	410 CHOB	20515-3601	225-2211	225-9187
Latham, Tom (R-Iowa, 5th)	516 CHOB	20515-1505	225-5476	225-3301

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Name	Location	ZIP+Four	Telephone	Fax Number
LaTourette, Steve (R-Ohio, 19th)	1508 LHOB	20515-3519	225-5731	
Laughlin, Greg (D-Tex., 14th)	442 CHOB	20515-4314	225-2831	
Lazio, Rick A. (R-N.Y., 2nd)	314 CHOB	20515-3202	225-3335	225-4669
Leach, Jim (R-Iowa, 1st)	2186 RHOB	20515-1501	225-6576	226-1278
Lee, Sheila Jackson (D-Tex., 18th)	1520 LHOB	20515-4318	225-3816	225-3317
Levin, Sander M. (D-Mich., 12th)	2230 RHOB	20515-2212	225-4961	
Lewis, Jerry (R-Calif., 40th)	2112 RHOB	20515-0540	225-5861	225-6498
Lewis, John (D-Ga., 5th)	229 CHOB	20515-1005	225-3801	225-0351
Lewis, Ron (R-Ky., 2nd)	412 CHOB	20515-1702	225-3501	
Lightfoot, Jim (R-Iowa, 3rd)	2161 RHOB	20515-1503	225-3806	225-6973
Lincoln, Blanche Lambert (D-Ark., 1st)	1204 LHOB	20515-0401	225-4076	
Linder, John (R-Ga., 4th)	1318 LHOB	20515-1004	225-4272	
Lipinski, William O. (D-Ill., 3rd)	1501 LHOB	20515-1303	225-5701	
Livingston, Bob (R-La., 1st)	2406 RHOB	20515-1801	225-3015	225-0739
LoBiondo, Frank A. (R-N.J., 2nd)	513 CHOB	20515-3002	225-6572	225-3318
Lofgren, Zoe (D-Calif., 16th)	118 CHOB	20515-0516	225-3072	225-3336
Longley, James B., Jr. (R-Maine, 1st)	226 CHOB	20515-1901	225-6116	225-3353
Lowey, Nita M. (D-N.Y., 18th)	2421 RHOB	20515-3218	225-6506	225-0546
Lucas, Frank D. (R-Okla., 6th)	107 CHOB	20515-3606	225-5565	225-8698
Luther, Bill (DFL-Minn., 6th)	1419 LHOB	20515-2306	225-2271	225-3368
M				
Maloney, Carolyn B. (D-N.Y., 14th)	1504 LHOB	20515-3214	225-7944	225-4709
Manton, Thomas J. (D-N.Y., 7th)	2235 RHOB	20515-3207	225-3965	
Manzullo, Donald (R-Ill., 16th)	426 CHOB	20515-1316	225-5676	
Markey, Edward J. (D-Mass., 7th)	2133 RHOB	20515-2107	225-2836	
Martinez, Matthew G. (D-Calif., 31st)	2239 RHOB	20515-0531	225-5464	225-5467
Martini, William J. (R-N.J., 8th)	1513 LHOB	20515-3008	225-5751	225-3372
Mascara, Frank (D-Pa., 20th)	1531 LHOB	20515-3820	225-4665	225-3377
Matsui, Robert T. (D-Calif., 5th)	2311 RHOB	20515-0505	225-7163	225-0566
McCarthy, Karen (D-Mo., 5th)	1232 LHOB	20515-2505	225-4535	225-4403
McCollum, Bill (R-Fla., 8th)	2266 RHOB	20515-0908	225-2176	
McCrery, Jim (R-La., 5th)	225 CHOB	20515-1805	225-2777	
McDade, Joseph M. (R-Pa., 10th)	2107 RHOB	20515-3810	225-3731	225-9594
McDermott, Jim (D-Wash., 7th)	2349 RHOB	20515-4707	225-3106	
McHale, Paul (D-Pa., 15th)	217 CHOB	20515-3815	225-6411	225-5320
McHugh, John M. (R-N.Y., 24th)	416 CHOB	20515-3224	225-4611	
McInnis, Scott (R-Colo., 3rd)	215 CHOB	20515-0603	225-4761	226-0622
McIntosh, David (R-Ind., 2nd)	1208 LHOB	20515-1402	225-3021	225-3382
McKeon, Howard P. (Buck) (R-Calif., 25th)	307 CHOB	20515-0525	225-1956	226-0683
McKinney, Cynthia (D-Ga., 11th)	124 CHOB	20515-1011	225-1605	226-0691
McNulty, Michael R. (D-N.Y., 21st)	2442 RHOB	20515-3221	225-5076	225-5077
Meehan, Martin T. (D-Mass., 5th)	318 CHOB	20515-2105	225-3411	226-0771
Meek, Carrie (D-Fla., 17th)	404 CHOB	20515-0917	225-4506	226-0777
Menendez, Robert (D-N.J., 13th)	1730 LHOB	20515-3013	225-7919	226-0792
Metcalf, Jack (R-Wash., 2nd)	507 CHOB	20515-4702	225-2605	225-4420
Meyers, Jan (R-Kan., 3rd)	2303 RHOB	20515-1603	225-2865	225-0554
Mfume, Kweisi (D-Md., 7th)	2419 RHOB	20515-2007	225-4741	
Mica, John L. (R-Fla., 7th)	336 CHOB	20515-0907	225-4035	226-0821
Miller, Dan (R-Fla., 13th)	117 CHOB	20515-0913	225-5015	226-0828
Miller, George (D-Calif., 7th)	2205 RHOB	20515-0507	225-2095	
Mineta, Norman Y. (D-Calif., 15th)	2221 RHOB	20515-0515	225-2631	
Minge, David (DFL-Minn., 2nd)	1415 LHOB	20515-2302	225-2331	
Mink, Patsy T. (D-Hawaii, 2nd)	2135 RHOB	20515-1102	225-4906	225-4987
Moakley, John Joseph (D-Mass., 9th)	235 CHOB	20515-2109	225-8273	225-3984

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Name	Location	ZIP+Four	Telephone	Fax Number
Molinari, Susan (R-N.Y., 13th)	2435 RHOB	20515-3213	225-3371	226-1272
Mollohan, Alan B. (D-W.Va., 1st)	2427 RHOB	20515-4801	225-4172	225-7564
Montgomery, G.V. (Sonny) (D-Miss., 3rd)	2184 RHOB	20515-2403	225-5031	225-3375
Moorhead, Carlos J. (R-Calif., 27th)	2346 RHOB	20515-0527	225-4176	226-1279
Moran, James P. (D-Va., 8th)	405 CHOB	20515-4608	225-4376	225-0017
Morella, Constance A. (R-Md., 8th)	106 CHOB	20515-2008	225-5341	225-1389
Murtha, John P. (D-Pa., 12th)	2423 RHOB	20515-3812	225-2065	
Myers, John T. (R-Ind., 7th)	2372 RHOB	20515-1407	225-5805	225-1649
Myrick, Sue (R-N.C., 9th)	509 CHOB	20515-3309	225-1976	225-3389
N				
Nadler, Jerrold (D-N.Y., 8th)	109 CHOB	20515-3208	225-5635	225-6923
Neal, Richard E. (D-Mass., 2nd)	2431 RHOB	20515-2102	225-5601	225-8112
Nethercutt, George R., Jr. (R-Wash., 5th)	1527 LHOB	20515-4705	225-2006	225-3392
Neumann, Mark W. (R-Wis., 1st)	1725 LHOB	20515-4901	225-3031	225-3393
Ney, Bob (R-Ohio, 18th)	1605 LHOB	20515-3518	225-6265	225-3394
Norton, Eleanor Holmes (D-D.C., Del.)	1424 LHOB	20515-5101	225-8050	225-3002
Norwood, Charlie (R-Ga., 10th)	1707 LHOB	20515-1010	225-4101	225-3397
Nussle, Jim (R-Iowa, 2nd)	303 CHOB	20515-1502	225-2911	225-9129
O				
Oberstar, James L. (DFL-Minn., 8th)	2366 RHOB	20515-2308	225-6211	225-0699
Obey, David (D-Wis., 7th)	2462 RHOB	20515-4907	225-3365	
Olver, John W. (D-Mass., 1st)	1027 LHOB	20515-2101	225-5335	226-1224
Ortiz, Solomon P. (D-Tex., 27th)	2136 RHOB	20515-4327	225-7742	226-1134
Orton, Bill (D-Utah, 3rd)	440 CHOB	20515-4403	225-7751	
Owens, Major R. (D-N.Y., 11th)	2305 RHOB	20515-3211	225-6231	226-0112
Oxley, Michael G. (R-Ohio, 4th)	2233 RHOB	20515-3504	225-2676	
P				
Packard, Ron (R-Calif., 48th)	2162 RHOB	20515-0548	225-3906	225-0134
Pallone, Frank, Jr. (D-N.J., 6th)	420 CHOB	20515-3006	225-4671	225-9665
Parker, Mike (D-Miss., 4th)	2445 RHOB	20515-2404	225-5865	225-5886
Pastor, Ed (D-Ariz., 2nd)	223 CHOB	20515-0302	225-4065	
Paxon, Bill (R-N.Y., 27th)	2436 RHOB	20515-3227	225-5265	225-5910
Payne, Donald M. (D-N.J., 10th)	2244 RHOB	20515-3010	225-3436	225-4160
Payne, L.F. (D-Va., 5th)	2412 RHOB	20515-4605	225-4711	226-1147
Pelosi, Nancy (D-Calif., 8th)	2457 RHOB	20515-0508	225-4965	225-8259
Peterson, Collin C. (DFL-Minn., 7th)	1314 LHOB	20515-2307	225-2165	
Peterson, Douglas (Pete) (D-Fla., 2nd)	306 CHOB	20515-0902	225-5235	225-1586
Petri, Thomas E. (R-Wis., 6th)	2262 RHOB	20515-4906	225-2476	
Pickett, Owen B. (D-Va., 2nd)	2430 RHOB	20515-4602	225-4215	
Pombo, Richard W. (R-Calif., 11th)	1519 LHOB	20515-0511	225-1947	
Pomeroy, Earl (D-N.D., At Large)	1533 LHOB	20515-3401	225-2611	226-0893
Porter, John Edward (R-Ill., 10th)	2373 RHOB	20515-1310	225-4835	
Portman, Rob (R-Ohio, 2nd)	238 CHOB	20515-3502	225-3164	
Poshard, Glenn (D-Ill., 19th)	2334 RHOB	20515-1319	225-5201	225-1541
Pryce, Deborah (R-Ohio, 15th)	221 CHOB	20515-3515	225-2015	226-0986
Q				
Quillen, James H. (R-Tenn., 1st)	102 CHOB	20515-4201	225-6356	225-7812
Quinn, Jack (R-N.Y., 30th)	331 CHOB	20515-3230	225-3306	
R				
Radanovich, George (R-Calif., 19th)	313 CHOB	20515-0519	225-4540	225-3402

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Name	Location	ZIP+Four	Telephone	Fax Number
Rahall, Nick (D-W.Va., 3rd)	2269 RHOB	20515-4803	225-3452	225-9061
Ramstad, Jim (R-Minn., 3rd)	103 CHOB	20515-2303	225-2871	225-6351
Rangel, Charles B. (D-N.Y., 15th)	2354 RHOB	20515-3215	225-4365	225-0816
Reed, Jack (D-R.I., 2nd)	1510 LHOB	20515-3902	225-2735	
Regula, Ralph (R-Ohio, 16th)	2309 RHOB	20515-3516	225-3876	225-3059
Reynolds, Mel (D-Ill., 2nd)	312 CHOB	20515-1302	225-0773	
Richardson, Bill (D-N.M., 3rd)	2209 RHOB	20515-3103	225-6190	
Riggs, Frank (R-Calif., 1st)	1714 LHOB	20515-0501	225-3311	225-3403
Rivers, Lynn (D-Mich., 13th)	1116 LHOB	20515-2213	225-6261	225-3404
Roberts, Pat (R-Kan., 1st)	1126 LHOB	20515-1601	225-2715	225-5375
Roemer, Tim (D-Ind., 3rd)	407 CHOB	20515-1403	225-3915	
Rogers, Harold (R-Ky., 5th)	2468 RHOB	20515-1705	225-4601	225-0940
Rohrabacher, Dana (R-Calif., 45th)	2338 RHOB	20515-0545	225-2415	225-0145
Romero-Barcelo, Carlos (D-P.R., Res. Comm'r.)	428 CHOB	20515-5401	225-2615	225-2154
Ros-Lehtinen, Ileana (R-Fla., 18th)	2440 RHOB	20515-0918	225-3931	
Rose, Charlie (D-N.C., 7th)	242 CHOB	20515-3307	225-2731	225-0345
Roth, Toby (R-Wis., 8th)	2234 RHOB	20515-4908	225-5665	225-0087
Roukema, Marge (R-N.J., 5th)	2469 RHOB	20515-3005	225-4465	225-9048
Roybal-Allard, Lucille (D-Calif., 33rd)	324 CHOB	20515-0533	225-1766	
Royce, Ed (R-Calif., 39th)	1133 LHOB	20515-0539	225-4111	226-0335
Rush, Bobby L. (D-Ill., 1st)	131 CHOB	20515-1301	225-4372	226-0333
S				
Sabo, Martin Olav (DFL-Minn., 5th)	2336 RHOB	20515-2305	225-4755	
Salmon, Matt (R-Ariz., 1st)	115 CHOB	20515-0301	225-2635	225-3405
Sanders, Bernard (Ind.-Vt., At Large)	213 CHOB	20515-4501	225-4115	225-6790
Sanford, Mark (R-S.C., 1st)	1223 LHOB	20515-4001	225-3176	
Sawyer, Thomas C. (D-Ohio, 14th)	1414 LHOB	20515-3514	225-5231	
Saxton, H. James (R-N.J., 3rd)	339 CHOB	20515-3003	225-4765	225-0778
Scarborough, Joe (R-Fla., 1st)	1523 LHOB	20515-0901	225-4136	225-3414
Schaefer, Dan (R-Colo., 6th)	2353 RHOB	20515-0606	225-7882	225-7885
Schiff, Steven H. (R-N.M., 1st)	2404 RHOB	20515-3101	225-6316	225-4975
Schroeder, Patricia (D-Colo., 1st)	2307 RHOB	20515-0601	225-4431	225-5842
Schumer, Charles E. (D-N.Y., 9th)	2211 RHOB	20515-3209	225-6616	225-4183
Scott, Robert C. (D-Va., 3rd)	501 CHOB	20515-4603	225-8351	225-8354
Seastrand, Andrea (R-Calif., 22nd)	1216 LHOB	20515-0522	225-3601	225-3426
Sensenbrenner, Jim, Jr. (R-Wis., 9th)	2332 RHOB	20515-4909	225-5101	
Serrano, José E. (D-N.Y., 16th)	2342 RHOB	20515-3216	225-4361	225-6001
Shadegg, John (R-Ariz., 4th)	503 CHOB	20515-0304	225-3361	225-3462
Shaw, E. Clay, Jr. (R-Fla., 22nd)	2267 RHOB	20515-0922	225-3026	225-8398
Shays, Christopher (R-Conn., 4th)	1502 LHOB	20515-0704	225-5541	225-9629
Shuster, Bud (R-Pa., 9th)	2188 RHOB	20515-3809	225-2431	
Sisisky, Norman (D-Va., 4th)	2371 RHOB	20515-4604	225-6365	226-1170
Skaggs, David E. (D-Colo., 2nd)	1124 LHOB	20515-0602	225-2161	
Skeen, Joe (R-N.M., 2nd)	2367 RHOB	20515-3102	225-2365	225-9599
Skelton, Ike (D-Mo., 4th)	2227 RHOB	20515-2504	225-2876	
Slaughter, Louise M. (D-N.Y., 28th)	2347 RHOB	20515-3228	225-3615	225-7822
Smith, Christopher H. (R-N.J., 4th)	2370 RHOB	20515-3004	225-3765	
Smith, Lamar (R-Tex., 21st)	2443 RHOB	20515-4321	225-4236	
Smith, Linda (R-Wash., 3rd)	1217 LHOB	20515-4703	225-3536	225-3478
Smith, Nick (R-Mich., 7th)	1530 LHOB	20515-2207	225-6276	
Solomon, Gerald B. (R-N.Y., 22nd)	2206 RHOB	20515-3222	225-5614	225-6234
Souder, Mark (R-Ind., 4th)	508 CHOB	20515-1404	225-4436	225-3497
Spence, Floyd (R-S.C., 2nd)	2405 RHOB	20515-4002	225-2452	225-2455
Spratt, John M., Jr. (D-S.C., 5th)	1536 LHOB	20515-4005	225-5501	225-0464

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Name	Location	ZIP+Four	Telephone	Fax Number
Stark, Pete (D-Calif., 13th)	239 CHOB	20515-0513	225-5065	
Stearns, Cliff (R-Fla., 6th)	2352 RHOB	20515-0906	225-5744	225-3973
Stenholm, Charles W. (D-Tex., 17th)	1211 LHOB	20515-4317	225-6605	225-2234
Stockman, Steve (R-Tex., 9th)	417 CHOB	20515-4309	225-6565	225-3483
Stokes, Louis (D-Ohio, 11th)	2365 RHOB	20515-3511	225-7032	225-1339
Studds, Gerry E. (D-Mass., 10th)	237 CHOB	20515-2110	225-3111	225-2212
Stump, Bob (R-Ariz., 3rd)	211 CHOB	20515-0303	225-4576	225-6328
Stupak, Bart (D-Mich., 1st)	317 CHOB	20515-2201	225-4735	225-4744
T				
Talent, James M. (R-Mo., 2nd)	1022 LHOB	20515-2502	225-2561	225-2563
Tanner, John (D-Tenn., 8th)	1127 LHOB	20515-4208	225-4714	225-1765
Tate, Randy (R-Wash., 9th)	1118 LHOB	20515-4709	225-8901	225-3484
Tauzin, W.J. (Billy) (D-La., 3rd)	2183 RHOB	20515-1803	225-4031	
Taylor, Charles H. (R-N.C., 11th)	231 CHOB	20515-3311	225-6401	225-0519
Taylor, Gene (D-Miss., 5th)	2447 RHOB	20515-2405	225-5772	
Tejeda, Frank (D-Tex., 28th)	323 CHOB	20515-4328	225-1640	
Thomas, William M. (R-Calif., 21st)	2208 RHOB	20515-0521	225-2915	
Thompson, Bennie G. (D-Miss., 2nd)	1408 LHOB	20515-2402	225-5876	225-5898
Thornberry, William M. (Mac) (R-Tex., 13th)	1535 LHOB	20515-4313	225-3706	
Thornton, Ray (D-Ark., 2nd)	1214 LHOB	20515-0402	225-2506	225-9273
Thurman, Karen L. (D-Fla., 5th)	130 CHOB	20515-0905	225-1002	226-0329
Tiahrt, Todd (R-Kan., 4th)	1319 LHOB	20515-1604	225-6216	225-3489
Torkildsen, Peter G. (R-Mass., 6th)	120 CHOB	20515-2106	225-8020	225-8037
Torres, Esteban Edward (D-Calif., 34th)	2368 RHOB	20515-0534	225-5256	
Torricelli, Robert G. (D-N.J., 9th)	1026 LHOB	20515-3009	225-5061	225-0843
Towns, Edolphus (D-N.Y., 10th)	2232 RHOB	20515-3210	225-5936	225-1018
Traficant, James A., Jr. (D-Ohio, 17th)	2446 RHOB	20515-3517	225-5261	225-3719
Tucker, Walter R., III (D-Calif., 37th)	419 CHOB	20515-0537	225-7924	225-7926
U				
Underwood, Robert A. (D-Guam, Del.)	424 CHOB	20515-5301	225-1188	226-0341
Upton, Fred (R-Mich., 6th)	2333 RHOB	20515-2206	225-3761	225-4986
V				
Velázquez, Nydia M. (D-N.Y., 12th)	132 CHOB	20515-3212	225-2361	226-0327
Vento, Bruce F. (DFL-Minn., 4th)	2304 RHOB	20515-2304	225-6631	225-1968
Visclosky, Peter J. (D-Ind., 1st)	2464 RHOB	20515-1401	225-2461	225-2493
Volkmer, Harold L. (D-Mo., 9th)	2409 RHOB	20515-2509	225-2956	225-7834
Vucanovich, Barbara (R-Nev., 2nd)	2202 RHOB	20515-2802	225-6155	225-2319
W				
Waldholtz, Enid (R-Utah, 2nd)	515 CHOB	20515-4402	225-3011	225-3491
Walker, Robert S. (R-Pa., 16th)	2369 RHOB	20515-3816	225-2411	
Walsh, James T. (R-N.Y., 25th)	1330 LHOB	20515-3225	225-3701	225-4042
Wamp, Zach (R-Tenn., 3rd)	423 CHOB	20515-4203	225-3271	225-3494
Ward, Mike (D-Ky., 3rd)	1032 LHOB	20515-1703	225-5401	225-3511
Waters, Maxine (D-Calif., 35th)	330 CHOB	20515-0535	225-2201	225-7854
Watt, Melvin L. (D-N.C., 12th)	1230 LHOB	20515-3312	225-1510	225-1512
Watts, J.C., Jr. (R-Okla., 4th)	1713 LHOB	20515-3604	225-6165	
Waxman, Henry A. (D-Calif., 29th)	2408 RHOB	20515-0529	225-3976	225-4099
Weldon, Curt (R-Pa., 7th)	2452 RHOB	20515-3807	225-2011	225-8137
Weldon, Dave (R-Fla., 15th)	216 CHOB	20515-0915	225-3671	
Weller, Jerry (R-Ill., 11th)	1710 LHOB	20515-1311	225-3635	225-3521
White, Rick (R-Wash., 1st)	116 CHOB	20515-4701	225-6311	225-3524

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Name	Location	ZIP+Four	Telephone	Fax Number
Whitfield, Ed (R-Ky., 1st)	1541 LHOB	20515-1701	225-3115	225-3547
Wicker, Roger F. (R-Miss., 1st)	206 CHOB	20515-2401	225-4306	225-3549
Williams, Pat (D-Mont., At Large)	2329 RHOB	20515-2601	225-3211	
Wilson, Charles (D-Tex., 2nd)	2256 RHOB	20515-4302	225-2401	225-1764
Wise, Bob (D-W.Va., 2nd)	2434 RHOB	20515-4802	225-2711	225-7856
Wolf, Frank R. (R-Va., 10th)	241 CHOB	20515-4610	225-5136	225-0437
Woolsey, Lynn C. (D-Calif., 6th)	439 CHOB	20515-0506	225-5161	
Wyden, Ron (D-Ore., 3rd)	1111 LHOB	20515-3703	225-4811	
Wynn, Albert R. (D-Md., 4th)	418 CHOB	20515-2004	225-8699	225-8714
Y				
Yates, Sidney R. (D-Ill., 9th)	2109 RHOB	20515-1309	225-2111	225-3493
Young, C.W. Bill (R-Fla., 10th)	2407 RHOB	20515-0910	225-5961	
Young, Don (R-Alaska, At Large)	2331 RHOB	20515-0201	225-5765	225-0425
Z				
Zeliff, Bill (R-N.H., 1st)	1210 LHOB	20515-2901	225-5456	225-4370
Zimmer, Dick (R-N.J., 12th)	228 CHOB	20515-3012	225-5801	225-9181

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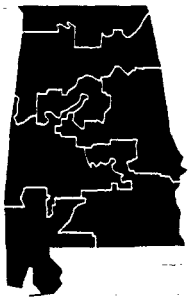
ALABAMA

Number of House Seats:
3 Republicans
4 Democrats



GOVERNOR

FOB JAMES, JR.

Rep. of Magnolia Springs; born September 15, 1934 in Lanett, AL; BS Auburn University; businessman; CEO, Coastal Erosion Control, Inc.; CEO, Escambia County Environment Corp.; governor, 1979-82; re-elected governor in 1994, term ends 1998.

SENATORS

HOWELL T. HEFLIN ..... (202) 224-4124

Dem. of Tuscumbia; senior senator; born June 19, 1921 in Poulan, GA; JD Univ. of Ala., 1948; chief justice, Ala. Supreme Court 1971-77; elected to the U.S. Senate in 1978, 3rd term ends in 1997.

RICHARD C. SHELBY ..... (202) 224-5744

Rep. of Tuscaloosa; junior senator; born May 6, 1934 in Birmingham; LLB Univ. of Ala. Law School, 1963; Tuscaloosa City Prosecutor 1963-71; member, State Senate 1970-78; member of U.S. House 1979-86; elected to the U.S. Senate in 1986, 2nd term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/HERBERT L. "SONNY" CALLAHAN ..... (202) 225-4931

Rep. of Mobile; born Sept. 11, 1932 in Mobile; attended Univ. of Ala., Mobile; business executive; member, State House 1970-78, State Senate 1978-82; first elected to Congress in 1984—6th term.

2nd/TERRY EVERETT ..... (202) 225-2901

Rep. of Enterprise; born Feb. 15, 1937 in Dothan; newspaper executive; served 4 years in Air Force; first elected to Congress in 1992—2nd term.

3rd/GLEN BROWDER ..... (202) 225-3261

Dem. of Jacksonville; born Jan. 15, 1943 in Sumter, SC; PhD Emory Univ., 1971; college professor; member, State House 1983-87; secretary of state 1987-89; first elected to Congress in a special election in 1989—4th term.

4th/TOM BEVILL ..... (202) 225-4876

Dem. of Jasper; born March 27, 1921 in Townley; LLB Univ. of Ala., 1948; practiced law 18 years in Jasper; first elected to Congress in 1966—15th term.

5th/ROBERT E. "BUD" CRAMER, JR. ..... (202) 225-4801

Dem. of Madison County; born Aug. 22, 1947 in Huntsville; JD, Univ. of Ala. School of Law, 1972; instructor, Univ. of Ala. School of Law, 1972-73; asst. dist atty., 1973-75; attorney, 1975-80; dist. atty, 1981-90; first elected to Congress in 1990 —3rd term.

6th/SPENCER BACHUS ..... (202) 225-4921

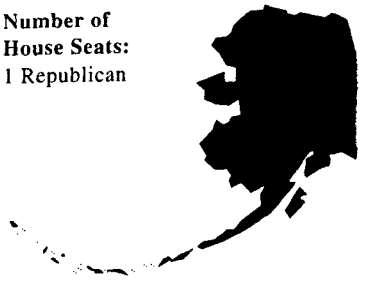
Rep. of Vestavia; born Dec. 28, 1947 in Rocky Ridge; JD Univ. of Alabama Law School, 1972; attorney; member, State Senate 1982-83, State House 1983-86, State Board of Education 1987-91; first elected to Congress in 1992—2nd term.

7th/EARL HILLIARD ..... (2

Dem. of Birmingham
1942 in Birmingham;
Univ., 1970; JD Howa
attorney; member, Sta
80, State Senate 1980-
to Congress in 1992

ALASKA

Number of House Seats:
1 Republican



GOVERNOR

TONY KNOWLES

Dem. of Anchorage;
1, 1943 in Tulsa,
University, 1968; U
65; roughneck; bus
ber Anchorage Ass
mayor, Anchorage
Pacific Fisheries Man
1988-89; candidate for
elected governor in
1998.

SENATORS

TED STEVENS ..... (2

Rep. of Gerwood;
born Nov. 18, 1923 i
IN; LLB Harvard Law
U.S. Atty., Fairbanks,
56; member, Alaska
68; appointed to the
1968, 5th term ends

VERETT ..... (202) 225-2901

Rep. of Enterprise; born Feb. 15, 1937 in Dothan; newspaper executive; served 4 years in Air Force; first elected to Congress in 1992—2nd term.

OWDER ..... (202) 225-3261

Dem. of Jacksonville; born Jan. 15, 1943 in Sumter, SC; PhD Emory Univ., 1971; college professor; member, State House 1983-87; secretary of state 1987-89; first elected to Congress in a special election in 1[illegible]h term.

LL ..... (202) 225-4876

Dem. of Jasper; born March 27, 1921 in Townley; LLB Univ. of Ala., 1948; practiced law 18 years in Jasper; first elected to Congress in 1966—15th term.

. "BUD"

..... (202) 225-4801

Dem. of Madison County; born Aug. 22, 1947 in Huntsville; JD, Univ. of Ala. School of Law, 1972; instructor, Univ. of Ala. School of Law, 1972-73; asst. dist atty., 1973-75; attorney, 1975-80; dist. atty, 1981-90; first elected to Congress in 1990 —3rd term.

ACHUS ..... (202) 225-4921

Rep. of Vestavia; born Dec. 28, 1947 in Rocky Ridge; JD Univ. of Alabama Law School, 1972; attorney; member, State Senate 1982-83, State House 1983-86, State Board of E[illegible]tion 1987-91; first elected o[illegible]ss in 1992—2nd term.

7th/EARL HILLIARD ..... (202) 225-2665

Dem. of Birmingham; born April 9, 1942 in Birmingham; MBA Atlanta Univ., 1970; JD Howard Univ., 1967; attorney; member, State House 1974-80, State Senate 1980-92; first elected to Congress in 1992—2nd term.

ALASKA

Number of House Seats:
1 Republican

GOVERNOR

TONY KNOWLES

Dem. of Anchorage; born January 1, 1943 in Tulsa, OK; BA, Yale University, 1968; U.S. Army 1962-65; roughneck; businessman; member Anchorage Assembly 1975-79; mayor, Anchorage 1981-87; North Pacific Fisheries Management Council 1988-89; candidate for governor 1990; elected governor in 1994, term ends 1998.

SENATORS

TED STEVENS ..... (202) 224-3004

Rep. of Gerwood; senior senator; born Nov. 18, 1923 in Indianapolis, IN; LLB Harvard Law School, 1950; U.S. Atty., Fairbanks, Alaska, 1953-56; member, Alaska House 1964-68; appointed to the U.S. Senate in 1968, 5th term ends in 1997.

FRANK H. MURKOWSKI ..... (202) 224-6665

Rep. of Fairbanks; junior senator; born March 28, 1933 in Seattle, WA; BA Seattle Univ., 1955; banker; commissioner of Economic Development, State of Alaska 1967-70; president, Alaska National Bank 1971-80; elected to the U.S. Senate in 1980; 3rd term ends in 1999.

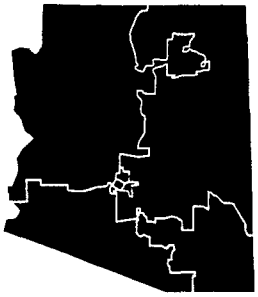
DISTRICT/REPRESENTATIVE

At Large/DON YOUNG ..... (202) 225-5765

Rep. of Fort Yukon; born June 9, 1933 in Meridian, CA; BA Chico State College, CA, 1958; member, Fort Yukon City Council 6 years; member, State House 1966-70, State Senate 1970-73; first elected to Congress in a 1973 special election—12th term.

ARIZONA

Number of House Seats:
5 Republicans
1 Democrat



GOVERNOR

FIFE SYMINGTON

Rep.; born Aug 12, 1945 in New York City; U.S. Air Force, 1968-72; commercial & industrial developer, 1972-76; pres. & CEO, Symington Co., 1976-89; CEO, Symington Co., 1989-91; elected governor in 1991; re-elected in 1994, term ends 1999.

SENATORS

JOHN McCAIN ..... **(202) 224-2235**

Rep. of Phoenix; senior senator; born Aug. 29, 1936 in Panama Canal Zone; graduated U.S. Naval Academy, 1958; USN 1958-81; prisoner of war 1967-73; National War College 1974; Navy Senate liaison officer 1977-81; member of U.S. House 1983-86; elected to the U.S. Senate in 1986, 2nd term ends in 1999.

JON L. KYL ..... **(202) 224-4521**

Rep. of Phoenix; junior senator; born Apr. 25, 1942 in Oakland, NE; LLB University of Ariz., 1966; attorney 1966-86; member of U.S. House 1986-95; elected to the U.S. Senate in 1994, 1st term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/MATT SALMON ..... **(202) 225-2635**

Rep. of Mesa; born Jan. 21, 1958 in Salt Lake City, UT; MA Brigham Young University; Business & Community Affairs Manager, US West Communications; State Senator 1990-94; Assistant Majority Leader and Chairman of the Rules Committee; elected to Congress in 1994—1st term.

2nd/ED PASTOR ..... **(202) 225-4065**

Dem. of Phoenix; born June 28, 1943 in Claypool; JD Ariz. State Univ., 1974; deputy dir. Guadalupe Org., Inc. 1969-71; staff, Gov. Raul Castro 1975-76; supervisor, Maricopa Cty. Bd. 1976-91; first elected to Congress in 1991—3rd term.

3rd/BOB STUMP ..... **(202) 225-4576**

Rep. of Tolleson; born April 4, 1927 in Phoenix; BS, Ariz. State Univ., 1951; cotton farmer; member, State House 1959-67, State Senate 1967-76, president, State Senate 1975-76; first elected to Congress in 1976—10th term.

4th/JOHN SHADEGG ..... **(202) 225-3361**

Rep. of Phoenix; born Oct. 22, 1949 in Phoenix; JD University of Arizona, 1975; BA University of Arizona, 1972; attorney; Special Assistant to State Attorney General 1985-90; founding director, Goldwater Institute for Public Policy; board member, Crime Victim Foundation, ASU Law Society; elected to Congress in 1994—1st term.

5th/JIM KOLBE ..... **(202) 225-2542**

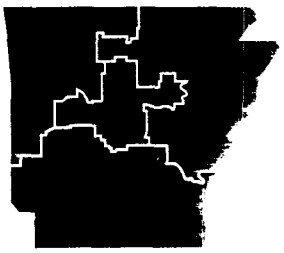
Rep. of Tucson; born June 28, 1942 in Evanston, IL; MBA Stanford Univ., 1967; member, State Senate 1976-82; first elected to Congress in 1984—6th term.

6th/J.D. HAYWORTH ..... **(202) 225-2190**

Rep. of North Scottsdale; born July 12, 1958 in High Point, NC; BA North Carolina State University; public relations consultant; businessman; TV sportscaster; insurance agent; member, Governor's Task Force on Violence Against Women; elected to Congress in 1994—1st term.

ARKANSAS

Number of House Seats:
2 Republicans
2 Democrats



GOVERNOR

JIM GUY TUCKER

Dem.; born June 13, 1943 in Oklahoma City, OK; JD University of Arkansas, 1968; war correspondent in South Vietnam 1965 and 1967; elected state attorney general 1972 and 1974; member U.S. House 1976-78; attorney; businessman; elected lieutenant governor 1990; appointed governor Dec. 1992; elected governor 1994, term ends 1998.

SENATORS

DALE BUMPERS .....

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DAVID PRYOR .....

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DISTRICTS/REPRE

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2nd/RAY THORNTON ...

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3rd/TIM HUTCHINSON

Rep. of L
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ADEGG ..... **(202) 225-3361**

Rep. of Phoenix; born Oct. 22, 1949 in Phoenix; JD University of Arizona, 1975; BA University of Arizona, 1972; attorney; Special Assistant to State Attorney General 1985-90; founding director, Goldwater Institute for Public Policy; board member, Crime Victim Foundation, ASU Law Society; elected to Congress in 1994—1st term.

E ..... **(202) 225-2542**

Rep. of Tucson; born June 28, 1942 in Evanston, IL; MBA Stanford Univ., 1967; member, State Senate 1976-82; first elected to Congress in 1984—6th term.

ORTH ..... **(202) 225-2190**

Rep. of North Scottsdale; born July 2, 1958 in High Point, NC; BA North Carolina State University; public relations consultant; businessman; TV sportscaster; insurance agent; member, Governor's Task Force on Violence Against Women; elected to Congress in 1994—1st term.

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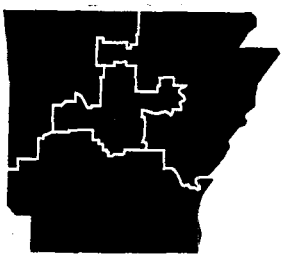


R

m[illegible]une 13, 1943 in Okla-na[illegible]OK; JD University of Kansas, 1968; war correspondent South Vietnam 1965 and 1967; elected state attorney general 1972-1974; member U.S. House 1976-; attorney; businessman; elected lieutenant governor 1990; appointed governor Dec. 1992; elected governor 1994, term ends 1998.

SENATORS

DALE BUMPERS ..... **(202) 224-4843**

Dem. of Charleston; senior senator; born Aug. 12, 1925 in Charleston; LLB Northwestern Univ., 1951; admitted to the Ark. Bar in 1952; governor 1970-74; elected to the U.S. Senate in 1974, 4th term ends in 1999.

DAVID PRYOR ..... **(202) 224-2353**

Dem. of Camden; junior senator; born Aug. 29, 1934 in Camden; LLB Univ. of Ark., 1964; member, State House 1961-66; Member of Congress 1966-72; governor 1975-79; elected to the U.S. Senate in 1978, 3rd term ends in 1997.

DISTRICTS/REPRESENTATIVES

1st/BLANCHE LAMBERT ..... **(202) 225-4076**

Dem. of Helena; born Sept. 30, 1960 in Helena; BA Randolph Macon College for Women, 1982; government relations specialist, former aide to Rep. Bill Alexander; first elected to Congress in 1992—2nd term.

2nd/RAY THORNTON ..... **(202) 225-2506**

Dem. of Little Rock; born July 16, 1928 in Conway; JD Univ. of Ark. Law School, 1956; US Navy 1951-53; attorney, 1956-70; atty. gen. 1971-73; Member of Congress 1973-79; pres., Ark. State Univ. 1980-84; pres., Univ. of Ark. 1984-89; re-elected to Congress in 1990—3rd term.

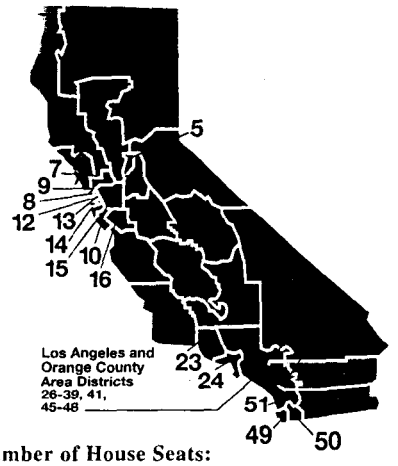
3rd/TIM HUTCHINSON ..... **(202) 225-4301**

Rep. of Bentonville; born August 11, 1949 in Gravette; MA Univ. of Arkansas, 1990; minister/professor; member, State House 1984-92; first elected to Congress in 1992—2nd term.

4th/JAY DICKEY ..... **(202) 225-3772**

Rep. of Pine Bluff; born Dec. 14, 1939 in Pine Bluff; JD Univ. of Arkansas, 1963; attorney, businessman; city attorney 1968-70; first elected to Congress in 1992—2nd term.

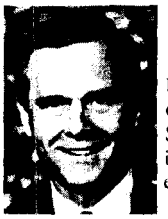
CALIFORNIA



Number of House Seats:
25 Republicans 27 Democrats

GOVERNOR

PETE WILSON



Rep.; born Aug. 23, 1933 in Lake Forest, IL; JD Univ. of Calif., 1962; U.S. Marine Corps 1955-58; member, State Assembly 1967-70; mayor of San Diego 1971-82; member, U.S. Senate 1982-91; elected governor in 1990; re-elected in 1994, term ends 1999.

SENATORS

DIANNE FEINSTEIN ..... **(202) 224-3841**

Dem. of San Francisco; senior senator; born June 22, 1933 in San Francisco; BA Stanford University, 1955; mayor of San Francisco 1978-88, member Board of Supervisors 1970-78, President Board of Supervisors, 1970-71, 1974-75, 1978. Elected to the U.S. Senate in 1992; re-elected in 1994, 2nd term ends in 2001.

BARBARA BOXER ..... (202) 224-3553

Dem. of Greenbrae; junior senator; born Nov. 11, 1940 in New York City; BA Brooklyn College, 1962; congressional admin. asst. 1972-74; journalist 1974-76; city supervisor 1976-82; Member of U.S. House 1982-92; elected to the U.S. Senate in 1992, 1st term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/FRANK RIGGS ..... (202) 225-3311

Rep. of Windsor; born Sept. 5, 1950 in Louisville, KY; BA Golden Gate University, 1980; U.S. Army 1972-75; police officer/sheriff's deputy 1976-83; businessman; homebuilder; trustee and two-term board president local school district; U.S. House 1991-93; re-elected to Congress in 1994—2nd term.

2nd/WALLY HERGER, JR. ..... (202) 225-3076

Rep. of Marysville; born May 20, 1945 in Sutter County; cattleman; dairyman; member, East Nicholas School Board 1977-80; member, State Assembly 1980-86; first elected to Congress in 1986—5th term.

3rd/VIC FAZIO ..... (202) 225-5716

Dem. of West Sacramento; born Oct. 11, 1942 in Winchester, MA; BA Union College, NY, 1965; congressional and legis. asst. 1966-75; member, State Assembly 1975-78; first elected to Congress in 1978—9th term.

4th/JOHN T. DOOLITTLE ..... (202) 225-2511

Rep. of Rocklin; born Oct. 30, 1950 in Glendale; JD McGeorge School of Law, 1978; member, State Senate 1981-90; first elected to Congress in 1990—3rd term.

5th/ROBERT T. MATSUI ..... (202) 225-7163

Dem. of Sacramento; born Sept. 17, 1941 in Sacramento; JD Hastings School of Law, Univ. of Calif., 1966; member, Sacramento City Council 1971-78; first elected to Congress in 1978—9th term.

6th/LYNN WOOLSEY ..... (202) 225-5161

Dem. of Petaluma; born Nov. 3, 1937 in Seattle, WA; BA Univ. of San Francisco, 1980; businesswoman; councilwoman Petaluma City 1985-92, vice mayor 1991-92; first elected to Congress in 1992—2nd term.

7th/GEORGE MILLER ..... (202) 225-2095

Dem. of Martinez; born May 17, 1945 in Richmond; JD Univ. of Calif. at Davis Law School, 1972; 5 years as legis. aide, State Assembly; first elected to Congress in 1974—11th term.

8th/NANCY PELOSI ..... (202) 225-4965

Dem. of San Francisco; born March 26, 1940 in Baltimore, MD; AB Trinity College, Washington, DC, 1962; public relations consultant; Calif. State Chair, Democratic National Committee 1981-83; Finance Chair, Democratic Senatorial Campaign Committee 1985-86; first elected to Congress in 1987—5th term.

9th/RONALD V. DELLUMS ..... (202) 225-2661

Dem. of Oakland; born Nov. 24, 1935 in Oakland; MSW Univ. of Calif., 1962; member, Berkeley City Council 1967-71; first elected to Congress in 1970—13th term.

10th/BILL BAKER .....

Rep. of Dan
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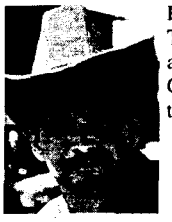
11th/ RICHARD POMBO ..



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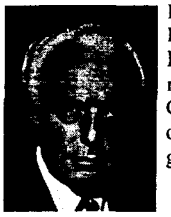
12th/TOM LANTOS .....



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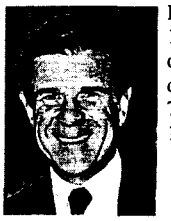
13th/FORTNEY H. "PETE STARK .....



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14th/ANNA ESHOO .....

Dem. of
1942 in Ne
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Congress

. MATSUI ..... (202) 225-7163

Dem. of Sacramento; born Sept. 17, 1941 in Sacramento; JD Hastings School of Law, Univ. of Calif., 1966; member, Sacramento City Council 1971-78; first elected to Congress in 1978—9th term.

LSEY ..... (202) 225-5161

Dem. of Petaluma; born Nov. 3, 1937 in Seattle, WA; BA Univ. of San Francisco, 1980; businesswoman; councilwoman Petaluma City 1985-92, vice mayor 1991-92; first elected to Congress in 1992—2nd terr

ILLER ..... (202) 225-2095

Dem. of Martinez; born May 17, 945 in Richmond; JD Univ. of Calif. at Davis Law School, 1972; 5 ears as legis. aide, State Assemly; first elected to Congress in 974—11th term.

OSI ..... (202) 225-4965

em. of San Francisco; born March 6, 1940 in Baltimore, MD; AB rinity College, Washington, DC, 962; public relations consultant; alif. State Chair, Democratic Naonal Committee 1981-83; Finance hair, Democratic Senatorial Camign Committee 1985-86; first elected Congress in 1987—5th term.

ELLUMS ..... (202) 225-2661

m. of Oakland; born Nov. 24, 35 in Oakland; MSW Univ. of lif., 1962; member, Berkeley City uncil 1967-71; first elected to ngress in 1970—13th term.

10th/BILL BAKER ..... (202) 225-1880

Rep. of Danville; born June 14, 1940 in Oakland; BS San Jose State Univ., 1963; budget analyst; member, State Assembly 1980-92; first elected to Congress in 1992—2nd term.

11th/ RICHARD POMBO ..... (202) 225-1947

Rep. of Tracy; born Jan. 8, 1961 in Tracy; attended California State Univ. at Pomona; rancher; member, Tracy City Council 1990-92; first elected to Congress in 1992—2nd term.

12th/TOM LANTOS ..... (202) 225-3531

Dem. of South San Francisco; born Feb. 1, 1928 in Budapest, Hungary; PhD Univ. of Calif., 1953; economics professor, San Francisco State College; member, Millbrae Board of Education; first elected to Congress in 1980—8th term.

13th/FORTNEY H. "PETE" STARK ..... (202) 225-5065

Dem. of Hayward; born Nov. 11, 1931 in Milwaukee, WI; MBA Univ. of Calif., 1960; founder and president, Security National Bank 1963-72; first elected to Congress in 1972—12th term.

14th/ANNA ESHOO ..... (202) 225-8104

Dem. of Atherton; born Dec. 11, 1942 in New Britain, CT; AA Canada College, 1978; San Mateo County Supervisor 1982-92; first elected to Congress in 1992—2nd term.

15th/NORMAN Y. MINETA ..... (202) 225-2631

Dem. of San Jose; born Nov. 12, 1931 in San Jose; BS, Univ. of Calif., Berkeley, 1953; San Jose city councilman 1967-71, mayor 1971-74; first elected to Congress in 1974—11th term.

16th/ZOE LOFGREN ..... (202) 225-3072

Dem. of San Jose; born Dec. 21, 1947 in Palo Alto; JD University of Santa Clara, 1975; attorney; professor, Santa Clara School of Law; staff assistant to Congressman Don Edwards; Santa Clara Board of Supervisors 1980-94; elected to Congress in 1994—1st term.

17th/SAM FARR ..... (202) 225-2861

Dem. of Carmel; born July 4, 1941 in San Francisco; BA Willamette Univ., 1963; Peace Corps volunteer 1963-65; budget analyst and consultant, Assembly Committee on Constitutional Amendments 1969-77; State Assemblyman 1981-93; first elected to Congress in special election in 1993—2nd term.

18th/GARY CONDIT ..... (202) 225-6131

Dem. of Ceres; born Apr. 21, 1948 in Salina, OK; BA Calif. State Univ., 1972; member, Ceres City Council 1972-76, mayor 1974-76; member Stanislaus Cty. Board of Supervisors 1976-82, chairman 1980; member, Calif. Assembly 1983-89; first elected to Congress in 1989—4th term.

19th/GEORGE P. RADANOVICH ..... (202) 225-4540

Rep. of Mariposa; born June 20, 1955 in Mariposa; BS Cal State Polytechnic University; pioneered grape industry in Mariposa County, 1982; winery owner; member, Mariposa Chamber of Commerce; Mariposa County Supervisor 1988-92; elected to Congress in 1994—1st term.

20th/CALVIN M. DOOLEY ..... (202) 225-3341

Dem. of Hamford; born Jan. 11, 1954 in Visalia; MA, Stanford Univ., 1987; farmer & businessman; admin. asst. to state senator 1988-90; first elected to Congress in 1990—3rd term.

21st/WILLIAM M. THOMAS ..... (202) 225-2915

Rep. of Bakersfield; born Dec. 6, 1941 in Wallace, ID; MA San Francisco State Univ., 1965; professor, Bakersfield Community College 1965-74; member, State Assembly 1974-78; first elected to Congress in 1978—9th term.

22nd/ANDREA SEASTRAND ..... (202) 225-3601

Rep. of Shell Beach; born Aug. 5, 1941 in Chicago, IL; BA DePaul University, 1963; teacher; member, California Federation of Republican Women; State Assemblywoman 1990-94; Assistant Republican Leader; member, three standing committees and Assembly Rural Caucus; elected to Congress in 1994—1st term.

23rd/ELTON GALLEGLY ..... (202) 225-5811

Rep. of Simi Valley; born March 7, 1944 in Huntington Park; businessman; member, Simi Valley Council 1979-80; mayor, Simi Valley 1980-86; first elected to Congress in 1986—5th term.

24th/ANTHONY C. BEILENSON ..... (202) 225-5911

Dem. of Woodland Hills; born Oct. 26, 1932 in New Rochelle, NY; LLB Harvard Law School, 1957; member, State Assembly 1963-66, State Senate 1967-76; first elected to Congress in 1976—10th term.

25th/HOWARD "BUCK" McKEON ..... (202) 225-1956

Rep. of Santa Clarita; born Sept. 9, 1938 in Tugunga, CA; BS Brigham Young Univ., 1985; businessman; high school district trustee 1979-87, mayor of Santa Clarita 1987-92; first elected to Congress in 1992—2nd term.

26th/HOWARD BERMAN ..... (202) 225-4695

Dem. of Sherman Oaks; born April 15, 1941 in Los Angeles; LLB Univ. of Calif. Los Angeles, 1965; attorney; member, State Assembly 1973-82, majority floor leader 1974-79, caucus chairman 1979-80; first elected to Congress in 1982—7th term.

27th/CARLOS J. MOORHEAD ..... (202) 225-4176

Rep. of Glendale; born May 6, 1922 in Long Beach; JD Univ. of So. Calif., School of Law, 1949; practicing attorney; member, State Assembly 1967-72; first elected to Congress in 1972—12th term.

28th/DAVID DREIER ..... (202) 225-2305

Rep. of Lavern; born July 5, 1952 in Kansas City, MO; MA Claremont Graduate School 1976; vice president, Dreier Development Company; first elected to Congress in 1980—8th term.

29th/HENRY A. WAXMAN ..... (202) 225-3976

Dem. of Los Angeles; born Sept. 12, 1939 in Los Angeles; JD Univ. of Calif. Los Angeles; admitted to Calif. Bar in 1965; 3 terms in State Assembly; first elected to Congress in 1974—11th term.

30th/XAVIER BECERRA ...

Dem. of Mo
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31st/MATTHEW G. MARTINEZ .....

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32nd/JULIAN C. DIXON .

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33rd/LUCILLE ROYBAL-ALLARD .....

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34th/ESTEBAN EDWAR TORRES .....

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D "BUCK"
..... (202) 225-1956

Rep. of Santa Clarita; born Sept. 9, 1938 in Tugunga, CA; BS Brigham Young Univ., 1985; businessman; high school district trustee 1979-87, mayor of Santa Clarita 1987-92; first elected to Congress in 1992—2nd term.

) BERMAN ..... (202) 225-4695

Dem. of Sherman Oaks; born April 15, 1941 in Los Angeles; LLB Univ. of Calif. Los Angeles, 1965; attorney; member, State Assembly 1973-82, majority floor leader 1974-79, c[illegible] hairman 1979-80; first elect- [illegible] ngress in 1982—7th term.

J.
..... (202) 225-4176

Rep. of Glendale; born May 6, 1922 in Long Beach; JD Univ. of So. Calif., School of Law, 1949; practicing attorney; member, State Assembly 1967-72; first elected to Congress in 1972—12th term.

EIER ..... (202) 225-2305

Rep. of Lavern; born July 5, 1952 in Kansas City, MO; MA Claremont Graduate School 1976; vice president, Dreier Development Company; first elected to Congress in 1980—8th term.

WAXMAN ..... (202) 225-3976

Dem. of Los Angeles; born Sept. 12, 1939 in Los Angeles; JD Univ. of Calif. Los Angeles; admitted to Calif Bar in 1965; 3 terms in State [illegible] v; first elected to Congress [illegible] 11th term.

30th/XAVIER BECERRA ..... (202) 225-6235

Dem. of Monterey Hills; born Jan. 26, 1958 in Sacramento; JD Stanford Law School, 1984; attorney; member, State Assembly 1990-92; first elected to Congress in 1992—2nd term.

31st/MATTHEW G. MARTINEZ ..... (202) 225-5464

Dem. of Monterey Park; born Feb. 14, 1929 in Walsenburg, CO; Los Angeles Trade Tech School, 1949; businessman; city councilman, mayor of Monterey Park 1976-80; member, State Assembly 1980-82; first elected to Congress in 1982—8th term.

32nd/JULIAN C. DIXON ..... (202) 225-7084

Dem. of Los Angeles; born Aug. 8, 1934 in Washington, DC; LLB Southwestern Univ., Calif., 1967; member, State Assembly 1972-78, chairman, Democratic Caucus; first elected to Congress in 1978—9th term.

33rd/LUCILLE ROYBAL-ALLARD ..... (202) 225-1766

Dem. of Los Angeles; born June 12, 1941 in Boyle Heights; BA California State Univ. at Los Angeles, 1965; member, State Assembly 1987-92; first elected to Congress in 1992—2nd term.

34th/ESTEBAN EDWARD TORRES ..... (202) 225-5256

Dem. of West Cavina; born Jan. 27, 1930 in Miami, AZ; Honorary Doctorate, Nat'l Univ., San Diego, Calif.; UAW official 1957-68, 1974-77; exec. director, TELACU 1968-74; U.S. Ambassador to UNESCO, Paris 1977-79; spec. asst. to the President 1979-80; first elected to Congress in 1982—7th term.

35th/MAXINE WATERS ..... (202) 225-2201

Dem. of Los Angeles; born Aug. 31, 1938 in St. Louis, MO; BA Calif. State Univ. at Los Angeles, 1970; former chief deputy to a L.A. city council representative; member, State Assembly 1976-90; first elected to Congress in 1990—3rd term.

36th/JANE HARMAN ..... (202) 225-8220

Dem. of Marina Del Ray; born June 28, 1945 in Los Angeles; JD Harvard Law School, 1969; BA Smith College, 1966; attorney; democratic party activist; first elected to Congress in 1992—2nd term.

37th/WALTER TUCKER III ..... (202) 225-7924

Dem. of Compton; born May 28, 1957 in Compton; JD Georgetown Univ. Law School, 1981; BA Univ. of Southern California, 1978; attorney; mayor City of Compton 1991-92; first elected to Congress in 1992—2nd term.

38th/STEVE HORN ..... (202) 225-6676

Rep. of Long Beach; born May 31, 1931 in Gilroy; PhD Stanford Univ., 1958; MPA Harvard Univ., 1955; professor, former president of Cal State Long Beach; first elected to Congress in 1992—2nd term.

39th/EDWARD ROYCE ..... (202) 225-4111

Rep. of Fullerton; born October 12, 1951 in Los Angeles; BA California State Univ. of Fullerton, 1977; businessman; member, State Senate 1982-92; first elected to Congress in 1992—2nd term.

40th/JERRY LEWIS ..... (202) 225-5861

Rep. of Redlands; born Oct. 21, 1934 in Seattle, WA; BA Univ. of Calif. Los Angeles, 1956; life underwriter; member, State Assembly 1968-78; first elected to Congress in 1978—9th term.

41st/JAY KIM ..... (202) 225-3201

Rep. of Diamond Bar; born March 27, 1939 in Korea; MS Univ. of Southern California; engineer; member Diamond Bar City Council 1990-92, mayor Diamond Bar 1991-92; first elected to Congress in 1992—2nd term.

42nd/GEORGE E. BROWN, JR ..... (202) 225-6161

Dem. of Riverside; born March 6, 1920 in Holtville; BA, Univ. of Calif. Los Angeles, 1946; Member of Congress 1963-71; re-elected to Congress in 1972—12th term.

43rd/KEN CALVERT ..... (202) 225-1986

Rep. of Corona; born June 8, 1953 in Corona; BA San Diego State Univ., 1975; small business owner; Republican party activist; first elected to Congress in 1992—2nd term.

44th/SONNY BONO ..... (202) 225-5330

Rep. of Palm Springs; born Feb. 16, 1935 in Detroit, MI; Inglewood High School; songwriter, singer, and producer; early anti-drug activist; restaurant consultant; mayor of Palm Springs 1988-92; candidate for U.S. Senate 1992; elected to Congress in 1994—1st term.

45th/DANA ROHRABACHER .... (202) 225-2415

Rep. of Huntington Beach; born June 21, 1947 in Coronado; MA Univ. of Southern Calif., 1971; senior speech writer, special asst. to the President 1981-1988; journalist; first elected to Congress in 1988—4th term.

46th/ROBERT K. DORNAN ..... (202) 225-2965

Rep. of Garden Grove, born April 3, 1933 in New York City; attended Loyola Univ., Los Angeles; fighter pilot, U.S. Air Force, 1953-58; broadcaster, journalist, produced/hosted television public affairs shows, 1965-73; first elected to Congress in 1976, re-elected in 1984—6th term.

47th/CHRISTOPHER COX ..... (202) 225-5611

Rep. of Newport Beach; born Oct. 16, 1952 in St. Paul, MN; JD/MBA Harvard Univ., 1977; senior assoc. counsel to the President 1986-88; attorney; teacher; businessman; publisher; first elected to Congress in 1988—4th term.

48th/RON PACKARD ..... (202) 225-3906

Rep. of Oceanside; born Jan. 19, 1931 in Meridian, ID; DMD, Univ. of Oregon Dental School, 1957; U.S. Navy 1957-59; chairman, trustee, Carlsbad Unified School District 1962-74; member, Carlsbad City Council 1976-78; mayor, City of Carlsbad 1978-82; first elected to Congress in 1982—7th term.

49th/BRIAN BILBRAY ..... (202) 225-2040

Rep. of Imperial Beach; born Jan 28, 1951 in Coronado; Western State University San Diego; Imperial Beach City Council 1976; Mayor of Imperial Beach 1979-84; San Diego County Board of Supervisors 1985-94; elected to Congress in 1994—1st term.

50th/ROBERT "BOB" FILNER ..... (

Dem. of Burlingame 1942 in Pittsburg, P Univ., 1972; professo Diego Board of Educ San Diego City Co first elected to Cong 2nd term.

51st/RANDY "DUKE" CUNNINGHAM ..... (

Rep. of Chula Vist 1941 in Los Angel Univ., 1985; U.S. coach; businessman; Navy Fighter Pilot W (Top Gun) at Miram tion School, Natio U. S. Navy 1967-87 Congress in 1990—

52nd/DUNCAN L. HUNTER ..... (

Rep. of El Cajon; 1948 in Riverside; JI Univ. of Law, 1976; attorney 1976-80; Congress in 1980—

COLORADO

Number of House Seats:
4 Republicans
2 Democrats

GOVERNOR

ROY ROMER

Dem.; born Oct. 31 den City, KS; LLB 1952; member, Stat 62, State Senate 196 riculture Commissio of staff to governor 83; state treasurer governor in 1986, re- and 1994, term end

OHRABACHER .... (202) 225-2415

Rep. of Huntington Beach; born June 21, 1947 in Coronado; MA Univ. of Southern Calif., 1971; senior speech writer, special asst. to the President 1981-1988; journalist; first elected to Congress in 1988—4th term.

K. DORNAN ..... (202) 225-2965

Rep. of Garden Grove, born April 3, 1933 in New York City; attended Loyola Univ., Los Angeles; fighter pilot, U.S. Air Force, 1953-58; broadcaster, journalist, produced/hosted television public affairs shows, 1965-[illegible] elected to Congress in 1976. [illegible]d in 1984—6th term.

PHER COX ..... (202) 225-5611

Rep. of Newport Beach; born Oct. 16, 1952 in St. Paul, MN; JD/MBA Harvard Univ., 1977; senior assoc. counsel to the President 1986-88; attorney; teacher; businessman; publisher; first elected to Congress in 1988—4th term.

KARD ..... (202) 225-3906

Rep. of Oceanside; born Jan. 19, 1931 in Meridian, ID; DMD, Univ. of Oregon Dental School, 1957; U.S. Navy 1957-59; chairman, trustee, Carlsbad Unified School District 1962-74; member, Carlsbad City Council 1976-78; mayor, City of Carlsbad 1978-82; first elected to Congress in 1982—7th term.

BRAY ..... (202) 225-2040

Rep. of Imperial Beach; born Jan. 28, 1951 in Coronado; Western State University San Diego; Imperial Beach City Council 1976; Mayor of Imperial Beach 1979-84; San Diego County B[illegible] Supervisors 1985-94; elected [illegible]ess in 1994—1st term.

50th/ROBERT "BOB" FILNER ..... (202) 225-8045

Dem. of Burlingame; born Sept. 4, 1942 in Pittsburg, PA; PhD Cornell Univ., 1972; professor; member, San Diego Board of Education 1979-83, San Diego City Council 1987-92; first elected to Congress in 1992—2nd term.

51st/RANDY "DUKE" CUNNINGHAM ..... (202) 225-5452

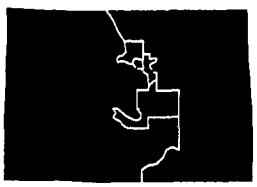
Rep. of Chula Vista; born Dec. 8, 1941 in Los Angeles; MBA, Nat. Univ., 1985; U.S. Olympic Swim coach; businessman; instructor, U.S. Navy Fighter Pilot Weapons School (Top Gun) at Miramar; dean, Aviation School, National University; U.S. Navy 1967-87; first elected to Congress in 1990—3rd term.

52nd/DUNCAN L. HUNTER ..... (202) 225-5672

Rep. of El Cajon; born May 31, 1948 in Riverside; JD Western State Univ. of Law, 1976; practicing trial attorney 1976-80; first elected to Congress in 1980—8th term.

COLORADO

Number of House Seats:
4 Republicans
2 Democrats



GOVERNOR

ROY ROMER

Dem.; born Oct. 31, 1928 in Garden City, KS; LLB Univ. of Colo., 1952; member, State House 1958-62, State Senate 1962-66; Colo. Agriculture Commissioner 1975; chief of staff to governor 1975-77, 1982-83; state treasurer 1977-87; elected governor in 1986, re-elected in 1990 and 1994, term ends 1999.

SENATORS

HANK BROWN ..... (202) 224-5941

Rep. of Greeley; senior senator; born Feb. 12, 1940 in Denver; LLM, George Washington Univ., 1986; cattle feeder and meat processor 1969-80; member, State Senate 1972-76; Member of U.S. House 1980-91; elected to the U.S. Senate in 1990, 1st term ends in 1997.

BEN NIGHTHORSE CAMPBELL ..... (202) 224-5852

Dem. of Ignacio; junior senator; born Apr. 13, 1933 in Auburn, CA; BA San Jose State College, 1957; rancher; jewelry designer; member, State House 1982-86; Member of U.S. House 1986-92; elected to U.S. Senate 1992, 1st term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/PATRICIA SCHROEDER ..... (202) 225-4431

Dem. of Denver; born July 30, 1940 in Portland, OR; JD Harvard Law School, 1964; field attorney, National Labor Relations Board 1964-66; instructor, Regis College 1970-72; first elected to Congress in 1972—12th term.

2nd/DAVID SKAGGS ..... (202) 225-2161

Dem. of Boulder; born Feb. 22, 1943 in Cincinnati, OH; LLB Yale Law School, 1967; attorney; member, State House 1980-86, minority leader 1982-85; first elected to Congress in 1986—5th term.

3rd/SCOTT McINNIS ..... (202) 225-4761

Rep. of Glenwood Springs; born May 9, 1953 in Glenwood Springs; JD St. Mary's Univ. in San Antonio Law School, 1980; attorney; businessman; member, State House 1982-92, house majority leader 1990-92; first elected to Congress in 1992—2nd term.

4th/WAYNE ALLARD ..... (202) 225-4676

Rep. of Lorland; born Dec. 2, 1943 in Ft. Collins; DVM, Colo. State Univ., 1968; veterinarian; city health officer, 1970-78; member, State Senate, 1982-90; first elected to Congress in 1990—3rd term.

5th/JOEL M. HEFLEY ..... (202) 225-4422

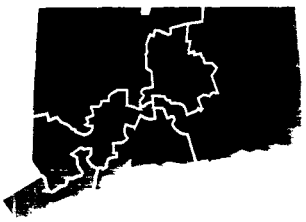
Rep. of Colorado Springs; born April 18, 1935 in Ardmore, OK; MS Okla. State Univ., 1962; exec. dir., Community Planning & Research Council 1966-86; member, vice chairman, State House 1977-78, State Senate 1979-86; first elected to Congress in 1986—5th term.

6th/DAN SCHAEFER ..... (202) 225-7882

Rep. of Inglewood; born Jan. 25, 1936 in Gutenberg, IA; BA Niagara Univ., NY, 1961; teacher; public relations consultant 1967-84; member, State House 1977-83; first elected to Congress in 1983 in a special election—7th term.

CONNECTICUT

Number of Seats:
[redacted]blicans
[redacted]mocrats



GOVERNOR

JOHN ROWLAND

Rep. of Waterbury; born May 24, 1957 in Waterbury, CT; BA Villanova University; businessman; State Legislature 1980-83; Member of U.S. House 1984-89; member, Armed Services and Veterans' Affairs committees; candidate for governor 1990; elected governor in 1994, term ends 1998.

SENATORS

CHRISTOPHER J. DODD ..... (202) 224-2823

Dem. of East Haddam; senior senator; born May 27, 1944 in Willimantic; JD Univ. of Louisville School of Law, 1972; Peace Corps volunteer, Dominican Republic 1966-68; Member of U.S. House 1975-80; elected to the U.S. Senate in 1980, 3rd term ends in 1999.

JOSEPH I. LIEBERMAN ..... (202) 224-4041

Dem. of New Haven; junior senator; born Feb. 24, 1942 in Stamford; LLB Yale Law School, 1967; practicing attorney, 1967-88; member, State Senate 1971-81; Majority Leader 1975-81; state atty. gen. 1983-89; elected to the U.S. Senate in 1988, 2nd term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/BARBARA B. KENNELLY ..... (202) 225-2265

Dem. of Hartford; born July 10, 1936 in Hartford; MA, Trinity College, Hartford, 1971; member, Hartford City Council 1975-79; secretary of state 1979-82; first elected to Congress in 1982—8th term.

2nd/SAM GEJDENSON ..... (202) 225-2076

Dem. of Bozrah; born May 20, 1948 in Eschwege, Germany; BA Univ. of Conn., 1970; management position in merchandising, trading company broker; member, State Assembly 1975-78; first elected to Congress in 19[illegible]—8th term.

3rd/ROSA L. DeLAURO ..... (202) 225-3661

Dem. of New Haven; born Mar. 2, 1943 in New Haven; MA Columbia Univ., 1966; exec. asst. to mayor of New Haven 1976-78, to New Haven development administrator 1978-79; chief of staff to U.S. Senator Chris Dodd 1981-87; partner, DeLauro-Geller 1987-88; exec. dir., EMILY's List, 1989; first elected to Congress in 1990—3rd term.

4th/CHRISTOPHER SHAYS ..... (

Rep. of Stamford; 1945 in Stamford; M MBA, 1974, New Yo in Peace Corps, 196 State Assembly 1975- to Congress in 1987

5th/GARY A. FRANKS ..... (

Rep. of Waterbury; b in Waterbury; BA Y member, Board of A 90; businessman; first gress in 1990—3rd te

6th/NANCY L. JOHNSON ..... (

Rep. of New Britai 1935 in Chicago, IL College, 1957; mem ate 1977-82; first el gress in 1982—7th t

DELAWARE

Number of House Seats:
1 Republican

GOVERNOR

THOMAS R. CARPER

Dem. of Wilmington 1947 in Beckley, W of Del., 1975; U.S. economic developm 1975-76; state treas member of U.S. H elected governor in 1 1997.

S

ER J. DODD ..... (202) 224-2823

Dem. of East Haddam; senior senator; born May 27, 1944 in Willimantic; JD Univ. of Louisville School of Law, 1972; Peace Corps volunteer, Dominican Republic 1966-68; Member of U.S. House 1975-80; elected to the U.S. Senate in 1980, 3rd term ends in 1999.

EBERMAN ..... (202) 224-4041

Dem. of New Haven; junior senator; born Feb. 24, 1942 in Stamford; LLB Yale Law School, 1967; practicing attorney, 1967-88; member, S ate 1971-81; Majority Leader . state atty. gen. 1983-89; e to the U.S. Senate in 1988, 2nd term ends in 2001.

/REPRESENTATIVES

B.

..... (202) 225-2265

Dem. of Hartford; born July 10, 1936 in Hartford; MA, Trinity College, Hartford, 1971; member, Hartford City Council 1975-79; secretary of state 1979-82; first elected to Congress in 1982—8th term.

ENSON ..... (202) 225-2076

Dem. of Bozrah; born May 20, 1948 in Eschwege, Germany; BA Univ. of Conn., 1970; management position in merchandising, trading company broker; member, State Assembly 1975-78; first elected to Congress in 1980 —8th term.

LAURO ..... (202) 225-3661

Dem of New Haven; born Mar. 2, 1 ew Haven; MA Columbia U 6; exec. asst. to mayor of N ven 1976-78, to New Haven development administrator 1978-79; chief of staff to U.S. Senator Chris Dodd 1981-87; partner, DeLauro-Geller 1987-88; exec. dir., EMILY's List, 1989; first elected o Congress in 1990—3rd term.

4th/CHRISTOPHER SHAYS ..... (202) 225-5541

Rep. of Stamford; born Oct. 18, 1945 in Stamford; MPA, 1978 and MBA, 1974, New York Univ.; served in Peace Corps, 1968-70; member, State Assembly 1975-87; first elected to Congress in 1987—5th term.

5th/GARY A. FRANKS ..... (202) 225-3822

Rep. of Waterbury; born Feb. 9, 1953 in Waterbury; BA Yale Univ., 1975; member, Board of Aldermen, 1985-90; businessman; first elected to Congress in 1990—3rd term.

6th/NANCY L. JOHNSON ..... (202) 225-4476

Rep. of New Britain; born Jan. 5, 1935 in Chicago, IL; BA Radcliffe College, 1957; member, State Senate 1977-82; first elected to Congress in 1982—7th term.

DELAWARE

Number of House Seats:
1 Republican

GOVERNOR

THOMAS R. CARPER

Dem. of Wilmington; born Jan. 23, 1947 in Beckley, WV; MBA Univ. of Del., 1975; U.S. Navy 1968-73; economic development specialist 1975-76; state treasurer 1976-82; member of U.S. House 1982-92; elected governor in 1992, term ends 1997.

SENATORS

WILLIAM V. ROTH, JR ..... (202) 224-2441

Rep. of Wilmington; senior senator; born July 22, 1921 in Great Falls, MT; LLB Harvard Law School, 1949; member, Republican National Committee 1961-64; member of U.S. House 1967-70; elected to the U.S. Senate in 1970, 6th term ends in 2001.

JOSEPH R. BIDEN, JR ..... (202) 224-5042

Dem. of Wilmington; junior senator; born Nov. 20, 1942 in Scranton, PA; JD Syracuse Univ. College of Law, 1968; practiced law 1968-72; member, New Castle City Council 1970-72; elected to the U.S. Senate in 1972, 4th term ends in 1997.

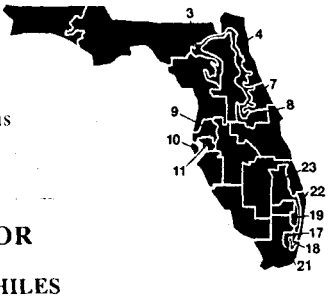
DISTRICT/REPRESENTATIVE

At Large/MICHAEL N. CASTLE .... (202) 225-4165

Rep. of Dover; born July 2, 1939 in Wilmington; LLB Georgetown Univ. Law School, 1964; attorney; member, State House 1966-68, State Senate 1968-74, lieutenant governor 1981-85, governor 1985-92; first elected to Congress in 1992—2nd term.

FLORIDA

Number of House Seats:
15 Republicans
8 Democrats



GOVERNOR

LAWTON CHILES

Dem.; born Apr. 3, 1930 in Lakeland; LLB Univ. of Fla. College of Law, 1955; member, State House 1959-67, State Senate 1967-70; member, U.S. Senate 1971-89; dir., Collins Center for Public Policy 1989-90; elected governor in 1990; re-elected in 1994, term ends 1999.

SENATORS

BOB GRAHAM ..... (202) 224-3041

Dem. of Miami Lakes; senior senator; born Nov. 9, 1936 in Miami; LLB Harvard Law School, 1962; member, State House 1967-70, State Senate 1971-78; governor 1979-87; elected to the U.S. Senate in 1986; 2nd term ends in 1999.

CONNIE MACK ..... (202) 224-5274

Rep. of Cape Coral; junior senator; born Oct. 29, 1940 in Philadelphia, PA; BS Univ. of Fla., 1966; banker; president, Fla. National Bank 1975-82; member of U.S. House 1983-89; elected to U.S. Senate in 1988, 2nd term ends in 2001.

DISTRICTS/REPRESENTATIVES

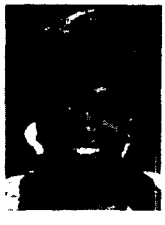
1st/JOE SCARBOROUGH ..... (202) 225-4136

Rep. of Pensacola; born April 9, 1963 in Atlanta, GA; JD University of Florida; BA University of Alabama; attorney; businessman; executive board member, Escambia-Santa Rosa Bar Assn.; board of directors, Navy League of the Pensacola Area, Emerald Coast Pediatric Primary Care; elected to Congress in 1994—1st term.

2nd/PETE PETERSON ..... (202) 225-5235

Dem. of Jackson City; born June 26, 1935 in Omaha, NE; BS Univ. of Tampa; U.S. Air Force 1954-81; founder, CRT Computers; program dir., Dozier School for Boys, 1984-90; first elected to Congress in 1990—3rd term.

3rd/CORRINE BROWN ..... (202) 225-0123



Dem. of Jacksonville; born Nov. 11, 1946 in Jacksonville; BS Univ. of Florida, 1974; professor; member, State House 1982-92; first elected to Congress in 1992—2nd term.

4th/TILLIE K. FOWLER ..... (202) 225-2501

Rep. of Jacksonville; born Dec. 23, 1942 in Milladgeville, GA; JD Emory Univ. School of Law, 1967; attorney; member, Jacksonville City Council 1985-92; first elected to Congress in 1992—2nd term.

5th/KAREN L. THURMAN ..... (202) 225-1002

Dem. of Dunnellon; born Jan. 12, 1951 in Rapid City, SD; BA Univ. of Florida, 1973; teacher; member, Dunnellon City Council, State Senate 1982-92; first elected to Congress in 1992—2nd term.

6th/CLIFF STEARNS ..... (202) 225-5744

Rep. of Ocala; born April 16, 1941 in Washington, DC; BS George Washington Univ., 1963; U.S. Air Force 1963-67; executive, CBS, Inc. 1969-70; acct. exec., "Images 70" 1970-72; motel industry 1972-77; president, Stearns House, Inc. 1977-88; first elected to Congress in 1988—4th term.

7th/JOHN MICA ..... (202) 225-4035

Rep. of Winter Park; born Jan. 27, 1943 in Binghamton, NY; BA Univ. of Florida, 1967; businessman; member, State House 1976-80; first elected to Congress in 1992—2nd term.

8th/BILL McCOLLUM ..... (202) 225-2176

Rep. of Orlando; born July 12, 1944 in Brooksville; JD Univ. of Florida, 1968; U.S. Navy Judge Advocate General's Corp 1969-72; practicing attorney in Orlando; first elected to Congress in 1980—8th term.

9th/MICHAEL BILIRAKIS ..... (

Rep. of Palm Harbo 1930 in Tarpon Sp of Fla., 1963; atto man; engineer; judg Petersburg Junior Col to Congress in 198.

10th/C. W. "BILL" YOUNG ..... (

Rep. of St. Petersb 16, 1930 in Harmar ber, State Senate 196 to Congress in 197

11th/SAM M. GIBBONS ..... (

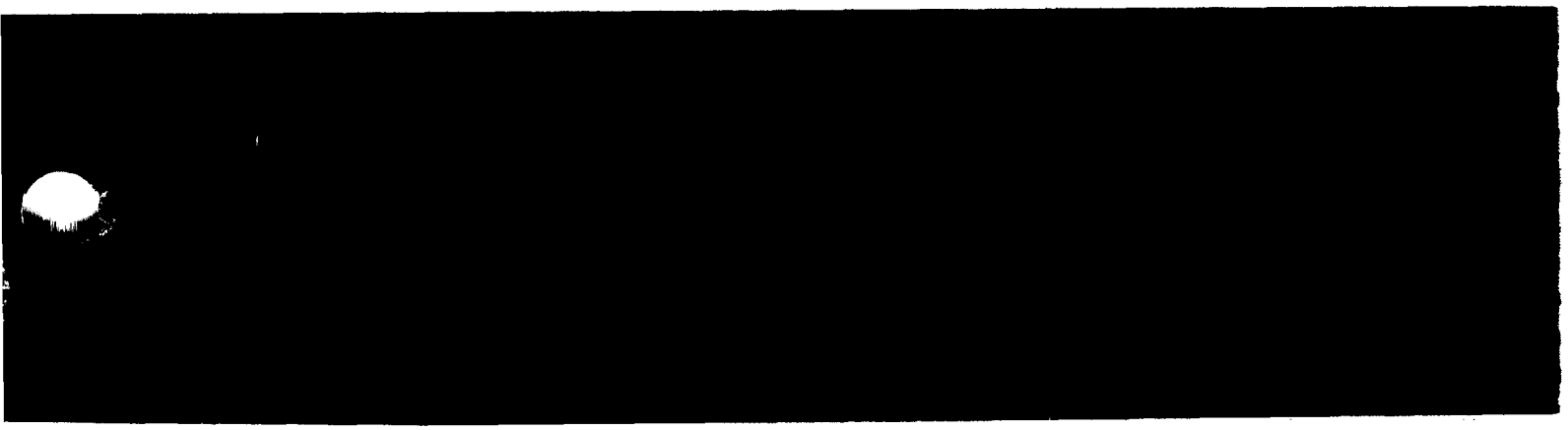
Dem. of Tampa; bo in Tampa; JD Univ member, State Hous Senate 1958-62; f Congress in 1962—

12th/CHARLES T. CANADY ..... (

Rep. of Lakeland; 1954 in Lakeland; School, 1979; BA lege, 1976; attorney House 1984-90; f Congress in 1992—

13th/DAN MILLER ..... (

Rep. of Bradenton 1942 in Highland Louisiana State Un Emory Univ., 1965 real estate develop to Congress in 199



. FOWLER ..... (202) 225-2501

Rep. of Jacksonville; born Dec. 23, 1942 in Milladgeville, GA; JD Emory Univ. School of Law, 1967; attorney; member, Jacksonville City Council 1985-92; first elected to Congress in 1992—2nd term.

. THURMAN ..... (202) 225-1002

Dem. of Dunnellon; born Jan. 12, 1951 in Rapid City, SD; BA Univ. of Florida, 1973; teacher; member, Dunnellon City Council, State Senate 1982-92; first elected to Congr in 1992—2nd term.

EARNS ..... (202) 225-5744

Rep. of Ocala; born April 16, 1941 in Washington, DC; BS George Washington Univ., 1963; U.S. Air Force 1963-67; executive, CBS, Inc. 1969-70; acct. exec., "Images 70" 1970-72; motel industry 1972-77; president, Stearns House, Inc. 1977-88; first elected to Congress in 1988—4th term.

:A ..... (202) 225-4035

Rep. of Winter Park; born Jan. 27, 1943 in Binghamton, NY; BA Univ. of Florida, 1967; businessman; member, State House 1976-80; first elected to Congress in 1992—2nd term.

OLLUM ..... (202) 225-2176

Rep. of Orlando; born July 12, 1944 in Brooksville; JD Univ. of Florida, 1968; U.S. Navy Judge Advocate General's Corp 1969-72; practicing attorney in Orlando; first elected to Congress in 1980—8th term.

9th/MICHAEL BILIRAKIS ..... (202) 225-5755

Rep. of Palm Harbor; born July 16, 1930 in Tarpon Springs; JD Univ. of Fla., 1963; attorney; businessman; engineer; judge; educator, St. Petersburg Junior College; first elected to Congress in 1982—7th term.

10th/C. W. "BILL" YOUNG ..... (202) 225-5961

Rep. of St. Petersburg; born Dec. 16, 1930 in Harmarville, PA; member, State Senate 1960-70; first elected to Congress in 1970—13th term.

11th/SAM M. GIBBONS ..... (202) 225-3376

Dem. of Tampa; born Jan. 20, 1920 in Tampa; JD Univ. of Fla., 1947; member, State House 1953-58, State Senate 1958-62; first elected to Congress in 1962—17th term.

12th/CHARLES T. CANADY ..... (202) 225-1252

Rep. of Lakeland; born June 22, 1954 in Lakeland; JD Yale Law School, 1979; BA Haverford College, 1976; attorney; member, State House 1984-90; first elected to Congress in 1992—2nd term.

13th/DAN MILLER ..... (202) 225-5015

Rep. of Bradenton; born May 30, 1942 in Highland Park, MI; PhD Louisiana State Univ., 1970; MBA Emory Univ., 1965; businessman, real estate developer; first elected to Congress in 1992—2nd term.

14th/PORTER J. GOSS ..... (202) 225-2536

Rep. of Sanibel; born Nov. 26, 1938 in Waterbury, CT; BA Yale Univ., 1960; CIA officer 1962-72; mayor, City of Sanibel 1974-82; city commissioner, Lee City 1983-88; investor; first elected to Congress in 1988—4th term.

15th/DAVID WELDON ..... (202) 225-3671

Rep. of Palm Bay; born Aug. 31, 1953 in Amityville, NY; MD SUNY at Buffalo; BS SUNY at Stoneybrook, 1978; Major, U.S. Army; physician; member, Florida Medical Assn.; founder, Space Coast Family Forum, a citizens committee to promote family issues; elected to Congress in 1994—1st term.

16th/MARK FOLEY ..... (202) 225-5792

Rep. of West Palm Beach; born Sept. 8, 1954 in Newton, MA; Palm Beach Community College; real estate broker, president of Foley-Smith and Associates, Inc.; chairman, Palm Beach Regional Hospital; State Representative 1991-92; State Senator 1993-94; elected to Congress in 1994—1st term.

17th/CARRIE MEEK ..... (202) 225-4506

Dem. of Miami; born April 29, 1926 in Tallahassee; MS Univ. of Michigan; Miami-Dade Community College administrator; member, State House, State Senate 1982-92; first elected to Congress in 1992—2nd term.

18th/ILEANA ROS-LEHTINEN ..... (202) 225-3931

Rep. of Miami; born July 15, 1952 in Havana, Cuba; MS Fla. International Univ., 1987; teacher; school administrator; member, State House 1982-86, State Senate 1986-89; first elected to Congress in 1989—4th term.

19th/HARRY JOHNSTON ..... (202) 225-3001

Dem. of West Palm Beach; born Dec. 2, 1931 in W. Palm Beach; LLB Univ. of Fla. Law School, 1958; member, State Senate 1974-86; attorney 1958-88; first elected to Congress in 1988—4th term.

20th/PETER DEUTSCH ..... (202) 225-7931

Dem. of Lauderhill; born April 1, 1957 in Bronx, NY; JD Yale Law School, 1982; BA Swarthmore College, 1979; attorney; member, State House 1982-92; first elected to Congress in 1992—2nd term.

21st/LINCOLN DIAZ-BALART ..... (202) 225-4211

Rep. of Miami; born Aug. 13, 1954 in Havana, Cuba; JD Case Western Reserve Univ. Law School, 1979; attorney; member, State Senate 1986-92; first elected to Congress in 1992—2nd term.

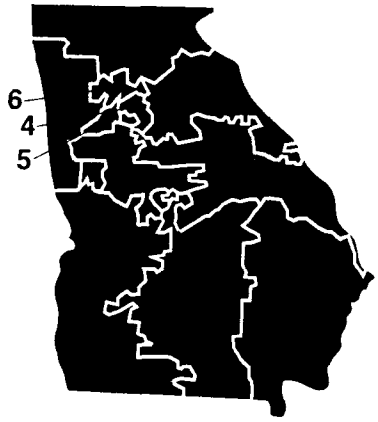
22nd/CLAY SHAW ..... (202) 225-3026

Rep. of Fort Lauderdale; born Apr. 19, 1939 in Miami; JD Stetson Univ. College of Law, 1966; former practicing attorney; former C.P.A.; Fort Lauderdale vice mayor 1973-75, mayor 1975-80; first elected to Congress in 1980—8th term.

23rd/ALCEE HASTINGS ..... (202) 225-1313

Dem. of Miami; born Sept. 5, 1936 in Altomonte Springs; JD Florida A&M Univ. College of Law, 1963; BA Fisk Univ., 1958; attorney, former federal judge; first elected to Congress in 1992—2nd term.

GEORGIA



Number of House Seats:
7 Republicans 4 Democrats

GOVERNOR

ZELL MILLER

Dem.; born Feb. 24, 1932 in Young Harris; MA Univ. of Ga.; mayor of Young Harris; professor; writer; member, State Senate 1960-64; exec. secy. to the governor 1968-71; lieutenant governor 1975-90; elected governor in 1990; re-elected in 1994, term ends 1999.

SENATORS

SAM NUNN ..... (202) 224-3521

Dem. of Perry; senior senator; born Sept. 8, 1938 in Perry; LLB Emory Univ., 1962; attorney and farmer; member, State House 1968-72; elected to the U.S. Senate in 1972, 4th term ends in 1997.

PAUL COVERDELL ..... (202) 224-3643

Rep. of Atlanta; junior senator; born Jan. 20, 1939 in Des Moines, IA; BA journalism, Univ. of Missouri, 1961; businessman; member, State Senate 1970-89; Director, Peace Corps 1989; elected to the U.S. Senate in 1992, 1st term ends in 1999.

DISTRICTS/REPRESENTA

1st/JACK KINGSTON ..... (2

Rep. of Savannah; 1955 in Bryan, TX; Georgia, 1977; insur; member, State Hous elected to Congress term.

2nd/SANFORD BISHOP ..... (2

Dem. of Columbus; 4, 1947 in Mobile, A Univ. School of L Morehouse College ney; member, State 90, State Senate 1990- to Congress in 1992

LTV Steel: Cedar S

3rd/MICHAEL COLLINS ..... (

Rep. of Jackson; bor in Jackson; trucking c member State Senate elected to Congress term.

4th/JOHN LINDER ..... (

Rep. of Atlanta; bor 1942 in Deer River, of Minnesota, 1967 dentist; member, St 80, 1982-90; first gress in 1992—2nd

5th/JOHN LEWIS .....

Dem. of Atlanta; bo in Troy, AL; BA Fi chairman, Studen Coordinating Com dir., Voter Educatio 76; assoc. dir., AC member, Atlanta ci 86; first elected to Co 5th term.

A

ouse seats:
4 Democrats

OR

ER

Dem.; born Feb. 24, 1932 in Young Harris; MA Univ. of Ga.; mayor of Young Harris; professor; writer; member, State Senate 1960-64; exec. secy. to the governor 1968-71; lieutenant governor 1975-90; elected governor in 1990; re-elected in 1994, term ends 1999.

S

..... (202) 224-3521

Dem. of Perry; senior senator; born Sept. 8, 1938 in Perry; LLB Emory Univ., 1962; attorney and farmer; member, State House 1968-72; elected to the U.S. Senate in 1972, 4th term ends in 1997.

RDELL ..... (202) 224-3643

f Atlanta; junior senator; born), 1939 in Des Moines, IA; urnalism, Univ. of Missouri, 1961; businessman; member, State Senate 1970-89; Director, Peace Corps 1989; elected to the U.S. Senate in 1992, 1st term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/JACK KINGSTON ..... (202) 225-5831

Rep. of Savannah; born April 24, 1955 in Bryan, TX; AB Univ. of Georgia, 1977; insurance salesman; member, State House 1984-92; first elected to Congress in 1992—2nd term.

2nd/SANFORD BISHOP ..... (202) 225-3631

Dem. of Columbus; born February 4, 1947 in Mobile, AL; LLD Emory Univ. School of Law, 1971; BA Morehouse College, 1968; attorney; member, State House 1976-90, State Senate 1990-92; first elected to Congress in 1992—2nd term.

LTV Steel: Cedar Springs

3rd/MICHAEL COLLINS ..... (202) 225-5901

Rep. of Jackson; born Oct. 15, 1944 in Jackson; trucking company owner; member State Senate 1988-92; first elected to Congress in 1992—2nd term.

4th/JOHN LINDER ..... (202) 225-4272

Rep. of Atlanta; born September 9, 1942 in Deer River, MN; DDS Univ. of Minnesota, 1967; businessman; dentist; member, State House 1976-80, 1982-90; first elected to Congress in 1992—2nd term.

5th/JOHN LEWIS ..... (202) 225-3801

Dem. of Atlanta; born Feb. 21, 1940 in Troy, AL; BA Fisk Univ., 1967; chairman, Student Non-Violent Coordinating Committee 1963-66; dir., Voter Education Project 1966-76; assoc. dir., ACTION 1977-80; member, Atlanta city council 1982-86; first elected to Congress in 1986—5th term.

6th/NEWT GINGRICH ..... (202) 225-4501

Rep. of North Atlanta; born June 17, 1943 in Harrisburg, PA; PhD Tulane Univ., 1971; teacher, West Ga. College 1970-78; first elected to Congress in 1978—9th term.

7th/BOB BARR ..... (202) 225-2931

Rep. of Smyrna; born Nov. 5, 1948 in Iowa City, IA; JD Georgetown; MA George Washington University; attorney; CIA analyst 1970-78; U.S. Attorney 1986-89; director, U.S. Attorney General's Public Corruption Subcommittee 1987-88; candidate for U.S. Senate 1992; elected to Congress in 1994—1st term.

8th/SAXBY CHAMBLISS ..... (202) 225-6531

Rep. of Moultrie; born Nov. 10, 1943 in Warrenton, NC; JD University of Tennessee; attorney; businessman; served on the Moultrie-Colquit County Economic Development Authority and Colquitt County Economic Development Corporation; candidate for U.S. House, 1992; elected to Congress in 1994—1st term.

9th/NATHAN DEAL ..... (202) 225-5211

Dem. of Gainesville; born Aug. 25, 1942 in Millen; JD Mercer Univ. Law School, 1966; Hall County attorney, former juvenile court judge; member, State Senate 1980-92; first elected to Congress in 1992—2nd term.

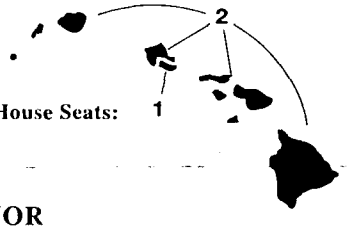
10th/CHARLES NORWOOD ..... (202) 225-4101

Rep. of Augusta; born July 27, 1941 in Valdosta; DDS Georgetown University, 1969; BS Georgia Southern University, 1964; dentist; Captain, U.S. Army 1967-69; president, Georgia Dental Association; elected to Congress in 1994—1st term.

11th/CYNTHIA McKINNEY ..... (202) 225-1605

Dem. of Lithonia; born March 17, 1955 in Atlanta; BA Univ. of Southern California; educator; member, State House 1988-92; first elected to Congress in 1992—2nd term.

HAWAII



Number of House Seats:
2 Democrats

GOVERNOR

BENJAMIN J. CAYETANO

Dem. of Honolulu; born Nov. 14, 1939 in Honolulu, HI; JD Loyola of Los Angeles, 1971; BA UCLA, 1968; attorney; State Representative 1975-78; State Senate 1979-86; Lieutenant Govenor 1990-94; elected governor in 1994, term ends 1998.

SENATORS

NIEL K. INOUYE ..... (202) 224-3934

Dem. of Honolulu; senior senator; born Sept. 7, 1924 in Honolulu; JD George Washington Univ., 1952; member, Territorial Legislature 1954-59; member of Congress 1959-62; elected to the U.S. Senate in 1962, 6th term ends in 1999.

DANIEL K. AKAKA ..... (202) 224-6361

Dem. of Honolulu; junior senator; born Sept. 11, 1924 in Honolulu; Master of Education, Univ. of Hawaii, 1966; school principal 1963-68; director, Hawaii Office of Economic Opportunity; member of Congress 1977-90; elected to the U.S. Senate in 1990, 2nd term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/NEIL ABERCROMBIE ..... (202) 225-2726

Dem. of Honolulu; born June 26, 1938 in Buffalo, NY; PhD, Univ. of Hawaii, 1974; college professor; member, State House 1974-78, State Senate 1978-86; member of U.S. House 1986-87; member, city council 1988-90; re-elected to Congress in 1990—4th term.

2nd/PATSY MINK ..... (202) 225-4906

Dem. of Honolulu; born Dec. 6, 1927 in Paia; JD Univ. of Chicago, 1951; member, Hawaii Territorial House 1956-58, Senate 1958-59; State Senate 1962-64; member of U.S. House 1965-77; member, Honolulu City Council 1983-87; re-elected to Congress in 1990—10th term.

IDAHO

Number of House Seats:
2 Republicans

GOVERNOR

PHIL BATT

Rep. of Wilder; born March 4, 1927 in Wilder, ID; University of Idaho; U.S. Army Air Force; farmer; State Representative 1965-67; State Senator 1967-78; six years as Majority Leader, two as President Pro Tempore; Lt. Governor 1978-82; candidate for governor 1982; chair, State GOP 1992; elected governor in 1994, term ends 1998.

SENATORS

LARRY CRAIG ..... (

Rep. of Midvale; s
born July 20, 1945 i
Univ. of Idaho, 19
rancher; member, Sta
80; member of U.S
91; elected to the
1990, 1st term ends

DIRK KEMPTHORNE ..... (

Rep. of Boise; junio
Oct. 29, 1951 in S.
BA University of Idai
of Boise 1986-92,
manager; administr
the U.S. Senate in
ends in 1999.

DISTRICTS/REPRESENTA

1st/HELEN CHENOWETH ..... (

Rep. of Boise; born
Topeka, KS; Whit
medical and legal ma
instructor at the Uni
School of Law; envir
consultant; GOP Stat
77; chief of staff to
Steve Symms, R-Idal
to Congress in 199

2nd/MIKE CRAPO ..... (

Rep. of Idaho Falls
1951 in Idaho Fal
Law School, 1977
Young Univ., 1973; a
State Senate 1984-
to Congress in 199

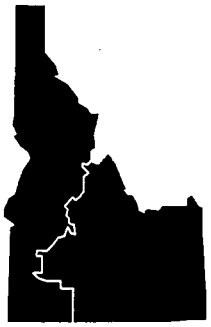
S/REPRESENTATIVES

RCROMBIE ..... (202) 225-2726

Dem. of Honolulu; born June 26, 1938 in Buffalo, NY; PhD, Univ. of Hawaii, 1974; college professor; member, State House 1974-78, State Senate 1978-86; member of U.S. House 1986-87; member, city council 1988-90; re-elected to Congress in 1990—4th term.

INK ..... (202) 225-4906

Dem. of Honolulu; born Dec. 6, 1927 in Paia; JD Univ. of Chicago, 1951; member, Hawaii Territorial P 1956-58, Senate 1958-59; nate 1962-64; member of use 1965-77; member, Honolulu City Council 1983-87; re-elected to Congress in 1990—10th term.



R

Rep. of Wilder; born March 4, 1927 in Wilder, ID; University of Idaho; U.S. Army Air Force; farmer; State Representative 1965-67; State Senator 1967-78; six years as Majority Leader, tv President Pro Tempore; Lt. 1978-82; candidate for g 1982; chair, State GOP 1992; elected governor in 1994, term ends 1998.

SENATORS

LARRY CRAIG ..... (202) 224-2752

Rep. of Midvale; senior senator; born July 20, 1945 in Council; BA Univ. of Idaho, 1969; farmer and rancher; member, State Senate 1975-80; member of U.S. House 1980-91; elected to the U.S. Senate in 1990, 1st term ends in 1997.

DIRK KEMPTHORNE ..... (202) 224-6142

Rep. of Boise; junior senator; born Oct. 29, 1951 in San Diego, CA; BA University of Idaho, 1975; mayor of Boise 1986-92, public affairs manager; administrator; elected to the U.S. Senate in 1992, 1st term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/HELEN CHENOWETH ..... (202) 225-6611

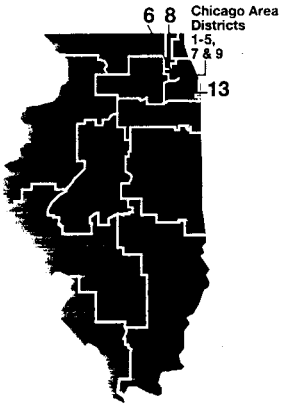
Rep. of Boise; born Jan. 27, 1938 in Topeka, KS; Whitworth College; medical and legal management; guest instructor at the University of Idaho School of Law; environmental policy consultant; GOP State Director 1975-77; chief of staff to then U.S. Rep. Steve Symms, R-Idaho, 1977; elected to Congress in 1994—1st term.

2nd/MIKE CRAPO ..... (202) 225-5531

Rep. of Idaho Falls; born May 20, 1951 in Idaho Falls; JD Harvard Law School, 1977; BA Brigham Young Univ., 1973; attorney; member, State Senate 1984-92; first elected to Congress in 1992—2nd term.

ILLINOIS

Number of House Seats:
10 Republicans
10 Democrats



GOVERNOR

JIM EDGAR

Rep. of Springfield; born July 22, 1946 in Vinita, OK; BA Eastern Illinois Univ., 1968; member, State House 1976-79; dir. of legis. affairs for governor 1979-80; secy. of state 1981-91; elected governor in 1990; re-elected in 1994, term ends 1999.

SENATORS

PAUL SIMON ..... (202) 224-2152

Dem. of Makanda; senior senator; born Nov. 29, 1928 in Eugene, OR; Dana College; newspaper publisher 1948-66; member State House 1955-62, State Senate 1963-68; lt. governor 1969-72; member of U.S. House 1975-84; elected to the U.S. Senate in 1984, 3rd term ends in 1997.

CAROL MOSELEY-BRAUN ..... (202) 224-2854

Dem. of Chicago; junior senator; born Aug. 16, 1947 in Chicago; JD University of Chicago Law School 1972; University of Illinois at Chicago; member, State House 1978-87; Cook County Recorder of Deeds 1987-92; elected to the U.S. Senate in 1992, 1st term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/BOBBY RUSH ..... (202) 225-4372

Dem. of Chicago; born Nov. 23, 1946 in Albany, GA; BA Roosevelt Univ.; community activist; Chicago alderman 1983-92; first elected to Congress in 1992—2nd term.

2nd/MEL REYNOLDS ..... (202) 225-0773

Dem. of Chicago; born Jan. 8, 1952 in Mound Bayou; JDS Oxford Univ. in England, 1981; MPA Harvard University; city alderman; professor; community activist; first elected to Congress in 1992—2nd term.

3rd/WILLIAM O. LIPINSKI ..... (202) 225-5701

Dem. of Chicago; born Dec. 22, 1937 in Chicago; attended Loras College; city alderman 1975-82; Chicago Park District supervisor, 17 years; first elected to Congress in 1982—7th term.

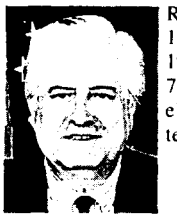
4th/LUIS GUTIERREZ ..... (202) 225-8203

Dem. of Chicago; born Dec. 10, 1953 in Chicago; BA Northeastern Illinois Univ. in Chicago, 1975; educator; city alderman 1986-92; first elected to Congress in 1992—2nd term.

5th/MICHAEL FLANAGAN ..... (202) 225-4061

Rep. of Chicago; born Nov. 9, 1962 in Chicago; JD Loyola University, 1988; U.S. Army; attorney; volunteer with AIDS patients, Howard Brown Memorial Center; elected to Congress in 1994—1st term.

6th/HENRY J. HYDE ..... (202) 225-4561



Rep. of Bensenville; born April 18, 1924 in Chicago; JD Loyola Univ., 1949; member, State Assembly 1967-74; majority leader 1971-72; first elected to Congress in 1974—11th term.

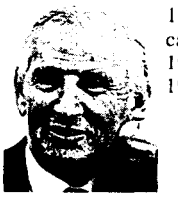
7th/CARDISS COLLINS ..... (202) 225-5006

Dem. of Chicago; born Sept. 24, 1931 in St. Louis, MO; attended Northwestern Univ.; revenue auditor, Ill. Dept. of Revenue; Committeewoman of Chicago's 24th ward; first elected to Congress in 1973—12th term.

8th/PHILIP M. CRANE ..... (202) 225-3711

Rep. of Mt. Prospect; born Nov. 3, 1930 in Chicago; PhD Indiana Univ.; LLD Grove City College, 1975; taught U.S. and Latin American History at Bradley Univ., Peoria, 1963-67; first elected to Congress in 1969—14th term.

9th/SIDNEY R. YATES ..... (202) 225-2111

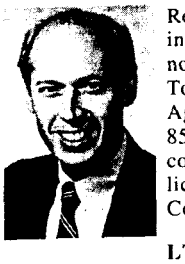


Dem. of Chicago; born Aug. 27, 1909 in Chicago; JD Univ. of Chicago, 1933; attorney-at-law since 1933; first elected to Congress in 1948—16th term.

10th/JOHN E. PORTER ..... (202) 225-4835

Rep. of Winnetka; born June 1, 1935 in Evanston; JD Univ. of Mich. Law School, 1961; practicing attorney 1961-63; member, State Assembly 1973-79; first elected to Congress in 1980—9th term.

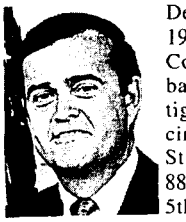
11th/JERRY WELLER ..... (2



Rep. of Morris; bor in Streator; BS Uni nois, 1979; aide to Tom Corcoran 1977- Agriculture Secy. Jol 85; State Represent co-chairman, State lican Policy Commi Congress in 1994—

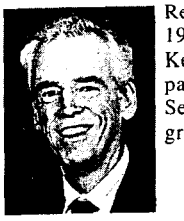
LTV Steel: Chicag

12th/JERRY COSTELLO ..... (



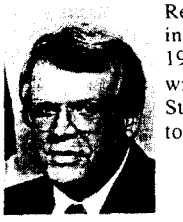
Dem. of Belleville; 1949 in East St. Louis College of the Sacr bailiff; deputy sheri tigator, state attorne circuit probation dir St. Clair Cty. Board 88; first elected to Co 5th term.

13th/HARRIS W. FAWELL ..... (



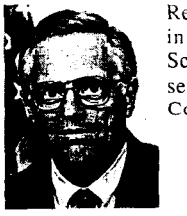
Rep. of Naperville; 1929 in West Chicag Kent College of La partner of law firm; Senate 1963-77; first gress in 1984—6th

14th/J. DENNIS HASTERT ..... (



Rep. of Yorkville; b in Aurora; MS Nor 1967; high school te wrestling coach 19 State Assembly 1981 to Congress in 198

15th/THOMAS W. EWING .....



Rep. of Pontiac; bo in Atlanta; JD. Joh School, 1968; mer sembly 1974-91; Congress in 1991—

I. HYDE ..... (202) 225-4561

Rep. of Bensenville; born April 18, 1924 in Chicago; JD Loyola Univ., 1949; member, State Assembly 1967-74; majority leader 1971-72; first elected to Congress in 1974—11th term.

COLLINS ..... (202) 225-5006

Dem. of Chicago; born Sept. 24, 1931 in St. Louis, MO; attended Northwestern Univ.; revenue auditor, Ill. Dept. of Revenue; Committeewoman of Chicago's 24th ward; [illegible] elected to Congress in 1973—[illegible]rm.

. CRANE ..... (202) 225-3711

Rep. of Mt. Prospect; born Nov. 3, 1930 in Chicago; PhD Indiana Univ.; LLD Grove City College, 1975; taught U.S. and Latin American History at Bradley Univ., Peoria, 1963-67; first elected to Congress in 1969—14th term.

. YATES ..... (202) 225-2111

Dem. of Chicago; born Aug. 27, 1909 in Chicago; JD Univ. of Chicago, 1933; attorney-at-law since 1933; first elected to Congress in 1948—16th term.

PORTER ..... (202) 225-4835

Rep. of Winnetka; born June 1, 1935 in Evanston; JD Univ. of Mich. Law School, 1961; practicing attorney 1961-63; member, State Assembly 1973-79; first elected to Congress in 1980—9th term.

11th/JERRY WELLER ..... (202) 225-3635

Rep. of Morris; born July 7, 1957 in Streator; BS University of Illinois, 1979; aide to Congressman Tom Corcoran 1977-78; aide to U.S. Agriculture Secy. John Block 1981-85; State Representative 1989-94; co-chairman, State House Republican Policy Committee; elected to Congress in 1994—1st term.

LTV Steel: Chicago

12th/JERRY COSTELLO ..... (202) 225-5661

Dem. of Belleville; born Sept. 25, 1949 in East St. Louis; BA Maryville College of the Sacred Heart; court bailiff; deputy sheriff; chief investigator, state attorney's office; state circuit probation director 1976-80; St. Clair Cty. Board chairman 1980-88; first elected to Congress in 1988—5th term.

13th/HARRIS W. FAWELL ..... (202) 225-3515

Rep. of Naperville; born March 25, 1929 in West Chicago; JD Chicago-Kent College of Law, 1952; senior partner of law firm; member, State Senate 1963-77; first elected to Congress in 1984—6th term.

14th/J. DENNIS HASTERT ..... (202) 225-2976

Rep. of Yorkville; born Jan. 2, 1942 in Aurora; MS Northern Ill. Univ., 1967; high school teacher, football, wrestling coach 1965-81; member, State Assembly 1981-86; first elected to Congress in 1986—5th term.

15th/THOMAS W. EWING ..... (202) 225-2371

Rep. of Pontiac; born Sept. 19, 1935 in Atlanta; JD, John Marshall Law School, 1968; member, State Assembly 1974-91; first elected to Congress in 1991—3rd term.

16th/ DONALD MANZULLO ..... (202) 225-5676

Rep. of Byron; born March 24, 1944 in Rockford; JD Marquette, 1970; BA American Univ., 1967; attorney; first elected to Congress in 1992—2nd term.

17th/LANE EVANS ..... (202) 225-5905

Dem. of Rock Island; born August 4, 1951 in Rock Island; JD Georgetown University, 1978; U.S. Marine Corps 1969-71; attorney; Community Legal Clinic 1981-82; first elected to Congress in 1982-7th term.

18th/RAY LAHOOD ..... (202) 225-6201

Rep. of Peoria; born Dec. 6, 1945 in Peoria; BS Bradley University, 1971; teacher; public official; A.A to Congressman Tom Railsback; A.A. and chief of staff for Congressman Bob Michel; State Representative 1982-83; elected to Congress in 1994—1st term.

LTV Steel: Hennepin

19th/GLENN POSHARD ..... (202) 225-5201

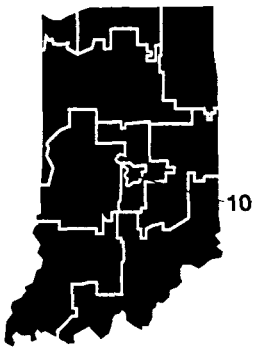
Dem. of Carterville; born Oct. 30, 1945 in Herald; PhD, Southern Ill. Univ., 1984; director, Regional Education Center; member, State Senate 1984-89; first elected to Congress in 1988—4th term.

20th/RICHARD J. DURBIN ..... (202) 225-5271

Dem. of Springfield; born Nov. 21, 1944 in East St. Louis; JD Georgetown Univ. Law School, 1969; chief legal counsel to lt. gov. 1969-72; State Senate parliamentarian 1972-77; atty; first elected to Congress in 1982—7th term.

INDIANA

Number of House Seats:
6 Republicans
[illegible]mocrats



GOVERNOR

EVAN BAYH

Dem.; born Dec. 26, 1955 in Terre Haute; JD Univ. of Va., 1981; attorney, 1983-86; secretary of state, 1986-89; elected governor in 1988, re-elected 1992, term ends 1997.

SENATORS

RICHARD G. LUGAR ..... (202) 224-4814

Rep. of Indianapolis; senior senator; born April 4, 1932 in Indianapolis; Rhodes Scholar, Pembroke College, England, MA, 1956; v.p., Thomas L. Green & Co., food equipment mfg.; mayor, Indianapolis 1968-75; elected to the U.S. Senate in 1976, 4th term ends in 2001.

DAN COATS ..... (202) 224-5623

Rep. of Fort Wayne; junior senator; born May 16, 1943 in Jackson, MI; JD Ind. Univ. Law School, 1971; member of U.S. House 1981-88; appointed to the U.S. Senate; first elected to the U.S. Senate in 1990, 2nd term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/PETER J. VISCLOSKY ..... (202) 225-2461

Dem. of Merrillville; born Aug. 13, 1949 in Gary; LLM Georgetown Univ., 1982; JD Notre Dame, 1973; admin. asst. to Rep. Adam Benjamin 1976-82; attorney 1983-84; first elected to Congress in 1984—6th term.

LTV Steel: East Chicago

2nd/DAVID MCINTOSH ..... (202) 225-3021

Rep. of Muncie; born June 8, 1958 in San Francisco, CA; JD University of Chicago, 1983; BA Yale College, 1980; founder and co-chair of the Federalist Society; attorney; special assistant to Vice-President Quayle; exec.dir., President's Council on Competitiveness; elected to Congress in 1994—1st term.

3rd/TIMOTHY J. ROEMER ..... (202) 225-3915

Dem. of Mishawaka; born Oct. 30, 1956 in South Bend; PhD Univ. of Notre Dame, 1985; staff asst. to Rep. John Brademas 1978-79; legis. aide to Sen. Dennis DeConcini 1985-89; professor; first elected to Congress in 1990—3rd term.

4th/MARK EDWARD SOUDER ..... (202) 225-4436

Rep. of Grabill; born July 18, 1950 in Fort Wayne; MBA University of Notre Dame, 1974; businessman; GOP staff director for House Select Committee on Children, Youth and Families 1984-88; legislative director and chief of staff for Sen. Dan Coats 1989-93; elected to Congress in 1994—1st term.

5th/STEVE BUYER ..... (202) 225-5037

Rep. of Monticello; born Nov. 26, 1958 in Rensselaer; JD Valparaiso Univ. School of Law, 1984; BS The Citadel, 1980; attorney, 1980-84 Captain, U.S. Army; first elected to Congress in 1992—2nd term.

6th/DAN BURTON .....

Rep. of Indianapol
1938 in Indianapol
real estate; membe
terms, State Senat
elected to Congre
term.

7th/JOHN T. MYERS .....

Rep. of Covingto
1927 in Covingto
Univ., 1951; trust
Fountain Trust Co
Congress in 1966-

8th/JOHN N. HOSTETTLER .....

Rep. of Blairsvill
1961 in Evansville;
Institute of Techn
gineer, Southern Indi
Co.; volunteer n
sponsored food p
Congress in 1994-

9th/LEE H. HAMILTON .....

Dem. of Nashvill
1931 in Daytona
Univ. School of
elected to Congre
term.

10th/ANDREW JACOBS, JR. .....

Dem. of Indiana
24, 1932 in Indian
Univ., 1958; practi
64, 1973-74; mem
1965-72; re-elect
1974—11th term.

S/REPRESENTATIVES

VISCLOSKY ..... (202) 225-2461

Dem. of Merrillville; born Aug. 13, 1949 in Gary; LLM Georgetown Univ., 1982; JD Notre Dame, 1973; admin. asst. to Rep. Adam Benjamin 1976-82; attorney 1983-84; first elected to Congress in 1984—6th term.

LTV Steel: East Chicago

CINTOSH ..... (202) 225-3021

Rep. of Muncie; born June 8, 1958 in San Francisco, CA; JD University of Chicago, 1983; BA Yale C[illegible], 1980; founder and co-chair [illegible]ederalist Society; attorney; [illegible] assistant to Vice-President Quayle; exec.dir., President's Council on Competitiveness; elected to Congress in 1994—1st term.

J. ROEMER ..... (202) 225-3915

Dem. of Mishawaka; born Oct. 30, 1956 in South Bend; PhD Univ. of Notre Dame, 1985; staff asst. to Rep. John Brademas 1978-79; legis. aide to Sen. Dennis DeConcini 1985-89; professor; first elected to Congress in 1990—3rd term.

VARD

..... (202) 225-4436

Rep. of Grabill; born July 18, 1950 in Fort Wayne; MBA University of Notre Dame, 1974; businessman; GOP staff director for House Select Committee on Children, Youth and Families 1984-88; legislative director and chief of staff for Sen. Dan Coats 1989-93; elected to Congress in 1994—1st term.

/ER ..... (202) 225-5037

Rep. of Monticello; born Nov. 26, 1958 in Rensselaer; JD Valparaiso U[illegible] School of Law, 1984; BS The [illegible] 1980; attorney, 1980-84 [illegible] U.S. Army; first elected to Congress in 1992—2nd term.

6th/DAN BURTON ..... (202) 225-2276

Rep. of Indianapolis; born June 21, 1938 in Indianapolis; insurance and real estate; member, State House, 3 terms, State Senate, 2 terms; first elected to Congress in 1982—7th term.

7th/JOHN T. MYERS ..... (202) 225-5805

Rep. of Covington; born Feb. 8, 1927 in Covington; BS Ind. State Univ., 1951; trust officer with The Fountain Trust Co.; first elected to Congress in 1966—15th term.

8th/JOHN N. HOSTETTLER ..... (202) 225-4636

Rep. of Blairsville; born July 19, 1961 in Evansville; BS Rose-Hulman Institute of Technology, 1983; engineer, Southern Indiana Gas & Electric Co.; volunteer manager, church sponsored food pantry; elected to Congress in 1994—1st term.

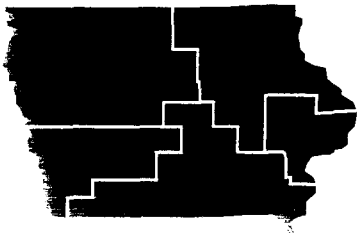
9th/LEE H. HAMILTON ..... (202) 225-5315

Dem. of Nashville; born April 20, 1931 in Daytona Beach; JD Ind. Univ. School of Law, 1956; first elected to Congress in 1964—16th term.

10th/ANDREW JACOBS, JR. ..... (202) 225-4011

Dem. of Indianapolis; born Feb. 24, 1932 in Indianapolis; LLB Ind. Univ., 1958; practicing lawyer 1958-64, 1973-74; member of U.S. House 1965-72; re-elected to Congress in 1974—11th term.

IOWA



Number of House Seats:
5 Republicans

GOVERNOR

TERRY BRANSTAD

Rep. of Terrace Hill; born Nov. 17, 1946 in Leland; JD Drake Univ. Law School, 1974; attorney; member, State House 1972-77; lt. governor 1978-82; elected governor in 1982, re-elected in 1986, 1990, and 1994, term ends 1999.

SENATORS

CHARLES E. GRASSLEY ..... (202) 224-3744

Rep. of New Hartford; senior senator; born Sept. 17, 1933 in New Hartford; MA Univ. of Northern Iowa, 1956; farmer; member, state House 1959-74; member of U.S. House 1975-80; elected to the U.S. Senate in 1980, 3rd term ends in 1999.

TOM HARKIN ..... (202) 224-3254

Dem. of Cumming; junior senator; born Nov. 19, 1939 in Cumming; JD Catholic Univ. of America, 1972; admitted to the Iowa Bar in 1972; member of U.S. House 1975-84; elected to the U.S. Senate in 1984, 2nd term ends in 1997.

DISTRICTS/REPRESENTATIVES

1st/JIM LEACH ..... (202) 225-6576

Rep. of Davenport; born Oct. 15, 1942 in Davenport; MA School of Advanced International Studies, Johns Hopkins, 1966; foreign service officer 1968-69, 1970-73; president, Flamegas Companies 1973-76; first elected to Congress in 1976—10th term.

2nd/JIM NUSSLE ..... (202) 225-2911

Rep. of Manchester; born June 27, 1960 in Des Moines; JD Drake Univ., 1985; attorney; Delaware Cty. atty. 1986-90; first elected to Congress in 1990—3rd term.

3rd/JIM ROSS LIGHTFOOT ..... (202) 225-3806

Rep. of Shenandoah; born Sept. 27, 1938 in Sioux City; city commissioner, Corsicana, Texas 1974-76; businessman; radio station farm editor and broadcaster; first elected to Congress in 1984—6th term.

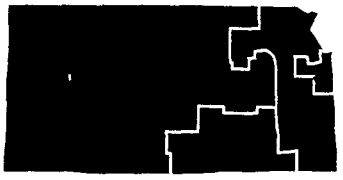
4th/GREG GANSKE ..... (202) 225-4426

Rep. of Des Moines; born March 31, 1949 in New Hampton; MD University of Iowa; BS University of Iowa, 1972; physician; reconstructive surgeon; Lt. Colonel in the U.S. Army Reserve; farm manager; no prior elected office; elected to Congress in 1994—1st term.

5th/TOM LATHAM ..... (202) 225-5476

Rep. of Alexander; born July 14, 1948 in Hampton; Iowa State University; businessman; insurance agent; vice-president and co-owner, Latham Seed Co.; member, Farm Bureau, American Soy Bean Assn., American Seed Trade Assn.; State GOP Secretary 1990-94; elected to Congress in 1994—1st term.

KANSAS



Number of House Seats:
4 Republicans

GOVERNOR

BILL GRAVES

Rep. of Lenexa; born Jan. 9, 1953 in Salina, KS; BA Kansas Wesleyan University; businessman; public official; member, National Association of Secretaries of State; Assistant Secretary of State 1985; Secretary of State 1987-94; elected governor in 1994, term ends 1999.

SENATORS

ROBERT DOLE ..... (202) 224-6521

Rep. of Russell; senior senator; born July 22, 1923 in Russell; LLB Washburn, 1952; member, State House 1951-53; Russell Cty. atty. 1953-61; member of U.S. House 1961-68; elected to the U.S. Senate in 1968, 5th term ends in 1999.

NANCY L. KASSEBAUM ..... (202) 224-4774

Rep. of Burdick; junior senator; born July 29, 1932 in Topeka; MA Univ. of Mich., 1956; v.p., KFH Radio; elected to the U.S. Senate in 1978, 3rd term ends in 1997.

DISTRICTS/REPRESENT

1st/PAT ROBERTS .....

Rep. of Dodge City 1936 in Topeka; B Univ., 1958; news journalist; admin. as Carlson, and then Sebelius 1968-80; Congress in 1980-

2nd/SAM BROWNBACK ..... (

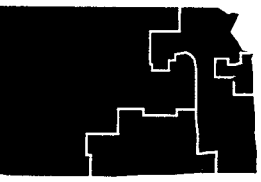
Rep. of Topeka; bor in Garnett; JD Univ sas; administrator; l torney; teacher; aut the Intergovernme Comm. to the U.S. sentative; Riley Co chairman 1984-86; Board of Agriculture to Congress in 1994

3rd/JAN MEYERS ..... (

Rep. of Overland P 20, 1928 in Lincoln braska Univ., 1951; me Park City Council ber, State Senate 1972 to Congress in 1984

4th/TODD TIAHRT ..... (2

Rep. of Goddard; 1951 in Vermillion, SI west Missouri State U Evangel College, 19 for Kansas Newman Evangel College; m cialist; Executive Co GOP; State Senator 1 to Congress in 1994



se Seats:

R

Lenexa; born Jan. 9, 1953 in Salina, KS; BA Kansas Wesleyan University; businessman; public official; member, National Association of Secretaries of State; Assistant Secretary of State 1985; Secretary of State 1987-94; elected governor in 1994, term ends 1999.

E ..... (202) 224-6521

Rep. of Russell; senior senator; born July 22, 1923 in Russell; LLB Washburn, 1952; member, State House 1951-53; Russell Cty. atty. 1953-61; member of U.S. House 1961-68; elected to the U.S. Senate in 1968, 5th term ends in 1999.

SEBAUM ..... (202) 224-4774

Rep. of Burdick; junior senator; born July 29, 1932 in Topeka; MA Univ. of Mich., 1956; v.p., KFH Radio; elected to the U.S. Senate in 1978, 3rd term ends in 1997.

DISTRICTS/REPRESENTATIVES

1st/PAT ROBERTS ..... (202) 225-2715

Rep. of Dodge City; born April 20, 1936 in Topeka; BA Kansas State Univ., 1958; newspaper and radio journalist; admin. asst. to Sen. Frank Carlson, and then to Rep. Keith Sebelius 1968-80; first elected to Congress in 1980—8th term.

2nd/SAM BROWNBACK ..... (202) 225-6601

Rep. of Topeka; born Sept. 12, 1956 in Garnett; JD University of Kansas; administrator; broadcaster; attorney; teacher; author; served on the Intergovernmental Advisory Comm. to the U.S. Trade Representative; Riley County GOP vice chairman 1984-86; Secretary State Board of Agriculture 1986-93; elected to Congress in 1994—1st term.

3rd/JAN MEYERS ..... (202) 225-2865

Rep. of Overland Park; born July 20, 1928 in Lincoln, NE; BA Nebraska Univ., 1951; member, Overland Park City Council 1967-72; member, State Senate 1972-84; first elected to Congress in 1984—6th term.

4th/TODD TIAHRT ..... (202) 225-6216

Rep. of Goddard; born June 15, 1951 in Vermillion, SD; MBA Southwest Missouri State University; BA Evangel College, 1975; instructor for Kansas Newman College and Evangel College; marketing specialist; Executive Committee State GOP; State Senator 1991-94; elected to Congress in 1994—1st term.

KENTUCKY

Number of House Seats:
4 Republicans 2 Democrats

GOVERNOR

BRERETON JONES

Dem. of Frankfort; born June 27, 1939 in Point Pleasant, WV; BA Univ. of Va; home builder; farmer; founder of the Kentucky Health Care Access Foundation; elected lt. governor in 1987; elected governor in 1991, term ends 1995.

SENATORS

WENDELL H. FORD ..... (202) 224-4343

Dem. of Owensboro; senior senator; born Sept. 8, 1924 in Owensboro; attended Univ. of Ky.; member, State Senate 1965-67; lt. governor 1967-71; governor 1971-74; elected to the U.S. Senate in 1974, 4th term ends in 1999.

MITCH McCONNELL ..... (202) 224-2541

Rep. of Louisville; junior senator; born Feb. 20, 1942 in Sheffield, AL; JD from Univ. of Ky., 1967; chief legis. asst. to U.S. Senator; deputy asst. U.S. atty. general; judge executive, Jefferson Cty. 1977-84; elected to the U.S. Senate in 1984, 2nd term ends in 1997.

DISTRICTS/REPRESENTATIVES

1st/EDWARD WHITFIELD ..... (202) 225-3115

Rep. of Hopkinsville; born May 25, 1943 in Hopkinsville; JD University of Kentucky, 1969; BS UKY, 1965; 1st Lt., U.S. Army; attorney; businessman; State Representative 1975-76; counsel to Chairman, U.S. Interstate Commerce Commission 1991-93; elected to Congress in 1994—1st term.

2nd/RON LEWIS ..... (202) 225-3501

Rep. of Elizabethtown; born September 14, 1946 in Greenup; BA University of Kentucky, 1969; MA Morehead State University, 1980; salesman; college teacher; Baptist Minister; first elected to Congress in special election 1994—2nd term.

3rd/MIKE WARD ..... (202) 225-5401

Dem. of Louisville; born Jan. 7, 1951 in White Plains, NY; BS University of Louisville; sales representative; political campaign management; advertising executive; special assistant to Louisville County Judge/Exec., 1985-89; State Representative 1989-93; elected to Congress in 1994—1st term.

4th/JIM BUNNING ..... (202) 225-3465

Rep. of Southgate; born Oct. 23, 1931 in Southgate; BS Xavier Univ. (Cincinnati), 1953; professional baseball player, Detroit Tigers, Philadelphia Phillies 1950-71; investment broker; agent for prof. athletes; member, Ft. Thomas City Council 1977-79; member, State Senate 1979-83; first elected to Congress in 1986—5th term.

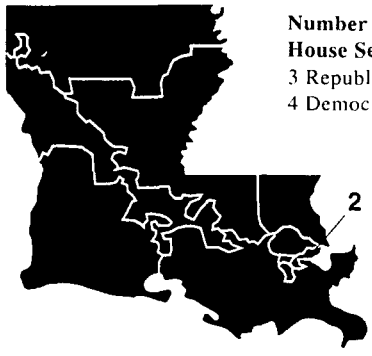
5th/HAROLD ROGERS ..... (202) 225-4601

Rep. of Somerset; born Dec. 31, 1937 in Barrier; LLB Univ. of Ky., 1964; practicing attorney in Somerset; Commonwealth Atty. for Ky.'s 28th Judicial District; first elected to Congress in 1980—8th term.

6th/SCOTTY BAESLER ..... (202) 225-4706

Dem. of Lexington; born July 9, 1941 in Lexington; JD Univ. of Kentucky Law School, 1966; BS Univ. of Kentucky, 1963; attorney; mayor of Lexington 1981-92; first elected to Congress in 1992—2nd term.

LOUISIANA



Number of House Seats:
3 Republicans
4 Democrats

GOVERNOR

EDWIN W. EDWARDS

Dem; born August 7, 1927 in Marksville; LLB La. State Univ.; practiced law 1949-64; member of U.S. House 1965-72; governor 1972-80 and 1983-87; re-elected governor in 1991, term ends 1995.

SENATORS

J. BENNETT JOHNSTON ..... (202) 224-5824

Dem. of Shreveport; senior senator; born June 10, 1932 in Shreveport; LLB La. State Univ., 1956; member, State House 1964-68, State Senate 1968-72; attorney; elected to the U.S. Senate in 1972, 4th term ends in 1997.

JOHN B. BREAUX ..... (

Dem. of Crowley; j
born March 1, 1944
La. State Univ., 19
attorney 1967-68; st
Edwin Edwards 196
of U.S. House 1973
the U.S. Senate in 1
ends in 1999.

DISTRICTS/REPRESENTA

1st/ROBERT L. LIVINGSTON ... (

Rep. of Metairie; 1
1943 in Colorado S
Tulane Univ. Law
practiced law as a
U.S. atty. 1970-73
atty. 1974; asst. sta
1975-76; first elect
in 1977—10th term

2nd/WILLIAM J. JEFFERSON... (

Dem. of New Orlea
14, 1947 in Lake P
Harvard University La
legis. asst. to Sen. J. B
attorney; member, St
90; first elected to Co
3rd term.

3rd/W. J. "BILLY" TAUZIN ..... (

Dem. of Thibodaux
1943 in Chackbay;
Univ., 1967; pract
member, State Hous
elected to Congress
cial election—9th t

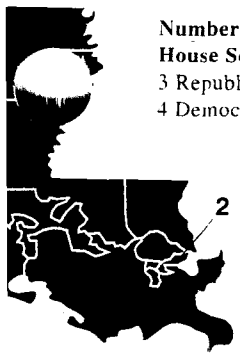
4th/CLEO FIELDS ..... (

Dem. of Baton Ro
22, 1962 in Baton Ro
Univ. Law School,
member, State Sena
elected to Congress
term.

BAESLER ..... (202) 225-4706

Dem. of Lexington; born July 9, 1941 in Lexington; JD Univ. of Kentucky Law School, 1966; BS Univ. of Kentucky, 1963; attorney; mayor of Lexington 1981-92; first elected to Congress in 1992—2nd term.

NA



Number of House Seats:
3 Republicans
4 Democrats

VARDS

Dem; born August 7, 1927 in Marksville; LLB La. State Univ.; practiced law 1949-64; member of U.S. House 1965-72; governor 1972-80 and 1983-87; re-elected governor in 1991, term ends 1995.

HNSTON ..... (202) 224-5824

Dem. of Shreveport; senior senator; born June 10, 1932 in Shreveport; LLB La. State Univ., 1956; member, State House 1964-68, State [illegible] 1968-72; attorney; elected [illegible] Senate in 1972, 4th term [illegible] 1997.

JOHN B. BREAUX ..... (202) 224-4623

Dem. of Crowley; junior senator; born March 1, 1944 in Crowley; JD La. State Univ., 1967; practicing attorney 1967-68; staff asst. to Rep. Edwin Edwards 1968-72; member of U.S. House 1973-86; elected to the U.S. Senate in 1986. 2nd term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/ROBERT L. LIVINGSTON ... (202) 225-3015

Rep. of Metairie; born April 30, 1943 in Colorado Springs, CO; JD Tulane Univ. Law School, 1968; practiced law as a trial atty.; asst. U.S. atty. 1970-73; asst. district atty. 1974; asst. state atty. general 1975-76; first elected to Congress in 1977—10th term.

2nd/WILLIAM J. JEFFERSON... (202) 225-6636

Dem. of New Orleans; born March 14, 1947 in Lake Providence; JD Harvard University Law School, 1972; legis. asst. to Sen. J. Bennett Johnston; attorney; member, State Senate 1980-90; first elected to Congress in 1990—3rd term.

3rd/W. J. "BILLY" TAUZIN ..... (202) 225-4031

Dem. of Thibodaux; born June 14, 1943 in Chackbay; JD La. State Univ., 1967; practicing attorney; member, State House 1971-79; first elected to Congress in a 1980 special election—9th term.

4th/CLEO FIELDS ..... (202) 225-8490

Dem. of Baton Rouge; born Nov. 22, 1962 in Baton Rouge; JD Southern Univ. Law School, 1987; attorney; member, State Senate 1986-92; first elected to Congress in 1992—2nd term.

5th/JIM McCRERY ..... (202) 225-2777

Rep. of Shreveport; born Sept. 18, 1949 in Shreveport; JD La. State Univ., 1975; attorney; asst. city atty., Shreveport; dist. manager for Rep. Buddy Roemer 1981-82, legis. dir. 1982-84; regional manager, governmental affairs, Georgia-Pacific Corp. 1984-88; first elected to Congress in 1988—5th term.

6th/RICHARD H. BAKER (202) 225-3901

Rep. of Baton Rouge; born May 22, 1948 in New Orleans; BA La. State Univ., 1971; member, State House 1972-86; first elected to Congress in 1986—5th term.

7th/JAMES HAYES ..... (202) 225-2031

Dem. of Lafayette; born Dec. 21, 1946 in Lafayette; JD Tulane Univ., 1971; businessman; attorney 1972-86; first elected to Congress in 1986—5th term.

MAINE

Number of House Seats:
1 Republican
1 Democrat

GOVERNOR

ANGUS S. KING, JR.

Ind. of Brunswick; born Mar. 31, 1944 in Alexandria, VA; JD University of Virginia, 1969; AB Dartmouth College, 1966; attorney; businessman; chief counsel, U.S. Senate Subcommittee on Alcoholism and Narcotics 1972-75; no prior elected office; elected governor in 1994, term ends 1999.

SENATORS

WILLIAM S. COHEN ..... (202) 224-2523

Rep. of Bangor; senior senator; born Aug. 28, 1940 in Bangor; LLB Boston Univ. Law School, 1965; asst. Penobscot Cty. atty. 1968-70; member of U.S. House 1973-79; elected to the U.S. Senate in 1978, 3rd term ends in 1997.

OLYMPIA SNOWE ..... (202) 224-5344

Rep. of Auburn; junior senator; born Feb. 21, 1947 in Augusta; BA University of Maine, 1969; businesswoman; director Superior Concrete Co.; member of State House 1973-77, State Senate 1977-79; member of U.S. House 1978-95; elected to the U.S. Senate in 1994, 1st term ends in 2001.

DISTRICTS/REPRESENTATIVES

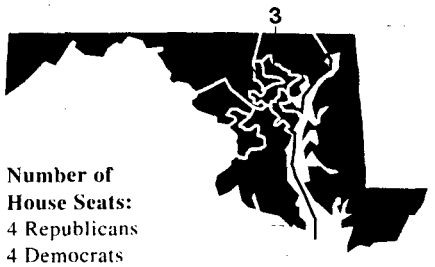
1st/JIM LONGLEY ..... (202) 225-6116

Rep. of Portland; born July 7, 1951 in Lewiston; JD University of Maine, 1980; AB Holy Cross, 1974; attorney; Lt. Col. U.S. Marine Corps Reserve 1976-79; business owner 1980-94; chairman, Gov. Longley Scholarship Foundation; elected to Congress in 1994—1st term.

2nd/JOHN BALDACCI ..... (202) 225-6306

Dem. of Bangor; born Jan. 30, 1955 in Bangor; BA University of Maine; restaurateur; Bangor City Councilman 1978-82; State Senator 1982-94; chair, Taxation Committee; elected to Congress in 1994—1st term.

MARYLAND



Number of House Seats:
4 Republicans
4 Democrats

GOVERNOR

PARRIS GLENDENING

Dem. of University Park; born June 6, 1942 in Bronx, NY; PhD Florida State Univeristy; professor; Hyattsville councilman 1978-82; county executive 1982-94; elected governor in 1994, term ends 1999.

SENATORS

PAUL S. SARBANES ..... (202) 224-4524

Dem. of Salisbury; senior senator; born Feb. 3, 1933 in Salisbury; LLB Harvard Law School, 1960; associate in Baltimore law firms 1961-70; member, State House 1967-71; member of U.S. House 1970-76; elected to the U.S. Senate in 1976, 4th term ends in 2001.

BARBARA A. MIKULSKI ..... (202) 224-4654

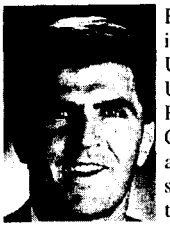
Dem. of Baltimore; junior senator; born July 20, 1936 in Baltimore; MSW Univ. of Md. 1965; member, Baltimore city council 1971-76; member of U.S. House 1977-86; elected to the U.S. Senate in 1986, 2nd term ends in 1999.

DISTRICTS/REPRESENT

1st/WAYNE THOMAS GILCHREST .....

Rep. of Kennedy
15, 1946 in Rahwa
ware State, 1973; U
1965-68; high scho
90; first elected to C
3rd term.

2nd/ROBERT EHRLICH, JR. .....



Rep. of Timonium;
in Baltimore, MD
University, 1982
University, 1979;
Representative 1
Governor's Counc
and Neglect and
sory Council for
tration; elected to C
1st term.

3rd/BENJAMIN L. CARDIN .....

Dem. of Baltimo
1943 in Baltimor
Md. Law School,
State House 1966-
86; first elected to C
5th term.

4th/ALBERT WYNN .....

Dem. of Largo; b
in Philadelphia, P
Univ. Law School
of Pittsburgh, 197
House 1982-86, S
92; first elected to
2nd term.

5th/STENY H. HOYER .....

Dem. of Mitchell
14, 1939 in New
Georgetown Univ
Md. Senate 1967-7
78; practicing att
ent; first elected to
8th term.

ND

)F

De[redacted]niversity Park; born June 6, 1942 in Bronx, NY; PhD Florida State Univeristy; professor; Hyattsville councilman 1978-82; county executive 1982-94; elected governor in 1994, term ends 1999.

NES ..... (202) 224-4524

)em. of Salisbury; senior senator; orn Feb. 3, 1933 in Salisbury; LLB Harvard Law School, 1960; associte in Baltimore law firms 1961-0; member, State House 1967-71; ember of U.S. House 1970-76; lected to the U.S. Senate in 1976, th term ends in 2001.

KULSKI ..... (202) 224-4654

)em. of Baltimore; junior senator; orn July 20, 1936 in Baltimore; ISW Univ. of Md. 1965; member, altimore city council 1971-76; ember of U.S. House 1977-86; ected to the U.S. Senate in 1986, nd term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/WAYNE THOMAS GILCHREST ..... (202) 225-5311

Rep. of Kennedyville; born Apr. 15, 1946 in Rahway, NJ; BA Delaware State, 1973; U.S. Marine Corps 1965-68; high school teacher 1973-90; first elected to Congress in 1990—3rd term.

2nd/ROBERT EHRLICH, JR. ..... (202) 225-3061

Rep. of Timonium; born Nov. 25, 1957 in Baltimore, MD; JD Wake Forest University, 1982; BA Princeton University, 1979; attorney; State Representative 1987-94; member, Governor's Council on Child Abuse and Neglect and Governor's Advisory Council for Justice Administration; elected to Congress in 1994—1st term.

3rd/BENJAMIN L. CARDIN ..... (202) 225-4016

Dem. of Baltimore; born Oct. 5, 1943 in Baltimore; LLB Univ. of Md. Law School, 1967; member, State House 1966-86, Speaker 1979-86; first elected to Congress in 1986—5th term.

4th/ALBERT WYNN ..... (202) 225-8699

Dem. of Largo; born Sept. 10, 1951 in Philadelphia, PA; JD Georgetown Univ. Law School, 1977; BA Univ. of Pittsburgh, 1977; member, State House 1982-86, State Senate 1986-92; first elected to Congress in 1992—2nd term.

5th/STENY H. HOYER ..... (202) 225-4131

Dem. of Mitchellville; born June 14, 1939 in New York City; JD Georgetown Univ., 1966; member, Md. Senate 1967-78, president 1975-78; practicing attorney 1966-present; first elected to Congress in 1981—8th term.

6th/ROSCOE G. BARTLETT ..... (202) 225-2721

Rep. of Frederick; born June 3, 1926 in Moreland, KY; PhD Univ. of Maryland, 1952; researcher/engineer, businessman; first elected to Congress in 1992—2nd term.

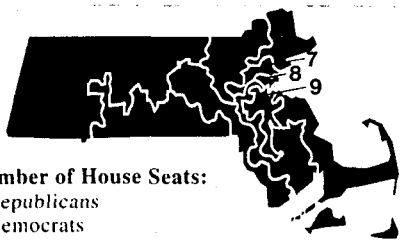
7th/KWEISI MFUME ..... (202) 225-4741

Dem. of Baltimore; born Oct. 24, 1948 in Baltimore; MA Johns Hopkins Univ., 1984; member, Baltimore city council 1978-86; first elected to Congress in 1986—5th term.

8th/CONSTANCE A. MORELLA ..... (202) 225-5341

Rep. of Bethesda; born Feb. 12, 1931 in Somerville, MA; MA American Univ., 1967; college professor 1970-86; member, Montgomery Cty. Commission for Women 1972-75, pres. 1973-74; member, State House 1979-86; first elected to Congress in 1986—5th term.

MASSACHUSETTS



Number of House Seats:
2 Republicans
8 Democrats

GOVERNOR

WILLIAM F. WELD

Rep.; born 1945; JD Harvard Law School, 1970; attorney; U.S. atty. 1981-86; asst. atty. general, Criminal Division 1986-88; elected governor in 1990, re-elected in 1994, term ends 1999.

SENATORS

EDWARD M. KENNEDY ..... (202) 224-4543

Dem. of Boston; senior senator; born Feb. 22, 1932 in Boston; LLB Univ. of Va. Law School, 1959; Suffolk Cty. asst. district atty.; elected to the U.S. Senate in 1962, 7th term ends in 2001.

JOHN F. KERRY ..... (202) 224-2742

Dem. of Boston; junior senator; born Dec. 11, 1943 in Denver, CO; JD Boston College, 1976; served in U.S. Navy; 1st asst. district atty., Middlesex Cty. 1977-79; private law practice; lt. governor 1983-84; elected to the U.S. Senate in 1984, 2nd term ends in 1997.

DISTRICTS/REPRESENTATIVES

1st/JOHN OLVER ..... (202) 225-5335

Dem. of Amherst; born Sept. 3, 1936 in Honesdale, PA; PhD MIT, 1961; member, State House 1969-72; member, State Senate 1972-91; appointed to Congress in 1991—3rd term.

2nd/RICHARD E. NEAL ..... (202) 225-5601

Dem. of Springfield; born Feb. 14, 1949 in Worcester; MPA Univ. of Hartford Barney School of Business & Public Administration, 1976; teacher; lecturer; asst. to mayor 1973-78; member, Springfield city council 1978-84, pres. 1979-84; mayor 1984-88; first elected to Congress in 1988—4th term.

3rd/ PETER BLUTE ..... (202) 225-6101

Rep. of Shrewsbury; born Jan. 28, 1956 in Worchester; BA Boston College, 1978; member, State House 1986-92; first elected to Congress in 1992—2nd term.

4th/BARNEY FRANK ..... (202) 225-5931

Dem. of Newton; born March 31, 1940 in Bayonne, NJ; JD Harvard Univ., 1977; exec. asst. to Mayor Kevin White of Boston 1968-71; member, State House 1973-80; first elected to Congress in 1980—8th term.

5th/ MARTIN MEEHAN ..... (202) 225-3411

Dem. of Lowell; born Dec. 30, 1956 in Lowell; JD Suffolk Univ. Law School, 1986; BA Univ. of Mass, 1978; assistant district attorney; first elected to Congress in 1992—2nd term.

6th/PETER TORKILDSEN ..... (202) 225-8020

Rep. of Danvers; born Jan. 28, 1958 in Milwaukee, WI; MPA Kennedy School of Government at Harvard, 1989; BA Univ. of Massachusetts, 1982; member, State House 1985-90; first elected to Congress in 1992—2nd term.

7th/EDWARD J. MARKEY ..... (202) 225-2836

Dem. of Malden; born July 11, 1946 in Malden; JD Boston College Law School, 1972; member, State House 1973-76; first elected to Congress in 1976—10th term.

8th/JOSEPH P. KENNEDY II ..... (202) 225-5111

Dem. of Brighton; born Sept. 24, 1952 in Brighton; BA Univ. of Mass. at Boston, 1976; worked for U.S. Community Services Admin. 1977; pres., Citizens Energy Corp. 1979-86; first elected to Congress in 1986—5th term.

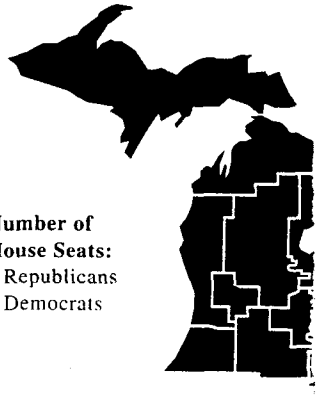
9th/JOE MOAKLEY .....

Dem. of Boston; b in Boston; JD Su School, 1956; men 1953-64, State Sena councilman 1971- to Congress in 19

10th/GERRY E. STUDDS .....

Dem. of Cohasse 1937 in Mineola, Univ., 1961; taug St. Paul's School first elected to Co 12th term.

MICHIGAN



Number of House Seats:
7 Republicans
9 Democrats

GOVERNOR

JOHN ENGLER

Rep.; born Oct. City; JD Thomas School, 1981; men 1971-78, State Sen jority leader 1984- ernor in 1990, re- term ends 1999.

FRANK ..... (202) 225-5931

Dem. of Newton; born March 31, 1940 in Bayonne, NJ; JD Harvard Univ., 1977; exec. asst. to Mayor Kevin White of Boston 1968-71; member, State House 1973-80; first elected to Congress in 1980—8th term.

MEEHAN ..... (202) 225-3411

Dem. of Lowell; born Dec. 30, 1956 in Lowell; JD Suffolk Univ. Law School, 1986; BA Univ. of Mass. 1978; assistant district attorney; first elected to Congress in 1992—2nd term.

RKILDSEN ..... (202) 225-8020

Rep. of Danvers; born Jan. 28, 1958 in Milwaukee, WI; MPA Kennedy School of Government at Harvard, 1989; BA Univ. of Massachusetts, 1982; member, State House 1985-90; first elected to Congress in 1992—2nd term.

. MARKEY ..... (202) 225-2836

Dem. of Malden; born July 11, 1946 in Malden; JD Boston College Law School, 1972; member, State House 1973-76; first elected to Congress in 1976—10th term.

KENNEDY II ..... (202) 225-5111

Dem. of Brighton; born Sept. 24, 1952 in Brighton; BA Univ. of Mass. at Boston, 1976; worked for U.S. Community Services Admin. 1977; pres., Citizens Energy Corp. 1979-86; first elected to Congress in 1986—5th

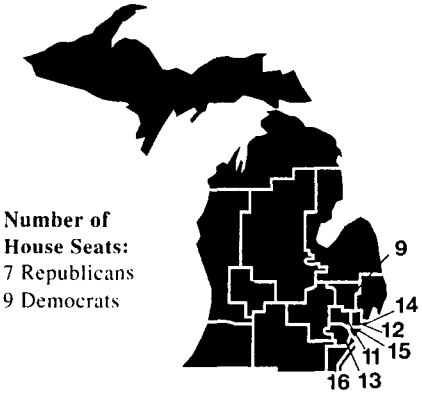
9th/JOE MOAKLEY ..... (202) 225-8273

Dem. of Boston; born Apr. 27, 1927 in Boston; JD Suffolk Univ. Law School, 1956; member, State House 1953-64, State Senate 1965-69; Boston councilman 1971-73; first elected to Congress in 1972—12th term.

10th/GERRY E. STUDDS ..... (202) 225-3111

Dem. of Cohasset; born May 12, 1937 in Mineola, NY; MAT Yale Univ., 1961; taught government at St. Paul's School, N.H. 1965-69; first elected to Congress in 1972—12th term.

MICHIGAN



Number of House Seats:
7 Republicans
9 Democrats

GOVERNOR

JOHN ENGLER

Rep.; born Oct. 12, 1948 in Beal City; JD Thomas M. Colley Law School, 1981; member, State House 1971-78, State Senate 1979-90, majority leader 1984-90; elected governor in 1990, re-elected in 1994, term ends 1999.

SENATORS

CARL LEVIN ..... (202) 224-6221

Dem. of Detroit; senior senator; born June 28, 1934 in Detroit; LLB Harvard Law School, 1959; general counsel, Mich. Civil Rights Commission 1964-67; member, Detroit City Council 1970-77, pres. 1973-77; elected to the U.S. Senate in 1978, 3rd term ends in 1997.

SPENCER ABRAHAM ..... (202) 224-4822

Rep. of Auburn Hills; junior senator; born June 12, 1952 in Lansing; JD Harvard University; assistant law professor and consultant 1981-83; State GOP Chairman 1982-90; deputy chief of staff for Vice President Quayle 1990-91; elected to the U.S. Senate in 1994, 1st term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/BART STUPAK ..... (202) 225-4735

Dem. of Menominee; born Feb. 29, 1952 in Milwaukee; JD Thomas M. Cooley Law School, 1981; attorney; state trooper; member, State House 1989-90; first elected to Congress in 1992—2nd term.

LTV Steel: Palmer, Stoneport

2nd/PETER HOEKSTRA ..... (202) 225-4401

Rep. of Holland; born Oct. 30, 1953 in Groningen, The Netherlands; MBA Univ. of Michigan, 1977; BA Hope College, 1975; executive of office furniture company; first elected to Congress in 1992—2nd term.

3rd/VERNON EHLERS ..... (202) 225-3831

Rep. of Grand Rapids; born February 6, 1934 in Pipestone Minn.; PhD University of California at Berkeley, 1960; professor; member State House 1983-85, State Senate 1985-93; elected to Congress in special election December 1993—2nd term.

4th/DAVE CAMP ..... (202) 225-3561

Rep. of Midland; born July 9, 1953 in Midland; JD University of San Diego School of Law, 1978; special asst. atty. general 1980-84; admin. asst. to Rep. Bill Schuette 1985-87; attorney; member, State House 1989-90; first elected to Congress in 1990—3rd term.

5th/JAMES BARCIA ..... (202) 225-8171

Dem. of Bay City; born Feb. 25, 1952 in Bay City; BA Saginaw Valley State Univ., 1974; member, State House 1976-82, State Senate 1982-92; first elected to Congress in 1992—2nd term.

6th/FRED UPTON ..... (202) 225-3761

Rep. of St. Joseph; born April 23, 1953 in St. Joseph; BA Univ. of Mich., 1975; field manager, U.S. House campaign 1976; staff asst. to U.S. Rep. David Stockman 1976-80; legis. asst., OMB 1981-83; asst. dir. for legislative affairs, OMB 1983-85; first elected to Congress in 1986—5th term.

7th/NICK SMITH ..... (202) 225-6276

Rep. of Addison; born Nov. 5, 1934 in Addison; MS Univ. of Delaware; BA Michigan State Univ.; farmer; member, State House 1978-82, State Senate 1982-92; first elected to Congress in 1992—2nd term.

8th/DICK CHRYSLER ..... (202) 225-4872

Rep. of Brighton; born April 29, 1942 in St. Paul, MN; Brighton High School; Honorary Doctorate Cleary College; businessman; vice-chairman of the Michigan Chamber of Commerce; created the Richard R. Chrysler Educational Center at Cleary College; elected to Congress in 1994—1st term.

9th/DALE E. KILDEE ..... (202) 225-3611

Dem. of Flint; born Sept. 16, 1929 in Flint; MA Univ. of Mich., 1961; high school teacher 1954-64; member, State House 1965-74, State Senate 1975-76; first elected to Congress in 1976—10th term.

10th/DAVID E. BONIOR ..... (202) 225-2106

Dem. of Mount Clements; born June 6, 1945 in Detroit; MA Chapman College, Calif., 1972; member, State House 1973-77; first elected to Congress in 1976—10th term.

11th/JOSEPH KNOLLENBERG ..... (202) 225-4735

Rep. of Bloomfield Township; born Nov. 28, 1933 in Mattoon; BS Eastern Illinois Univ., 1955; insurance agent; first elected to Congress in 1992—2nd term.

12th/SANDER M. LEVIN ..... (202) 225-4961

Dem. of Southfield; born Sept. 6, 1931 in Detroit; LLB Harvard, 1957; attorney; member, State Senate 1964-70; asst. admin., Agency for International Development 1977-81; first elected to Congress in 1982—7th term.

LTV Steel: Ferndale

13th/LYNN RIVERS ..... (202) 225-6261

Dem. of Ann Arbor; born Dec. 19, 1956 in Au Grey; JD Wayne State University, 1992; BA University of Michigan, 1987; attorney; Ann Arbor Board of Education 1984-92; State Representative 1993-94; elected to Congress in 1994—1st term.

14th/JOHN CONYERS, JR. .....

Dem. of Detroit; bo in Detroit; LLB W School, 1958; legi John Dingell 1958-6 Workman's Comp first elected to Con 16th term.

15th/BARBARA-ROSE COLLINS .....

Dem. of Detroit; bo in Detroit; attende Univ.; member, Det board 1970-73; mem 1975-81; member, c 90; first elected to Co 3rd term.

16th/JOHN D. DINGELL .....

Dem. of Trenton; in Colorado Sp Georgetown Univ. L asst. prosecutor, W 55; first elected to Co 21st term.

MINNESOTA

Number of House Seats:
2 Republicans
6 Democrats

GOVERNOR

ARNE CARLSON

Rep.; born in 1934; ate school at Univ. ber, city council 19 leader; member, St 78; state auditor 1 governor in 1990, re-term ends 1999.

ILDEE ..... **(202) 225-3611**

Dem. of Flint; born Sept. 16, 1929 in Flint; MA Univ. of Mich., 1961; high school teacher 1954-64; member, State House 1965-74, State Senate 1975-76; first elected to Congress in 1976—10th term.

BONIOR ..... **(202) 225-2106**

Dem. of Mount Clements; born June 6, 1945 in Detroit; MA Chapman College, Calif., 1972; member, State House 1973-77; first elected to Congress in 1976—10th term.

G ..... **(202) 225-4735**

Rep. of Bloomfield Township; born Nov. 28, 1933 in Mattoon; BS Eastern Illinois Univ., 1955; insurance agent; first elected to Congress in 1992—2nd term.

. LEVIN ..... **(202) 225-4961**

Dem. of Southfield; born Sept. 6, 931 in Detroit; LLB Harvard, 1957; ttorney; member, State Senate 1964-0; asst. admin., Agency for International Development 1977-81; first lected to Congress in 1982—7th erm.

TV Steel: Ferndale

RS ..... **(202) 225-6261**

em. of Ann Arbor; born Dec. 19, 956 in Au Grey; JD Wayne State niversity, 1992; BA University f Michigan, 1987; attorney; Ann r' Board of Education 1984- Representative 1993-94; Congress in 1994—1st rm.

14th/JOHN CONYERS, JR. ..... **(202) 225-5126**

Dem. of Detroit; born May 16, 1929 in Detroit; LLB Wayne State Law School, 1958; legis. asst. to Rep. John Dingell 1958-61; referee, Mich. Workman's Compensation Dept.; first elected to Congress in 1964—16th term.

15th/BARBARA-ROSE COLLINS ..... **(202) 225-2261**

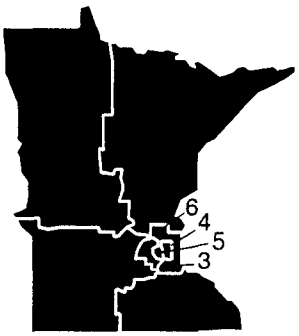
Dem. of Detroit; born Apr. 13, 1939 in Detroit; attended Wayne State Univ.; member, Detroit public school board 1970-73; member, State House 1975-81; member, city council 1982-90; first elected to Congress in 1990—3rd term.

16th/JOHN D. DINGELL ..... **(202) 225-4071**

Dem. of Trenton; born July 8, 1926 in Colorado Springs, CO; JD Georgetown Univ. Law School, 1952; asst. prosecutor, Wayne Cty. 1953-55; first elected to Congress in 1955—21st term.

MINNESOTA

Number of House Seats:
2 Republicans
6 Democrats



GOVERNOR

ARNE CARLSON

Rep.; born in 1934; attended graduate school at Univ. of Minn.; member, city council 1965-68, majority leader; member, State House 1970-78; state auditor 1978-90; elected governor in 1990, re-elected in 1994, term ends 1999.

SENATORS

PAUL DAVID WELLSTONE ..... **(202) 224-5641**

Dem. of Northfield; senior senator; born July 21, 1944 in Washington, DC; PhD Univ. of NC, 1969; author; political science professor 1969-90; elected to the U.S. Senate in 1990, 1st term ends in 1997.

ROD GRAMS ..... **(202) 224-3244**

Rep. of Anoka; junior senator; born Feb. 4, 1948 in Princeton; Brown Institute in Minneapolis; businessman, former television anchor; member of U.S. House 1992-95; elected to the U.S. Senate in 1994, 1st term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/GIL GUTKNECHT ..... **(202) 225-2472**

Rep. of Rochester; born March 20, 1951 in Cedar Falls, IA; BA University of Northern Iowa, 1973; real estate broker; real estate auctioneer; State Representative 1983-94; Floor Leader for the House Republican Caucus; elected to Congress in 1994—1st term.

2nd/DAVID MINGE ..... **(202) 225-2331**

Dem. of Montevideo; born March 19, 1942 in Clarkfield; JD Univ. of Chicago Law School, 1967; BA St. Olaf College, 1964; attorney; first elected to Congress in 1992—2nd term.

3rd/JIM RAMSTAD ..... **(202) 225-2871**

Rep. of Minnetonka; born May 6, 1946 in Jamestown, ND; JD George Washington Univ. Law School, 1973; attorney; member, State Senate 1981-90; first elected to Congress in 1990—3rd term.

4th/BRUCE F. VENTO ..... (202) 225-6631

Dem.-Farmer-Labor of St. Paul; born Oct. 7, 1940 in St. Paul; BS Wis. State Univ., 1965; teacher; member, State House 1971-76; first elected to Congress in 1976—10th term.

5th/MARTIN OLAV SABO ..... (202) 225-4755

Dem.-Farmer-Labor of Minneapolis; born Feb. 28, 1938 in Crosby, ND; BA Augsburg College, 1959; member, State House 1961-78, speaker 1973-78; first elected to Congress in 1978—9th term.

6th/BILL LUTHER ..... (202) 225-2271

Dem. of Oakdale; born June 27, 1945 in Fergus Falls; JD University of Minnesota, 1970; attorney; prosecuting attorney in the Twin Cities; State Representative 1974-76; State Senator 1977-94; sponsor of anti-crime and anti-drug legislation; elected to Congress in 1994—1st term.

7th/COLLIN C. PETERSON ..... (202) 225-2165

Dem. of Detroit Lakes; born June 29, 1944 in Fargo, ND; BA Moorhead State Univ., 1966; CPA 1966-90; member, State Senate 1976-86; first elected to Congress in 1990—3rd term.

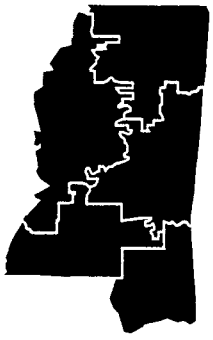
8th/JAMES L. OBERSTAR ..... (202) 225-6211

Dem. of Chisholm; born Sept. 10, 1934 in Chisholm; MA in government, College of Europe, Belgium, 1957; admin. asst. to Rep. John Blatnik 1963-74; first elected to Congress in 1974—11th term.

LTV Steel: Hoyt Lakes

MISSISSIPPI

Number of House Seats:
1 Republican
4 Democrats



GOVERNOR

KIRK FORDICE

Rep. of Vicksburg; BA in civil engineering and MA in industrial management Purdue University; professional engineer and president of Fordice Construction Company; elected governor in 1991, term ends 1996.

SENATORS

THAD COCHRAN ..... (202) 224-5054

Rep. of Jackson; senior senator; born Dec. 7, 1937 in Pontotoc; JD Univ. of Miss. Law School, 1965; admitted to the Miss. Bar in 1965; member of U.S. House 1973-78; elected to the U.S. Senate in 1978, 3rd term ends in 1997.

TRENT LOTT ..... (202) 224-6253

Rep. of Pascagoula; junior senator; born Oct. 9, 1941 in Grenada Cty.; JD Univ. of Miss., 1967; practiced law in Pascagoula; admin. asst. to Rep. William Colmer 1968-71; member of U.S. House 1973-89; elected to the U.S. Senate in 1988, re-elected in 1994, 2nd term ends in 2001.

DISTRICTS/REPRESENTA

1st/ROGER WICKER ..... (

Rep. of Tupelo; bo
in Pontotoc; JD Un
sissippi, 1975; U.S
Col. USAF Reserve
House Rules Comm
U.S. Rep. Trent Lott
Senator 1987-94; c
tions Committee 1
Congress in 1994—

2nd/BENNIE G. THOMPSON..... (

Dem. of Bolton; bo
in Bolton; MS Jack
1972; educator 196
derman 1969-73; m
1973-79; member, H
of Supervisors 1980
to Congress in spe
1993—2nd term.

3rd/G.V. "SONNY" MONTGOMERY ..... (

Dem. of Meridian;
1920 in Meridian;
Univ., 1943; insuranc
State Senate 1956-
to Congress in 196

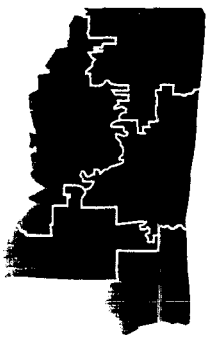
4th/MIKE PARKER ..... (

Dem. of Brookhave
1949 in Laurel; BA
College, 1970; ca
neral home owner
elected to Congres
term.

5th/GENE TAYLOR .....

Dem. of Bay St. L
17, 1953 in New O
Tulane Univ., 197
St. Louis City Co
member, State Sena
elected to Congres
term.

'PI



:e[redacted]ksburg; BA in civil en-
ine[redacted] and MA in industrial
ıanagement Purdue University;
rofessional engineer and president
f Fordice Construction Company;
lected governor in 1991, term ends
996.

N ..... (202) 224-5054
ep. of Jackson; senior senator; born
ec. 7, 1937 in Pontotoc; JD Univ.
Miss. Law School, 1965; admit-
d to the Miss. Bar in 1965; mem-
r of U.S. House 1973-78; elected
the U.S. Senate in 1978, 3rd term
ds in 1997.

..... (202) 224-6253
ep. of Pascagoula; junior senator;
rn Oct. 9, 1941 in Grenada Cty.;
Univ. of Miss., 1967; practiced
w in Pascagoula; admin. asst. to
ep. William Colmer 1968-71;
ember of U.S. House 1973-89;
ected to the U.S. Senate in 1988,
-ele[redacted]d in 1994, 2nd term ends

DISTRICTS/REPRESENTATIVES

1st/ROGER WICKER ..... (202) 225-4306

Rep. of Tupelo; born July 5, 1951 in Pontotoc; JD University of Mississippi, 1975; U.S. Air Force; Lt. Col. USAF Reserves; attorney; U.S. House Rules Committee counsel to U.S. Rep. Trent Lott 1980-82; State Senator 1987-94; chairman, Elections Committee 1992; elected to Congress in 1994—1st term.

2nd/BENNIE G. THOMPSON ..... (202) 225-5876

Dem. of Bolton; born Jan. 28, 1948 in Bolton; MS Jackson State Univ., 1972; educator 1968; served as Alderman 1969-73; mayor of Bolton 1973-79; member, Hinds City Board of Supervisors 1980-93; first elected to Congress in special election in 1993—2nd term.

3rd/G.V. "SONNY" MONTGOMERY ..... (202) 225-5031

Dem. of Meridian; born Aug. 5, 1920 in Meridian; BS Miss. State Univ., 1943; insurance agent; member, State Senate 1956-66; first elected to Congress in 1966—15th term.

4th/MIKE PARKER ..... (202) 225-5865

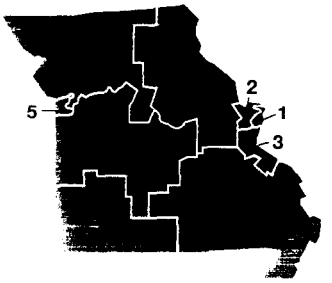
Dem. of Brookhaven; born Oct. 31, 1949 in Laurel; BA William Carey College, 1970; cattle farmer; funeral home owner 1971-88; first elected to Congress in 1988—4th term.

5th/GENE TAYLOR ..... (202) 225-5772

Dem. of Bay St. Louis; born Sept. 17, 1953 in New Orleans, LA; BA Tulane Univ., 1976; member, Bay St. Louis City Council 1981-83; member, State Senate 1984-89; first elected to Congress in 1989—4th term.

MISSOURI

Number of House Seats:
3 Republicans
6 Democrats



GOVERNOR

MEL CARNAHAN

Dem. of Rolla; born Feb. 11, 1934 in Birch Tree; JD University of Missouri Law School, 1959; BA George Washington University, 1954; member, State House 1963-66, state treasurer 1981-89, lieutenant governor 1989-92; elected governor 1992, term ends 1997.

SENATORS

CHRISTOPHER S. "KIT" BOND ..... (202) 224-5721

Rep. of Mexico; senior senator; born Mar. 6, 1939 in St. Louis; LLB Univ. of Va., 1963; clerk, U.S. Court of Appeals 5th Circuit, Atlanta 1964; asst. state atty. general 1969; state auditor 1970; governor 1973-77, 1981-85; elected to the U.S. Senate in 1986, 2nd term ends in 1999.

JOHN ASHCROFT ..... (202) 224-6154

Rep. of St. Louis; junior senator; born May 9, 1942 in Chicago, IL; JD University of Chicago; AB Yale; attorney/law professor; State Attorney General 1976-85; Governor 1985-93; elected to the U.S. Senate in 1994, 1st term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/WILLIAM L. CLAY ..... (202) 225-2406

Dem. of St. Louis; born April 30, 1931 in St. Louis; BS St. Louis Univ., 1953; real estate broker; manager, life insurance company; alderman, 26th Ward of St. Louis 1959-64; first elected to Congress in 1968—14th term.

2nd/JIM TALENT ..... (202) 225-2561

Rep. of Chesterfield; born Oct. 18, 1956 in Des Peres; JD Univ. of Chicago Law School, 1981; BA Washington Univ., 1978; attorney; member, State House 1984-92, minority leader 1989-92; first elected to Congress in 1992—2nd term.

3rd/RICHARD A. GEPHARDT ... (202) 225-2671

Dem. of St. Louis; born Jan. 31, 1941 in St. Louis; JD Univ. of Mich. Law School, 1965; practicing attorney 1965-77; first elected to Congress in 1976—10th term.

4th/IKE SKELTON ..... (202) 225-2876

Dem. of Lexington; born Dec. 20, 1931 in Lexington; LLB Univ. of Mo., 1956; Lafayette City prosecuting atty. 1957-61; member, State Senate 1971-76; first elected to Congress in 1976—10th term.

5th/KAREN MCCARTHY ..... (202) 225-4535

Dem. of Kansas City; born March 18, 1947 in Haverhill, MA; MBA University of Kansas; MA University of Missouri at Kansas City; high school teacher 1975-76; public affairs staff 1986-94; President-elect, National Conference of State Legislatures 1994; State Representative 1977-94; elected to Congress in 1994—1st term.

6th/PATRICIA DANNER ..... (202) 225-7041

Dem. of Kansas City; born Jan. 13, 1934 in Louisville KY; BA Northeast Missouri State Univ., 1972; member, State Senate 1982-92; first elected to Congress in 1992—2nd term.

7th/MEL HANCOCK ..... (202) 225-6536

Rep. of Springfield; born Sept. 14, 1929 in Cape Fair; BS Southwest Mo. State College, 1951; U.S. Air Force 1951-53; International Harvester Company 1953-59; Sentry Insurance 1959-69; president, Federal Protection Inc. 1969-88; first elected to Congress in 1988—4th term.

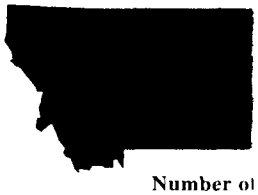
8th/BILL EMERSON ..... (202) 225-4404

Rep. of Cape Girardeau; born Jan. 1, 1938 in St. Louis; LLB, Univ. of Baltimore, 1964; admin. asst. to Rep. Bob Ellsworth and Rep. Charles Mathias; director of federal relations, TRW Corp. 1977-80; first elected to Congress in 1980—8th term.

9th/HAROLD L. VOLKMER ..... (202) 225-2956

Dem. of Hannibal; born April 4, 1931 in Jefferson City; LLB Univ. of Mo. School of Law, 1955; Marion Cty. prosecuting atty. 1960-66; member, State House 1967-76; first elected to Congress in 1976—10th term.

MONTANA



Number o
1 Democra

GOVERNOR

MARC RACICOT

Rep. of Helena; b
ompson Falls; Uni
tana Law School;
assistant attorney
cial prosecutor 19
general 1989-92, e
in 1992, term ends

SENATORS

MAX BAUCUS .....

Dem. of Missoula;
born Dec. 11, 1941
Stanford Univ. La
attorney at the SEC
ber, State House 1
of U.S. House 197
the U.S. Senate in
ends in 1997.

CONRAD BURNS .....

Rep. of Billings; ju
Jan. 25, 1935 in
attended Univ. of
Pollerd Hereford
broadcaster; elected
in 1988, 2nd term

DISTRICT/REPRESENTA

1st/PAT WILLIAMS .....

Dem. of Helena; b
in Helena; BA U
1961; educator; me
1967-69; coordina
ily Education Progr
elected to Congre
term.

DANNER ..... (202) 225-7041
Dem. of Kansas City; born Jan. 13, 1934 in Louisville KY; BA Northeast Missouri State Univ., 1972; member, State Senate 1982-92; first elected to Congress in 1992—2nd term.

OCK ..... (202) 225-6536
Rep. of Springfield; born Sept. 14, 929 in Cape Fair; BS Southwest Mo. State College, 1951; U.S. Air Force 1951-53; International Harvester Company 1953-59; Sentry ns' 1959-69; president, Fed- r tion Inc. 1969-88; first le Congress in 1988—4th erm.

SON ..... (202) 225-4404
Rep. of Cape Girardeau; born Jan. , 1938 in St. Louis; LLB, Univ. of altimore, 1964; admin. asst. to ep. Bob Ellsworth and Rep. Charles Mathias; director of federal relations, TRW Corp. 1977-80; first lected to Congress in 1980—8th erm.

VOLKMER ..... (202) 225-2956
em. of Hannibal; born April 4, 931 in Jefferson City; LLB Univ. Mo. School of Law, 1955; Marion ty. prosecuting atty. 1960-66; ember, State House 1967-76; first ected to Congress in 1976—10th rm.

MONTANA

Number of House Seats:
1 Democrat

GOVERNOR

MARC RACICOT

Rep. of Helena; born 1949 in Thompson Falls; University of Montana Law School; Carroll College; assistant attorney general and special prosecutor 1977-89, attorney general 1989-92, elected governor in 1992, term ends 1997..

SENATORS

MAX BAUCUS ..... (202) 224-2651

Dem. of Missoula; senior senator; born Dec. 11, 1941 in Helena; LLB Stanford Univ. Law School, 1967; attorney at the SEC 1969-71; member, State House 1973-74; member of U.S. House 1975-78; elected to the U.S. Senate in 1978, 3rd term ends in 1997.

CONRAD BURNS ..... (202) 224-2644

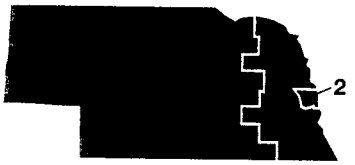
Rep. of Billings; junior senator; born Jan. 25, 1935 in Davis Cty., Mo.; attended Univ. of Mo.; field rep., Pollerd Hereford Magazine; radio broadcaster; elected to the U.S. Senate in 1988, 2nd term ends in 2001.

DISTRICT/REPRESENTATIVE

1st/PAT WILLIAMS ..... (202) 225-3211

Dem. of Helena; born Oct. 30, 1937 in Helena; BA Univ. of Denver, 1961; educator; member, State House 1967-69; coordinator, Mont. Family Education Program 1971-78; first elected to Congress in 1978—9th term.

NEBRASKA



Number of House Seats:
3 Republicans

GOVERNOR

E. BENJAMIN NELSON

Dem.; born May 17, 1941 in McCook; JD University of Nebraska, 1970; attorney; dir., state dept. of insurance 1975-76; exec. v.p., National Assn. of Insurance Commissioners 1982-85; elected governor in 1990, re-elected in 1994, term ends 1999.

SENATORS

J. JAMES EXON ..... (202) 224-4224

Dem. of Lincoln; senior senator; born Aug. 9, 1921 in Geddes, SD; attended Univ. of Omaha; president of Exons, Inc., an office equipment supplier 1953-71; governor 1971-78; elected to the U.S. Senate in 1978, 3rd term ends in 1997.

BOB KERREY ..... (202) 224-6551

Dem. of Omaha; junior senator; born Aug. 27, 1943 in Lincoln; BS Univ. of Neb., 1966; U.S. Navy 1966-69; businessman; governor 1983-87; elected to the U.S. Senate in 1988, 2nd term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/DOUGLAS K. BEREUTER .... (202) 225-4806

Rep. of Lincoln; born Oct. 6, 1939 in York; MCP and MPA Harvard Univ., 1973; residential and commercial development consultant; member, State Legislature 1975-78; first elected to Congress in 1978—9th term.

2nd/JON CHRISTENSEN ..... (202) 225-4155

Rep. of Omaha; born Feb. 20, 1963 in St. Paul; JD South Texas College of Law, 1989; attorney; businessman; marketing director for insurance company; member Farm Bureau; Nebraska Cattlemen's Association; elected to Congress in 1994—1st term.

3rd/WILLIAM E. BARRETT ..... (202) 225-6435

Rep. of Lexington, born Feb. 9, 1929 in Lexington; BA Hastings College, 1952; pres., Barrett-Housel & Assoc.; member, State Legislature 1979-90, speaker 1985-88; first elected to Congress in 1990—3rd term.

NEVADA

Number of House Seats:
2 Republicans

GOVERNOR

BOB MILLER

Dem.; born March 30, 1945 in Chicago, IL; JD Loyola Univ., 1971; attorney, deputy sheriff 1967-71; legal advisor to Las Vegas metropolitan police 1973-75; dist. atty. Clark Cty. 1979-86; lt. governor 1986-88; succeeded to the governorship in 1989; elected governor in 1990, re-elected in 1994, term ends 1999.

SENATORS

HARRY REID ..... (202) 224-3542

Dem. of Searchlight; senior senator; born Dec. 2, 1939 in Searchlight; JD George Washington Univ., 1964; attorney; member, State House 1968-70; lt. governor 1970-74; chairman, Nev. Gaming Commission 1977-81; member of U.S. House 1982-86; elected to the U.S. Senate in 1986, 2nd term ends in 1999.

RICHARD H. BRYAN ..... (202) 224-6244

Dem. of Las Vegas; junior senator; born July 16, 1937 in Washington, DC; LLB Hastings College of Law, 1963; Clark Cty. deputy public defender 1964-66, public defender 1966-68; member, State House 1969-73, State Senate 1973-78; atty. general 1978-82; governor 1983-89; elected to the U.S. Senate in 1988, 2nd term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/JOHN ENSIGN ..... (202) 225-5965

Rep. of Las Vegas; born March 25, 1958 in Roseville, CA; DVM Colorado State University; BS Oregon State University; veterinarian; general manager of hotel and casino; member, Las Vegas Chamber of Commerce; elected to Congress in 1994—1st term.

2nd/BARBARA VUCANOVICH ..... (202) 225-6155

Rep. of Reno; born June 22, 1921 in Camp Dix, NJ; attended Manhattanville College of the Sacred Heart in N.Y.; aide to U.S. Senator 1974-82; businesswoman; first elected to Congress in 1982—7th term.

NEW HAMPSHIRE

Number of House Seats:
2 Republicans

GOVERNOR

STEVE MERRILL

Rep. of Manchester; ton; JD Georgetown School, 1972; BA Uni Hampshire, 1969; att attorney general, 198 ernor in 1992, re-ele term ends 1996.

SENATORS

ROBERT C. SMITH ..... (2

Rep. of Tuftonboro; s born Mar. 30, 1941 in BA Lafayette College, owner, real estate f member of U.S. Ho elected to the U.S. S 1st term ends in 199

JUDD GREGG ..... (2

Rep. of Greenfield; j born Feb. 14, 1947 in Boston Univ., 1975; torney 1975-80; v.p. of children's rehabilita member of U.S. Ho elected governor in 1 to the U.S. Senate in 1 ends in 1999.

..... (202) 224-3542

Dem. of Searchlight; senior sena-
or; born Dec. 2, 1939 in Search-
ight; JD George Washington Univ.,
964; attorney; member, State House
968-70; lt. governor 1970-74; chair-
nan, Nev. Gaming Commission 1977-
1; member of U.S. House 1982-
6; elected to the U.S. Senate in
986. 2nd term ends in 1999.

YAN ..... (202) 224-6244

Dem. of Las Vegas; junior senator;
orn July 16, 1937 in Washington,
C; LLB Hastings College of Law,
963; Clark Cty. deputy public de-
er 4-66, public defender 1966-
8 er, State House 1969-73,
tate nate 1973-78; atty. general
978-82; governor 1983-89; elected
the U.S. Senate in 1988, 2nd
rm ends in 2001.

EPRESENTATIVES

N ..... (202) 225-5965

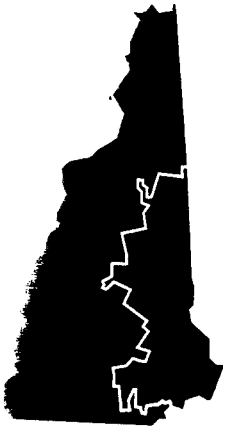
ep. of Las Vegas; born March 25,
958 in Roseville, CA; DVM Colo-
do State University; BS Oregon
ate University; veterinarian; general
anager of hotel and casino; mem-
r, Las Vegas Chamber of Com-
erce; elected to Congress in 1994—
t term.

..... (202) 225-6155

p. of Reno; born June 22, 1921 in
mp Dix, NJ; attended Man-
ttanville College of the Sacred
art in N.Y.; aide to U.S. Senator
74-82; businesswoman; first elected
Congress in 1982—7th term.

NEW HAMPSHIRE

Number of House Seats:
2 Republicans



GOVERNOR

STEVE MERRILL

Rep. of Manchester; born in Hampton; JD Georgetown University Law School, 1972; BA University of New Hampshire, 1969; attorney; elected attorney general, 1985; elected governor in 1992, re-elected in 1994, term ends 1996.

SENATORS

ROBERT C. SMITH ..... (202) 224-2841

Rep. of Tuftonboro; senior senator; born Mar. 30, 1941 in Trenton, NJ; BA Lafayette College, 1965; teacher; owner, real estate firm 1975-84; member of U.S. House 1984-91; elected to the U.S. Senate in 1990, 1st term ends in 1997.

JUDD GREGG ..... (202) 224-3324

Rep. of Greenfield; junior senator; born Feb. 14, 1947 in Nashua; LLM Boston Univ., 1975; practicing attorney 1975-80; v.p. of handicapped children's rehabilitation center; member of U.S. House 1980-88; elected governor in 1988, elected to the U.S. Senate in 1992, 1st term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/WILLIAM "BILL" H. ZELIFF ..... (202) 225-5456

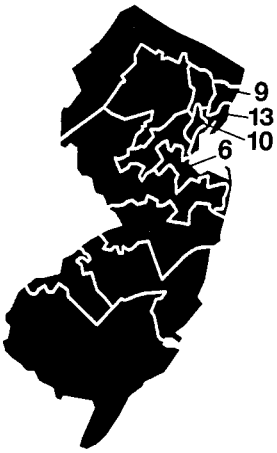
Rep. of Jackson; born June 12, 1936 in East Orange, NJ; BS Univ. of Conn., 1959; sales & marketing manager, Dupont Co. 1959-76; innkeeper/small business owner 1976-90; first elected to U.S. House in 1990—3rd term.

2nd/CHARLES BASS ..... (202) 225-5206

Rep. of Petersborough; born Jan. 8, 1952 in Boston, MA; AB Dartmouth College, 1974; businessman; staff for U.S. Rep. William Cohen 1974; aide and chief of staff to U.S. Rep. David Emery 1975-79; candidate for U.S. House 1980; State Senator 1989-92; elected to Congress in 1994—1st term.

NEW JERSEY

Number of House Seats:
8 Republicans
5 Democrats



GOVERNOR

CHRISTINE TODD WHITMAN

Rep. of Drumthwacket; born Sept. 26, 1946; BA Wheaton College, 1968; U.S. Office of Economic Opportunity and the Republican National Committee 1968-82; Somerset County Board of Chosen Freeholders, 1982; president, New Jersey Board of Public Utilities, 1981-90; newspaper columnist and radio talk-show host 1990-93; elected governor in 1993, term ends 1997.

SENATORS

BILL BRADLEY ..... (202) 224-3224

Dem. of Denville; senior senator; born July 28, 1943 in Crystal City, MO; MA Oxford Univ., 1968; Rhodes Scholar; writer; professional basketball player; elected to the U.S. Senate in 1978, 3rd term ends in 1997.

FRANK R. LAUTENBERG ..... (202) 224-4744

Dem. of Montclair; junior senator; born Jan. 23, 1924 in Paterson; BS Columbia Univ. School of Business, 1949; president, Automatic Data Processing, Inc. 1969-75, Chairman and CEO 1975-82; elected to the U.S. Senate in 1982, 3rd term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/ROBERT E. ANDREWS ..... (202) 225-6501

Dem. of Bellmawr; born Aug. 4, 1957 in Camden; JD Cornell Law School, 1982; professor; attorney; member, cty. board of freeholders, 1986-90, dir. 1989-90; first elected to Congress in 1990—3rd term.

2nd/FRANK A. LoBIONDO ..... (202) 225-6572

Rep. of Vineland; born May 12, 1946 in Bridgeton; BS St. Joseph's University; operations manager, LoBiondo Brothers Motor Express, Inc., 1968-94; State Assemblyman 1989-94; elected to Congress in 1994—1st term.

3rd/H. JAMES SAXTON ..... (202) 225-4765

Rep. of Vincentown; born Jan. 22, 1943 in Nicholson, PA; BA East Stroudsburg Univ., 1965; teacher; realtor; member, State Assembly 1975-81, State Senate 1982-84; first elected to Congress in 1984—6th term.

4th/CHRIS SMITH ..... (202) 225-3765

Rep. of Robbinsville; born March 4, 1953 in Rahway; BA Trenton State College, 1975; public relations consultant; sporting goods sales; first elected to Congress in 1980—8th term.

5th/MARGE ROUKEMA ..... (202) 225-4465

Rep. of Ridgewood; born Sept. 19, 1929 in West Orange; BA Montclair State College, N.J.; teacher of history, Ridgewood public schools; served as v.p., Ridgewood Board of Education; first elected to Congress in 1980—8th term.

6th/FRANK PALLONE ..... (202) 225-4671

Dem. of Long Branch; born Oct. 30, 1951 in Long Branch; JD Rutgers Univ., 1978; attorney; teacher; asst. prof., Cook College, Rutgers Univ. 1979-80; city councilman 1982-88; member, State Senate 1984-88; first elected to Congress in 1988—5th term.

7th/BOB FRANKS ..... (202) 225-5361

Rep. of New Providence; born Sept. 21, 1951 in Summit; JD Southern Methodist Univ. Law School, 1976; bachelor's degree DePauw Univ. in Indiana, 1973; attorney; member State Assembly 1979-92; first elected to Congress in 1992—2nd term.

8th/BILL MARTINI ..... (202) 225-5751

Rep. of Clifton; born Feb. 10, 194[illegible] in Passaic; JD Rutgers University; attorney; president of the Nicholas Martini Foundation; Clifton City Councilman 1990-94; Passaic County Board of Chosen Freeholders 1992-94; elected to Congress in 1994—1st term.

9th/ROBERT TORRICELLI ..... (

Dem. of Englewoo[illegible] 1951 in Paterson; J[illegible] School, 1976; dep[illegible] sel to governor 197[illegible] V.P. of the U.S. 1978 to Congress in 198[illegible]

10th/DONALD PAYNE ..... (

Dem. of Newark; bo[illegible] in Newark; BA Se[illegible] 1957; president, YM[illegible] Cty. Freeholder 19[illegible] man in Newark, 19[illegible] first elected to Con[illegible] 4th term.

11th/RODNEY FRELINGHUYSEN ..... (

Rep. of Harding T[illegible] April 29, 1946 in N[illegible] BA Hobart College, of the American Leg[illegible] ans of Foreign Wars; freeholder 1975-83; [illegible] blyman 1983-94; e[illegible] gress in 1994—1st [illegible]

12th/DICK ZIMMER ..... (

Rep. of Flemington; [illegible] 1944 in Newark; L[illegible] School, 1969; attor[illegible] State Assembly 1982-[illegible] 1987-90; first elect[illegible] in 1990—3rd term.

13th/ROBERT MENENDEZ ..... (

Dem. of Union City [illegible] 1954 in Manhattan, N[illegible] Univ. School of Law [illegible] ney; mayor, Union [illegible] member, State Asse[illegible] State Senate 1991-9[illegible] to Congress in 1992-[illegible]

ITH ..... (202) 225-3765

Rep. of Robbinsville; born March 4, 1953 in Rahway; BA Trenton State College, 1975; public relations consultant; sporting goods sales; first elected to Congress in 1980—8th term.

ROUKEMA ..... (202) 225-4465

Rep. of Ridgewood; born Sept. 19, 1929 in West Orange; BA Montclair State College, N.J.; teacher of history, Ridgewood public schools; served as v.p., Ridgewood Board of E[illegible]on; first elected to Congress i[illegible]-8th term.

ALLONE ..... (202) 225-4671

Dem. of Long Branch; born Oct. 30, 1951 in Long Branch; JD Rutgers Univ., 1978; attorney; teacher; asst. prof., Cook College, Rutgers Univ. 1979-80; city councilman 1982-88; member, State Senate 1984-88; first elected to Congress in 1988—5th term.

NKS ..... (202) 225-5361

Rep. of New Providence; born Sept. 21, 1951 in Summit; JD Southern Methodist Univ. Law School, 1976; bachelor's degree DePauw Univ. in Indiana, 1973; attorney; member State Assembly 1979-92; first elected to Congress in 1992—2nd term.

RTINI ..... (202) 225-5751

Rep. of Clifton; born Feb. 10, 1947 in Passaic; JD Rutgers University; attorney; president of the Nicholas Martini Foundation; Clifton City Councilman 1990-94; Passaic County B[illegible] Chosen Freeholders 1992-[illegible]ed to Congress in 1994—[illegible]

9th/ROBERT TORRICELLI ..... (202) 225-5061

Dem. of Englewood; born Aug. 26, 1951 in Paterson; JD Rutgers Law School, 1976; deputy legis. counsel to governor 1974-78; counsel to V.P. of the U.S. 1978-80; first elected to Congress in 1982—7th term.

10th/DONALD PAYNE ..... (202) 225-3436

Dem. of Newark; born July 16, 1934 in Newark; BA Seton Hall Univ., 1957; president, YMCA 1970; Essex Cty. Freeholder 1972-78; councilman in Newark, 1982-88; teacher; first elected to Congress in 1988—4th term.

11th/RODNEY FRELINGHUYSEN ..... (202) 225-5034

Rep. of Harding Township; born April 29, 1946 in New York, NY; BA Hobart College, 1969; member of the American Legion and Veterans of Foreign Wars; Morris County freeholder 1975-83; State Assemblyman 1983-94; elected to Congress in 1994—1st term.

12th/DICK ZIMMER ..... (202) 225-5801

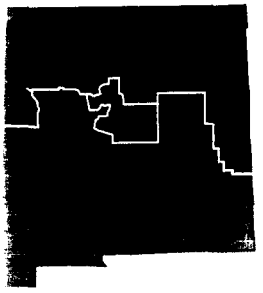
Rep. of Flemington; born Aug. 16, 1944 in Newark; LLB Yale Law School, 1969; attorney; member, State Assembly 1982-87, State Senate 1987-90; first elected to Congress in 1990—3rd term.

13th/ROBERT MENENDEZ ..... (202) 225-7919

Dem. of Union City; born Jan. 1, 1954 in Manhattan, NY; JD Rutgers Univ. School of Law, 1979; attorney; mayor, Union City 1986-92, member, State Assembly 1988-91, State Senate 1991-92; first elected to Congress in 1992—2nd term.

NEW MEXICO

Number of House Seats:
2 Republicans
1 Democrat



GOVERNOR

GARY JOHNSON

Rep. of Alberquerque; born Jan. 1, 1953 in Minot, ND; BA Unversity of New Mexico, 1975; construction worker; businessman; no prior elected office; elected governor in 1994, term ends 1999.

SENATORS

PETE V. DOMENICI ..... (202) 224-6621

Rep. of Albuquerque; senior senator; born May 7, 1932 in Albuquerque; LLB Denver Univ., 1958; city commissioner, Albuquerque 1966-68, chairman and ex-officio mayor 1967; elected to the U.S. Senate in 1972, 4th term ends in 1997.

JEFF BINGAMAN, JR ..... (202) 224-5521

Dem. of Santa Fe; junior senator; born Oct. 3, 1943 in El Paso, TX; JD Stanford Law School, 1968; asst. to atty. general 1969; attorney 1970-78; atty. general 1979-82; elected to the U.S. Senate in 1982, 3rd term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/STEVEN H. SCHIFF ..... (202) 225-6316

Rep. of Albuquerque; born Mar. 18, 1947 in Chicago, IL; JD Univ. of N. Mex. Law School, 1972; asst. dist. atty. 1972-77; trial attorney in private practice 1977-79; asst. city atty. 1979-80; dist. atty. 1980-88; first elected to Congress in 1988—4th term.

2nd/JOE SKEEN ..... (202) 225-2365

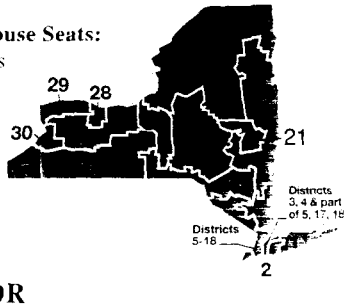
Rep. of Picacho; born June 30, 1927 in Roswell; BS Texas A&M, 1950; soil and water engineer; sheep rancher; member, State Senate 1960-70; first elected to Congress in 1980—8th term.

3rd/BILL RICHARDSON ..... (202) 225-6190

Dem. of Santa Fe; born Nov. 15, 1947 in Pasadena, CA; MA Fletcher School of Law & Diplomacy, 1971; Congressional aide 1971-73, 1975-78; State Department aide 1973-74; president of trade group 1978-82; first elected to Congress in 1982—7th term.

NEW YORK

[illegible]ber of House Seats:
[illegible]ublicans
[illegible]mocrats



GOVERNOR

GEORGE E. PATAKI

Rep. of Garrison; born June 24, 1945 in Peekskill, NY; JD Columbia University, 1970; BA Yale University, 1967; attorney; mayor of Peekskill 1982-84; State Assembly 1985-92; State Senate 1993-94; elected governor in 1994, term ends 1999.

SENATORS

DANIEL P. MOYNIHAN ..... (202) 224-4451

Dem. of Pindars Corners; senior senator; born March 16, 1927 in Tulsa, OK; PhD Fletcher School of Law and Diplomacy, 1961; served as cabinet or subcabinet officer to Presidents Kennedy, Johnson, Nixon and Ford; elected to the U.S. Senate in 1976, 4th term ends in 2001.

ALFONSE M. D'AMATO ..... (202) 224-6542

Rep. of Island Park; junior senator; born Aug. 1, 1937 in Brooklyn; JD Syracuse Law School, 1961; admitted to the bar in 1962; served 7 years as supervisor, Town of Hempstead, presiding supervisor, 1977-80; elected to the U.S. Senate in 1980, 3rd term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/MICHAEL FORBES ..... (202) 225-3826

Rep. of Quogue; born July 16, 1953 in Riverhead; BA SUNY at Albany; businessman; public relations; chief of staff to U.S. Rep. Connie Mack, 1985-86; liaison to U.S. House of Representatives for U.S. Chamber of Commerce 1993-94; elected to Congress in 1994—1st term.

2nd/RICK LAZIO ..... (202) 225-3335

Rep. of Bay Shore/Brightwaters; born March 13, 1958 in Amityville; JD American Univ. School of Law, 1983; AB Vasser College, 1980; member, Suffolk County Legislature 1989-92; first elected to Congress in 1992—2nd term.

3rd/PETER KING ..... (202) 225-7896

Rep. of Seaford; born April 5, 1944 in Manhattan; JD Univ. of Notre Dame Law School, 1968; BA St. Francis College in Brooklyn, 1965; attorney; member, Hempstead Town Council 1977-81, Nassau County Comptroller 1981-92; first elected to Congress in 1992—2nd term.

4th/DANIEL FRISA .....

Rep. of Westbury; 1955 in Westbury; University, 1977; s. nior store manager; Long Island Deve owner, direct mail semblyman 1985- Congress in 1994–

5th/GARY ACKERMAN .....

Dem. of Jamaica; 1942 in Brooklyn; lege, 1965; teacher; lisher; member, Sta 83; first elected to Co 7th term.

6th/FLOYD FLAKE .....

Dem. of Rosedale; 1945 in Los Angele coln Univ., 1969; e man of several comm pastor, Allen A.M.E present; first elected 1986—5th term.

7th/THOMAS J. MANTON .....

Dem. of Queens; bo in New York City; Univ., 1962; attorney ber, city council 1970 to Congress in 1984

8th/ JERRY NADLER .....

Dem. of Manhattan 1947 in Brooklyn; JD School, 1978; Colum attorney; member, S 1976-92; first elect in 1992—2nd term.

YNIHAN ..... (202) 224-4451
Dem. of Pindars Corners; senior senator; born March 16, 1927 in Tulsa, OK; PhD Fletcher School of Law and Diplomacy, 1961; served as cabinet or subcabinet officer to Presidents Kennedy, Johnson, Nixon and Ford; elected to the U.S. Senate in 1976, 4th term ends in 2001.

AMATO ..... (202) 224-6542
Rep. of Island Park; junior senator; born Aug. 1, 1937 in Brooklyn; JD Syracuse Law School, 1961; admitted to the bar in 1962; served 7 e supervisor, Town of I, presiding supervisor, 9 elected to the U.S. Senate 1980, 3rd term ends in 1999.

REPRESENTATIVES

RBES ..... (202) 225-3826
ep. of Quogue; born July 16, 1953 Riverhead; BA SUNY at Albany; sinessman; public relations; chief staff to U.S. Rep. Connie Mack, 85-86; liaison to U.S. House of presentatives for U.S. Chamber Commerce 1993-94; elected to ngress in 1994—1st term.

..... (202) 225-3335
p. of Bay Shore/Brightwaters; n March 13, 1958 in Amityville; American Univ. School of Law, 83; AB Vasser College, 1980; mber, Suffolk County Legisla- e 1989-92; first elected to Con- ss in 1992—2nd term.

..... (202) 225-7896
. of Seaford; born April 5, 1944 Manhattan; JD Univ. of Notre me School, 1968; BA St. ge in Brooklyn, 1965; mber, Hempstead Town nch 1977-81, Nassau County nptroller 1981-92; first elected ongress in 1992—2nd term.

4th/DANIEL FRISA ..... (202) 225-5516

Rep. of Westbury; born April 27, 1955 in Westbury; BS St. John's University, 1977; salesman and senior store manager; vice-president, Long Island Development Corp.; owner, direct mail firm; State Assemblyman 1985-92; elected to Congress in 1994—1st term.

5th/GARY ACKERMAN ..... (202) 225-2601

Dem. of Jamaica; born Nov. 19, 1942 in Brooklyn; BA Queens College, 1965; teacher; newspaper publisher; member, State Senate 1979-83; first elected to Congress in 1983—7th term.

6th/FLOYD FLAKE ..... (202) 225-3461

Dem. of Rosedale; born Jan. 30, 1945 in Los Angeles, CA; BA Lincoln Univ., 1969; educator; chairman of several community projects; pastor, Allen A.M.E. Church 1976-present; first elected to Congress in 1986—5th term.

7th/THOMAS J. MANTON ..... (202) 225-3965

Dem. of Queens; born Nov. 3, 1932 in New York City; LLB St. Johns Univ., 1962; attorney 1963-84; member, city council 1970-84; first elected to Congress in 1984—6th term.

8th/ JERRY NADLER ..... (202) 225-5635

Dem. of Manhattan; born June 13, 1947 in Brooklyn; JD Fordham Law School, 1978; Columbia Univ., 1970; attorney; member, State Assembly 1976-92; first elected to Congress in 1992—2nd term.

9th/CHARLES E. SCHUMER ..... (202) 225-6616

Dem. of Brooklyn; born Nov. 23, 1950 in Brooklyn; JD Harvard Law School, 1974; member, State Assembly 1975-80; first elected to Congress in 1980—8th term.

10th/EDOLPHUS "ED" TOWNS ..... (202) 225-5936

Dem. of Brooklyn; born July 21, 1934 in Chadburn, NC; MSW Adelphi Univ., 1973; hospital administrator 1965-71; district leader, deputy borough president; first elected to Congress in 1982—7th term.

11th/MAJOR R. OWENS ..... (202) 225-6231

Dem. of Brooklyn; born June 28, 1936 in Memphis, TN; MS Atlanta Univ., 1957; chairman, C.O.R.E., Brooklyn 1964-66; commissioner, Community Dev. Agency 1968-73; member, State Senate 1974-82; first elected to Congress in 1982—7th term.

12th/NYDIA VELASQUEZ ..... (202) 225-2361

Dem. of Brooklyn; born March 22, 1953 in Yabucoa, PR; MA New York Univ., 1976; columnist; member, New York City Council 1984-92; first elected to Congress in 1992—2nd term.

13th/SUSAN MOLINARI ..... (202) 225-3371

Rep. of Staten Island; born Mar. 27, 1958 in Staten Island; MA, State Univ. of NY at Albany, 1981; minority leader, New York City Council 1985-90; first elected to Congress in 1990—4th term.

14th/ CAROLYN MALONEY ..... (202) 225-7944

Dem. of New York City; born Feb. 18, 1948 in Greensboro, NC; AB Greensboro College; member, New York City Council, 1982-92; first elected to Congress in 1992—2nd term.

15th/CHARLES B. RANGEL ..... (202) 225-4365

Dem. of New York City; born June 11, 1930 in Harlem; LLB St. John's Univ. Law School, 1960; counsel of N.Y.C. Housing and Redevelopment Board; member, State Assembly 1967-70; first elected to Congress in 1970—13th term.

16th/JOSE E. SERRANO ..... (202) 225-4361

Dem of Bronx; born Oct. 24, 1943 in Mayaguez, PR; attended Lehman College and City Univ. of NY; U.S. Army, 1964-66; member, State Assembly, 1975-90; first elected to Congress in 1990—4th term.

17th/ELIOT ENGEL ..... (202) 225-2464

Dem. of Bronx; born Feb. 18, 1947 in Bronx Cty.; JD NY Law School, 1987; teacher; guidance counselor; member, State House 1977-88; first elected to Congress in 1988—4th term.

18th/NITA LOWEY ..... (202) 225-6506

Dem. of Harrison; born July 5, 1937 in the Bronx; BA Mt. Holyoke College, 1959; asst. secty. of state 1985-87; first elected to Congress in 1988—4th term.

19th/SUE W. KELLY ..... (202) 225-5441

Rep. of Katonah; born Sept. 26, 1936 in Lima, OH; MA Sarah Lawrence College, 1980; businesswoman; health care professional; adjunct professor of health advocacy at Sarah Lawrence College; political campaign management; congressional aide; elected to Congress in 1994—1st term.

20th/BENJAMIN A. GILMAN ..... (202) 225-3776

Rep. of Middletown; born Dec. 6, 1922 in Poughkeepsie; LLB New York Law School, 1950; practiced law; member, State Assembly 1967-72; first elected to Congress in 1972—12th term.

21st/MICHAEL R. McNULTY .... (202) 225-5076

Dem. of Green Island; born Sept. 16, 1947 in Troy; AB Holy Cross College, 1969; supervisor of Green Island 1970-77; mayor of Green Island 1977-83; member, State Assembly 1983-88; first elected to Congress in 1988—4th term.

22nd/GERALD B. SOLOMON .... (202) 225-5614

Rep. of Queensbury; born Aug. 14, 1930 in Okeechobee, FL; attended St. Lawrence Univ., N.Y.; insurance and investment broker; Queensbury town supervisor 1968-72; member, State Assembly 1973-78; first elected to Congress in 1978—9th term.

23rd/SHERWOOD L. BOEHLERT ..... (202) 225-3665

Rep. of New Hartford; born Sep 28, 1936 in Utica; AB Utica College, 1961; public relations 1961-64; chief of staff to two U.S. Congressmen 1964-78; Oneida Cty. executive 1979-82; first elected to Congress in 1982—7th term.

24th/JOHN McHUGH .....

Rep. of Pierrepont M
29, 1948 in Watert
Univ. of NY; memb
1984-92; first elect
in 1992—2nd term

25th/JAMES T. WALSH .....

Rep. of Syracuse;
1947 in Syracuse;
venture, 1970; Pea
72; case worker,
Dept. Social Serv
marketing executive
88; member, Syrac
trict Council 1978
Syracuse Common
88; first elected to Co
4th term.

26th/MAURICE HINCHEY .....

Dem. of Saugerties
1938 in Saugerties;
of New York at Ne
member, State Ass
first elected to Con
2nd term.

27th/BILL PAXON .....

Rep. of Williamsvi
29, 1954 in Buffal
College, 1977; Eri
ture 1979-82; mem
sembly 1983-88;
Congress in 1988—

28th/LOUISE SLAUGHTER .....

Dem. of Fairport;
1929 in Harlan Cty.,
of Ky., 1953; membe
Legislature 1976-79;
Assembly 1983-86;
Congress in 1986—

ELLY ..... (202) 225-5441

Rep. of Katonah; born Sept. 26, 1936 in Lima, OH; MA Sarah Lawrence College, 1980; businesswoman; health care professional; adjunct professor of health advocacy at Sarah Lawrence College; political campaign management; congressional aide; elected to Congress in 1994—1st term.

N A. GILMAN ..... (202) 225-3776

Rep. of Middletown; born Dec. 6, 1922 in Poughkeepsie; LLB New York Law School, 1950; practiced law; member, State Assembly 1967-72; first elected to Congress in 1972—1[illegible]m.

R. McNULTY .... (202) 225-5076

Dem. of Green Island; born Sept. 16, 1947 in Troy; AB Holy Cross College, 1969; supervisor of Green Island 1970-77; mayor of Green Island 1977-83; member, State Assembly 1983-88; first elected to Congress in 1988—4th term.

B. SOLOMON .... (202) 225-5614

Rep. of Queensbury; born Aug. 14, 1930 in Okeechobee, FL; attended St. Lawrence Univ., N.Y.; insurance and investment broker; Queensbury town supervisor 1968-72; member, State Assembly 1973-78; first elected to Congress in 1978—[illegible]th term.

D L.

..... (202) 225-3665

Rep. of New Hartford; born Sept. [illegible]8, 1936 in Utica; AB Utica College, 1961; public relations 1961-[illegible]4; chief of staff to two U.S. Con[illegible] 1964-78; Oneida Cty. [illegible] 1979-82; first elected to [illegible] in 1982—7th term.

24th/JOHN McHUGH ..... (202) 225-4611

Rep. of Pierrepont Manor; born Sept. 29, 1948 in Watertown; MA State Univ. of NY; member State Senate, 1984-92; first elected to Congress in 1992—2nd term.

25th/JAMES T. WALSH ..... (202) 225-3701

Rep. of Syracuse; born June 19, 1947 in Syracuse; BA St. Bonnaventure, 1970; Peace Corps 1970-72; case worker, Onondaga Cty. Dept. Social Services 1973-75; marketing executive, NYNEX 1976-88; member, Syracuse Third District Council 1978-85; president, Syracuse Common Council 1986-88; first elected to Congress in 1988—4th term.

26th/MAURICE HINCHEY ..... (202) 225-6335

Dem. of Saugerties; born Oct. 27, 1938 in Saugerties; MA State Univ. of New York at New Paltz, 1970; member, State Assembly 1974-92; first elected to Congress in 1992—2nd term.

27th/BILL PAXON ..... (202) 225-5265

Rep. of Williamsville; born Apr. 29, 1954 in Buffalo; BA Canisius College, 1977; Erie Cty. legislature 1979-82; member, State Assembly 1983-88; first elected to Congress in 1988—4th term.

28th/LOUISE SLAUGHTER ..... (202) 225-3615

Dem. of Fairport; born Aug. 14, 1929 in Harlan Cty., KY; MS Univ. of Ky., 1953; member, Monroe Cty. Legislature 1976-79; member, State Assembly 1983-86; first elected to Congress in 1986—5th term.

29th/JOHN J. LaFALCE ..... (202) 225-3231

Dem. of Tonawanda; born Oct. 6, 1939 in Buffalo; JD Villanova Law School, 1964; practiced law in Buffalo; member, State Senate 1971-72, Assembly 1973-74; first elected to Congress in 1974—11th term.

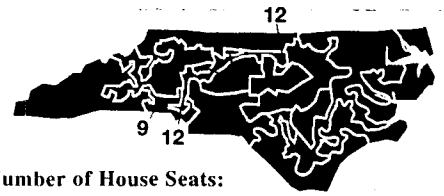
30th/JACK QUINN ..... (202) 225-3306

Rep. of Hamburg; born April 13, 1951 in South Buffalo; MA State Univ. of New York at Buffalo; BA Siena College; teacher; first elected to Congress in 1992—2nd term.

31st/AMO HOUGHTON, JR. ..... (202) 225-3161

Rep. of Corning; born Aug. 7, 1926 in Corning; MBA Harvard Business School, 1952; with Corning Glass Works 1951-86, pres. 1961-64, chairman of the board 1964-83, chairman, exec. committee 1983-86; first elected to Congress in 1986—5th term.

NORTH CAROLINA



Number of House Seats:
8 Republicans 4 Democrats

GOVERNOR

JIM HUNT, JR.

Dem. of Lucama; born May 16, 1937 in Greensboro; BA and Masters in Agricultural Education from North Carolina State; JD University of North Carolina at Chapel Hill, 1964, Lieutenant governor 1972-76; attorney; beef cattle farmer; elected governor in 1992, term ends 1997.

SENATORS

JESSE HELMS ..... (202) 224-6342

Rep. of Raleigh; senior senator; born Oct. 18, 1921 in Monroe; attended Wake Forest College; journalist; admin. asst. in U.S. Senate 1951-53; member, Raleigh City Council 1957-61; v.p., WRAL-TV 1960-72; elected to the U.S. Senate in 1972, 4th term ends in 1997.

D.M. "LAUCH" FAIRCLOTH..... (202) 224-3154

Rep. of Clinton; junior senator; born January 14, 1928 in Sampson County; farmer, businessman; elected to the U.S. Senate in 1992—1st term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/ EVA CLAYTON ..... (202) 225-3101

Dem. of Warren County; born Sept. 16, 1934 in Savannah, GA; MS North Carolina Central Univ.; businesswoman; assistant secretary for community development 1977-81, Warren County Commissioner 1982-90; first elected to Congress in 1992—2nd term.

2nd/DAVID FUNDERBURK ..... (202) 225-4531

Rep. of Buies Creek; born April 28, 1944 in Langley Air Force Base, VA; PhD University of South Carolina, 1974; MA Wake Forest University, 1967; foundation consultant; professor, Wingate College and Campbell U.; U.S. Ambassador to Romania 1981-85; elected to Congress in 1994—1st term.

3rd/WALTER JONES, JR. ..... (202) 225-3415

Rep. of Farmville; born Feb. 10, 1943 in Farmville; BA Atlantic Christian College; businessman; president of the Judson Co., Inc., president of the Benefit Reserves, Inc.; State Representative 1982-92; primary candidate for U.S. House in 1992; elected to Congress in 1994—1st term.

4th/FRED HEINEMAN ..... (202) 225-1784

Rep. of Raleigh; born Dec. 28, 1929 in Bronx, NY; MA John Jay College; BA St. Francis College; retired police chief; member, NC Assn. of Chiefs of Police; Int'l Assn. of Chiefs of Police; no prior elected office; elected to Congress in 1994—1st term.

5th/RICHARD M. BURR ..... (202) 225-2071

Rep. of Winston-Salem; born Nov. 30, 1955 in Charlottesville, VA; BA Wake Forest University, 1978; businessman; state co-chairman North Carolina Taxpayers United; candidate for U.S. House 1992; elected to Congress in 1994—1st term.

6th/HOWARD COBLE ..... (202) 225-3065

Rep. of Greensboro; born March 18, 1931 in Greensboro; JD Univ. of NC School of Law, 1962; member, State House 1969-71, 1979-84; asst. U.S. atty., Middle District of NC 1969-73; commissioner, State Dept. of Revenue 1973-77; first elected to Congress in 1984—6th term.

7th/CHARLES ROSE ..... (202) 225-2731

Dem. of Fayetteville; born Aug. 10, 1939 in Fayetteville; LLB Univ. of NC, 1964; practicing attorney; chief district prosecutor, 12th Judicial District 1967-70; first elected to Congress in 1972—12th term.

8th/W. G. "BILL" HEFNER ..... (202) 225-3715

Dem. of Concord; born Apr. 11, 1930 in Elora, TN; broadcast executive; first elected to Congress in 1974—11th term.

9th/SUE MYRICK ..... (2

Rep. of Charlotte; bo in Tiffin, OH; Heidel mayor of Charlotte 1 nesswoman, preside Myrick Advertising, Public Relations; m dent Bush's Afford Commission; electe in 1994—1st term.

10th/CASS BALLENGER ..... (2

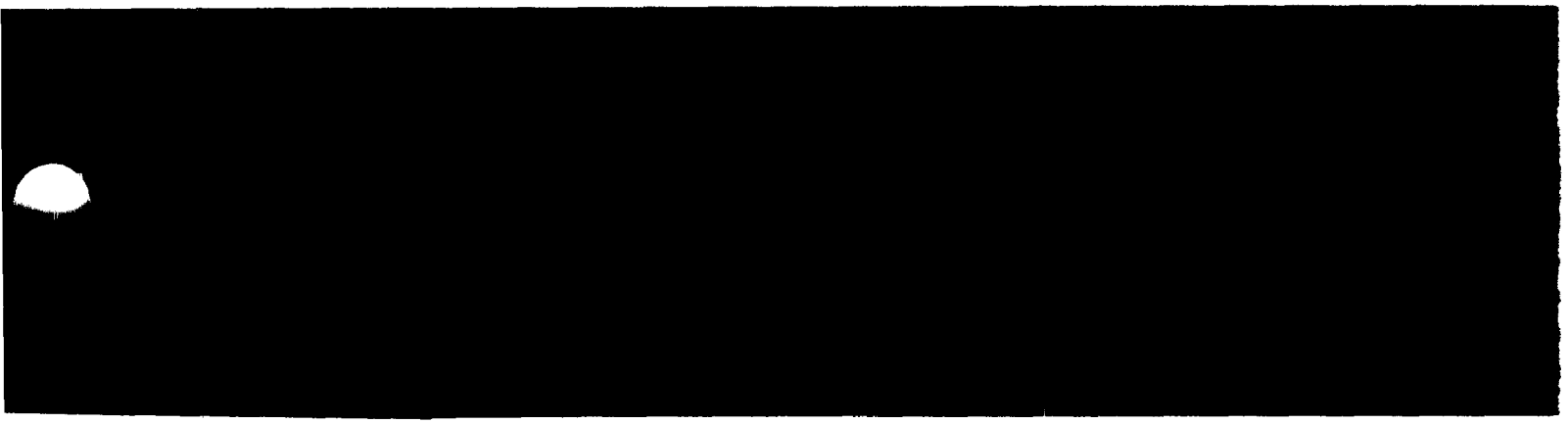
Rep. of Hickory; bor in Hickory; BA Am 1948; founder & pre Packaging Inc.; mem Cty. Board of Commi 74, chairman 1970-74; House 1974-76, Stat 86; first elected to Con 5th term.

11th/CHARLES H. TAYLOR ..... (2

Rep. of Brevard; bor in Brevard; JD Wake 1966; member, State 71, minority leader 1 Senate 1973-74; ma Transylvania Tree F first elected to Cong 3rd term.

12th/MELVIN WATT ..... (2

Dem. of Charlotte; 1945 in Mecklenbur Yale Univ. Law Sch torney, businessman; Senate 1984-86; first gress in 1992—2nd



EINEMAN ..... (202) 225-1784

Rep. of Raleigh; born Dec. 28, 1929 in Bronx, NY; MA John Jay College; BA St. Francis College; retired police chief; member, NC Assn. of Chiefs of Police; Int'l Assn. of Chiefs of Police; no prior elected office; elected to Congress in 1994—1st term.

) M. BURR ..... (202) 225-2071

Rep. of Winston-Salem; born Nov. 30, 1955 in Charlottesville, VA; BA Wake Forest University, 1978; businessman; state co-chairman North Carolina Taxpayers United; candidate for U.S. House 1992; elected gress in 1994—1st term.

COBLE ..... (202) 225-3065

Rep. of Greensboro; born March 18, 1931 in Greensboro; JD Univ. of NC School of Law, 1962; member, State House 1969-71, 1979-84; asst. U.S. atty., Middle District of NC 1969-73; commissioner, State Dept. of Revenue 1973-77; first elected to Congress in 1984—6th term.

ROSE ..... (202) 225-2731

Dem. of Fayetteville; born Aug. 10, 1939 in Fayetteville; LLB Univ. of NC, 1964; practicing attorney; chief district prosecutor, 12th Judicial District 1967-70; first elected to Congress in 1972—12th term.

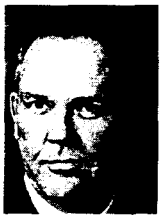
L" HEFNER ..... (202) 225-3715

Dem. of Concord; born Apr. 11, 1930 in Elora, TN; broadcast executive; first elected to Congress in 1974—11th term.

9th/SUE MYRICK ..... (202) 225-1976

Rep. of Charlotte; born Aug. 1, 1941 in Tiffin, OH; Heidelberg College; mayor of Charlotte 1988-91; businesswoman, president and CEO, Myrick Advertising, Marketing & Public Relations; member, President Bush's Affordable Housing Commission; elected to Congress in 1994—1st term.

10th/CASS BALLENGER ..... (202) 225-2576



Rep. of Hickory; born Dec. 6, 1926 in Hickory; BA Amherst College, 1948; founder & president, Plastic Packaging Inc.; member, Catawaba Cty. Board of Commissioners 1966-74, chairman 1970-74; member, State House 1974-76, State Senate 1976-86; first elected to Congress in 1986—5th term.

11th/CHARLES H. TAYLOR ..... (202) 225-6401

Rep. of Brevard; born Jan. 23, 1941 in Brevard; JD Wake Forest Univ., 1966; member, State House 1967-71, minority leader 1969-71, State Senate 1973-74; managing dir. of Transylvania Tree Farms 1960-88; first elected to Congress in 1990—3rd term.

12th/MELVIN WATT ..... (202) 225-1510

Dem. of Charlotte; born Aug. 26, 1945 in Mecklenburg County; JD Yale Univ. Law School, 1970; attorney, businessman; member, State Senate 1984-86; first elected to Congress in 1992—2nd term.

NORTH DAKOTA

Number of House Seats:
1 Democrat

GOVERNOR

EDWARD SCHAFER

Rep. of Bismarck; born Aug. 8, 1946 in Bismarck; MBA University of Denver, 1970; businessman; elected governor in 1992, term ends 1997.

SENATORS

KENT CONRAD ..... (202) 224-2043

Dem. of Bismarck; senior senator; born March 12, 1948 in Bismarck; MBA George Washington Univ., 1975; asst. to Tax Commissioner 1974-80; Tax Commissioner 1981-86; elected to U.S. Senate 1986; announced retirement in 1992; elected Dec. 1992 to complete Sen. Quentin N. Burdick's term ending in 1995; re-elected in 1994, 2nd term ends in 2001.

BYRON L. DORGAN ..... (202) 224-2551

Dem. of Bismarck; junior senator; born May 14, 1942 in Regent; MBA Univ. of Denver, 1966; worked for Martin Marietta and The Boeing Company; tax commissioner 1969-80; member of U.S. House 1980-93; elected to the U.S. Senate in 1992, 1st term ends in 1999.

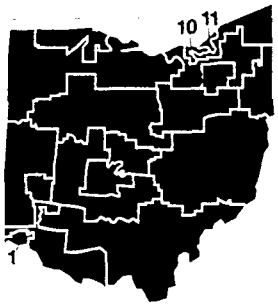
DISTRICT/REPRESENTATIVE

At Large/EARL POMEROY ..... (202) 225-2611

Dem. of Valley City; born Sept. 2, 1952 in Valley City; JD Univ. of North Dakota Law School, 1979; member, State House 1980-84, state insurance commissioner 1984-92; first elected to Congress in 1992—2nd term.

OHIO

Number of House Seats:
13 Republicans
mocrats



GOVERNOR

GEORGE V. VOINOVICH

Rep.; born July 15, 1936 in Cleveland; JD Ohio State Univ., 1961; asst. atty. general 1963-64; member, State House 1967-71; Cuyahoga Cty. auditor 1971-76; commissioner 1977-78; lt. governor 1979; mayor of Cleveland 1979-89; elected governor in 1990, re-elected in 1994, term ends 1999.

SENATORS

JOHN GLENN ..... (202) 224-3353

Dem. of New Concord; senior senator; born July 18, 1921 in Cambridge; BS Muskingum College, 1939; U.S. Marine Corps 1942-65; NASA astronaut 1959-65; president, Royal Crown International 1967-69; elected to the U.S. Senate in 1974, 4th term ends in 1999.

MIKE DEWINE ..... (202) 224-2315

Rep. of Green County; junior senator; born Jan. 5, 1947 in Springfield; JD Ohio Northern University, 1972; attorney 1972-80; State Senator 1981-82; member of U.S. House 1983-91; Lt. Governor 1991-94; elected to the U.S. Senate in 1994, 1st term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/STEVE CHABOT ..... (202) 225-2216

Rep. of Cincinnati; born Jan. 22, 1953 in Cincinnati; JD Chase College of Law-Northern Kentucky, 1978; attorney; school teacher; investigator; Cincinnati Councilman 1985-90; Hamilton County Commissioner 1990-94; ran for U.S. House, 1988; elected to Congress in 1994—1st term.

2nd/ROB PORTMAN ..... (202) 225-3164

Rep. of Cincinnati; born Dec. 19, 1955 in Cincinnati; JD Michigan Law School, 1984; attorney; White House Associate Counsel 1989-90; Dep. Asst. to the President and Dir., White House Office of Leg. Affairs 1990-91; first elected to Congress in special election in 1993–2nd term.

3rd/TONY P. HALL ..... (202) 225-6465

Dem. of Dayton; born Jan. 16, 1942 in Dayton; AB Denison Univ, 1964; realtor; member, State House 1969-72, State Senate 1973-78; first elected to Congress in 1978—9th term.

4th/MICHAEL G. OXLEY ..... (202) 225-2676

Rep. of Findlay; born Feb. 11, 1944 in Findlay; JD Ohio State Univ., 1969; special agent, FBI 1969-71; member, State House 1973-81; first elected to Congress in 1981—8th term.

5th/PAUL E. GILLMOR ..... (202) 225-6405

Rep. of Port Clinton; born Feb. 1, 1939 in Tiffin; JD Univ. of Mich. Law School, 1964; attorney; member, State Senate 1967-88, Republican leader 1978-80, 1983-84, president 1981-82, 1985-88; first elected to Congress in 1988—4th term.

6th/FRANK A. CREMEANS ..... (2

Rep. of Gallipolis; 1943 in Chesire; MA sity, 1969; Kyger Cr perintendent 1975-7 teacher; founder, ov and president of Cr crete & Supply Co.; c gress in 1994—1st t

7th/DAVID HOBSON ..... (2

Rep. of Springfield; 1936 in Cincinnati; College of Law, 1963; Senate 1982-90, majo 88, president pro tem businessman; first el gress in 1990—3rd t

8th/JOHN A. BOEHNER ..... (2

Rep. of West Chest 17, 1949 in Cincinn Univ., 1977; townshi 84; member, State H businessman; first e gress in 1990—3rd t

9th/MARCY KAPTUR ..... (2

Dem. of Toledo; bor in Toledo; MUP U 1974; Urban Advis dent 1977-79; boa stitute of Urban Li thor; first elected 1982—7th term.

10th/MARTIN HOKE ..... (

Rep. of Cleveland; 1952 in Lakewood; ern Reserve Univ. 1980; BA Amherst attorney, businessm to Congress in 1992

LTV Steel: Clevela

S/REPRESENTATIVES

HABOT ..... (202) 225-2216

Rep. of Cincinnati; born Jan. 22, 1953 in Cincinnati; JD Chase College of Law-Northern Kentucky, 1978; attorney; school teacher; investigator; Cincinnati Councilman 1985-90; Hamilton County Commissioner 1990-94; ran for U.S. House, 1988; elected to Congress in 1994—1st term.

RTMAN ..... (202) 225-3164

Rep. of Cincinnati; born Dec. 19, 1955 in Cincinnati; JD Michigan Law School, 1984; attorney; White House Associate Counsel 1989-90; Asst. to the President and Dir., House Office of Leg. Affairs -91; first elected to Congress in special election in 1993–2nd term.

HALL ..... (202) 225-6465

Dem. of Dayton; born Jan. 16, 1942 in Dayton; AB Denison Univ, 1964; realtor; member, State House 1969-72, State Senate 1973-78; first elected to Congress in 1978—9th term.

L G. OXLEY ..... (202) 225-2676

Rep. of Findlay; born Feb. 11, 1944 in Findlay; JD Ohio State Univ., 1969; special agent, FBI 1969-71; member, State House 1973-81; first elected to Congress in 1981—8th term.

GILLMOR ..... (202) 225-6405

Rep. of Port Clinton; born Feb. 1, 1939 in Tiffin; JD Univ. of Mich. Law School, 1964; attorney; member, State Senate 1967-88, Repub- eader 1978-80, 1983-84, presi- 981-82, 1985-88; first elected ngress in 1988—4th term.

6th/FRANK A. CREMEANS ..... (202) 225-5705

Rep. of Gallipolis; born April 5, 1943 in Chesire; MA Ohio University, 1969; Kyger Creek school superintendent 1975-76; counselor; teacher; founder, owner, operator and president of Cremeans Concrete & Supply Co.; elected to Congress in 1994—1st term.

7th/DAVID HOBSON ..... (202) 225-4324

Rep. of Springfield; born Oct. 17, 1936 in Cincinnati; JD Ohio State College of Law, 1963; member, State Senate 1982-90, majority whip 1986-88, president pro tempore 1988-90; businessman; first elected to Congress in 1990—3rd term.

8th/JOHN A. BOEHNER ..... (202) 225-6205

Rep. of West Chester; born Nov. 17, 1949 in Cincinnati; BS Xavier Univ., 1977; township trustee 1981-84; member, State House 1984-90; businessman; first elected to Congress in 1990—3rd term.

9th/MARCY KAPTUR ..... (202) 225-4146

Dem. of Toledo; born June 17, 1946 in Toledo; MUP Univ. of Mich., 1974; Urban Advisor to the President 1977-79; board member, Institute of Urban Life 1979-82; author; first elected to Congress in 1982—7th term.

10th/MARTIN HOKE ..... (202) 225-5871

Rep. of Cleveland; born May 18, 1952 in Lakewood; JD Case Western Reserve Univ. School of Law, 1980; BA Amherst College, 1973; attorney, businessman; first elected to Congress in 1992—2nd term.

LTV Steel: Cleveland

11th/LOUIS STOKES ..... (202) 225-7032

Dem. of Cleveland; born Feb. 23, 1925 in Cleveland; JD Cleveland Marshall Law School, 1953; practicing attorney in Cleveland since 1954; first elected to Congress in 1968—14th term.

LTV Steel: Cleveland

12th/JOHN KASICH ..... (202) 225-5355

Rep. of Westerville; born May 13, 1952 in McKees Rocks, PA; BA Ohio State Univ., 1974; admin. asst. to State Senator 1975-77; member, State Senate 1979-82; first elected to Congress in 1982—7th term.

13th/SHERROD BROWN ..... (202) 225-3401

Dem. of Chippewa Lake; born Nov. 9, 1952 in Mansfield; MA Ohio State Univ., 1981; BA Yale Univ., 1974; member, State House 1975-83, Ohio Secretary of State 1983-91; first elected to Congress in 1992—2nd term.

LTV Steel: Elyria, Lorain

14th/TOM SAWYER ..... (202) 225-5231

Dem. of Akron; born Aug. 15, 1945 in Akron; MA Univ. of Akron, 1970; member, State House 1976-82; mayor of Akron 1984-86; first elected to Congress in 1986—5th term.

15th/ DEBORAH PRYCE ..... (202) 225-2015

Rep. of Dublin; born July 29, 1951 in Warren; JD Capital Univ. Law School, 1976; municipal court judge 1985-92; first elected to Congress in 1992—2nd term.

LTV Steel: Columbus

16th/RALPH REGULA ..... (202) 225-3876

Rep. of Navarre; born Dec. 3, 1924 in Beach City; LLB William McKinley School of Law, 1952; attorney; member, Ohio Board of Education 1960-64; member, state legislature 1965-72; first elected to Congress in 1972—12th term.

17th/JAMES TRAFICANT ..... (202) 225-5261

Dem. of Poland; born May 8, 1941 in Youngstown; MS Youngstown St. Univ. 1976; director, Mahoning Cty. Drug Program 1971-81; Sheriff, Mahoning Cty. 1981-84; first elected to Congress in 1984—6th term.

LTV Steel: Warren, Youngstown

18th/BOB NEY ..... (202) 225-6265

Rep. of St. Clairsville; born July 5, 1954 in Wheeling, WV; BS Ohio State University, 1976; safety director, City of Bellaire; Health and Education Program Manager, Ohio Office of Appalachia; State Representative 1981-82; State Senator 1984-94; chairman, Finance Committee; elected to Congress in 1994—1st term.

19th/STEVEN C. LATOURETTE ..... (202) 225-5731

Rep. of Madison Village; born July 22, 1954 in Cleveland Heights; JD Cleveland State University; Lake County Budget Commission; chairman, County Task Force on Domestic Violence; Lake County Prosecuting Attorney 1988-94; elected to Congress in 1994—1st term.

LTV Steel: Grand River, Independence

OKLAHOMA

Number of House Seats:
5 Republicans 1 Democrat

GOVERNOR

FRANK KEATING

Rep. of Tulsa; born Feb. 10, 1944 in St. Louis, MO; PhD Universitiy of Oklahoma; BA Georgetown University; FBI agent; U.S. Attorney for Northern District of Oklahoma; Associate Attorney General; counsel and acting deputy secretary, U.S. Department of Housing and Urban Development; elected governor in 1994, term ends 1999.

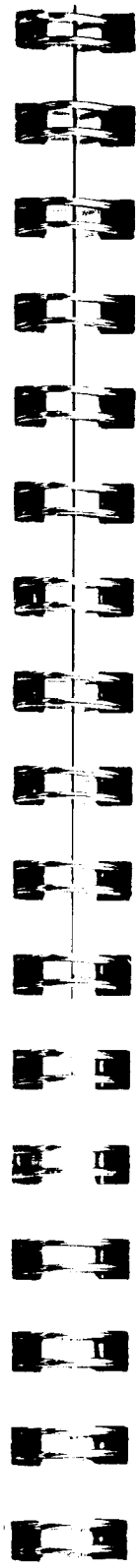
SENATORS

DON NICKLES ..... (202) 224-5754

Rep. of Ponca City; senior senator; born Dec. 6, 1948 in Ponca City; BBA Okla. State Univ. 1971; gen. mgr. of Nickles Machine Corp. 1974-80; member, State Senate 1979-80; elected to the U.S. Senate in 1980. 3rd term ends in 1999.

JAMES INHOFE ..... (202) 224-4721

Rep. of Tulsa; junior senator; born Nov. 17, 1934 in Des Moines, IA; BA University of Tulsa, 1959; former pres., Quaker Life Insurance Co.; member, State House 1967-69, State Senate 1969-77; mayor of Tulsa 1978-84; member of U.S. House 1986-94; elected to the U.S. Senate in 1994, 1st term ends in 1997.



DISTRICTS/REPRESENT

1st/STEVE LARGENT .....

Rep. of Tulsa; born in Tulsa; BS Tulsa U NFL player; marke volunteer forensic Tulsa Police Dept. lowship of Christi. prior elected office; el in 1994—1st term.

2nd/TOM COBURN .....

Rep. of Muskogee; 1948 in Casper, W sity of Oklahoma, 198 physician; manufac Ophthalmic Divis Optical 1970-78; n trips to Haiti 1985 elected to Congre term.

3rd/BILL K. BREWSTER .....

Dem. of Marietta; b in Ardmore; BS Sou State Univ., 1965; macist; member, St 90; first elected to Co 3rd term.

4th/J.C. WATTS .....

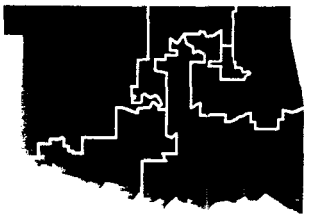
Rep. of Norman; bo in Eufaula; BS Uni homa, 1981; Canadia player 1981-1986; board member, Ok Olympics; Oklaho Commission 1990-9 gress in 1994—1st

5th/ERNEST ISTOOK .....

Rep. of Oklahoma 11, 1950 in Ft. Wor homa City Univ., State House 1986- to Congress in 199

)MA

ıse Seats:
1 Democrat



R

ING

Tulsa; born Feb. 10, 1944 uis, MO; PhD Universitiy ahoma; BA Georgetown University; FBI agent; U.S. Attorney for Northern District of Oklahoma; Associate Attorney General; counsel and acting deputy secretary, U.S. Department of Housing and Urban Development; elected governor in 1994, term ends 1999.

..... (202) 224-5754

Rep. of Ponca City; senior senator; born Dec. 6, 1948 in Ponca City; BBA Okla. State Univ. 1971; gen. mgr. of Nickles Machine Corp. 1974-80; member, State Senate 1979-80; elected to the U.S. Senate in 1980, 3rd term ends in 1999.

E ..... (202) 224-4721

Rep. of Tulsa; junior senator; born Nov. 17, 1934 in Des Moines, IA; BA University of Tulsa, 1959; former pres., Quaker Life Insurance Co.; member, State House 1967-69, State Senate 1969-77; mayor of Tulsa 1978-84; member of U.S. House 19 94; elected to the U.S. Senate i 1st term ends in 1997.

DISTRICTS/REPRESENTATIVES

1st/STEVE LARGENT ..... (202) 225-2211

Rep. of Tulsa; born Sept. 28, 1954 in Tulsa; BS Tulsa University, 1976; NFL player; marketing consultant; volunteer forensic chemist, City of Tulsa Police Dept.; member, Fellowship of Christian Athletes; no prior elected office; elected to Congress in 1994—1st term.

2nd/TOM COBURN ..... (202) 225-2701

Rep. of Muskogee; born March 14, 1948 in Casper, WY; MD University of Oklahoma, 1983; family practice physician; manufacturing manager, Ophthalmic Division of Coburn Optical 1970-78; medical mission trips to Haiti 1985 and Iraq 1992; elected to Congress in 1994—1st term.

3rd/BILL K. BREWSTER ..... (202) 225-4565

Dem. of Marietta; born Nov. 8, 1941 in Ardmore; BS Southwestern Okla. State Univ., 1965; cattleman; pharmacist; member, State House 1982-90; first elected to Congress in 1990—3rd term.

4th/J.C. WATTS ..... (202) 225-6165

Rep. of Norman; born Nov. 18, 1957 in Eufaula; BS University of Oklahoma, 1981; Canadian Football League player 1981-1986; youth minister; board member, Oklahoma Special Olympics; Oklahoma Corporation Commission 1990-94; elected to Congress in 1994—1st term.

5th/ERNEST ISTOOK ..... (202) 225-2132

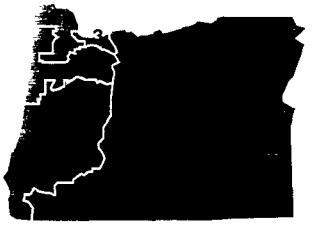
Rep. of Oklahoma City; born Feb. 11, 1950 in Ft. Worth, TX; JD Oklahoma City Univ., 1977; member, State House 1986-92; first elected to Congress in 1992—2nd term.

6th/FRANK D. LUCAS ..... (202) 225-5565

Rep. of Roger Mills County; born Jan. 6, 1960 in Roger Mills County; BS Oklahoma State University, 1982; cattle rancher; member Farm Bureau; State Representative 1986-94; first elected to Congress in a special election May 1994; re-elected to Congress in 1994—2nd term.

OREGON

Number of House Seats:
2 Republicans
3 Democrats



GOVERNOR

JOHN KITZHABER

Dem. of Eugene; born Mar. 5, 1947 in Colfax, WA; MD University of Oregon; BS Dartmouth College; emergency physician; faculty, Estes Park Institute; State Representative 1978-80; State Senator 1980-92; president of State Senate 1985-92; elected governor in 1994, term ends 1999.

SENATORS

MARK O. HATFIELD ..... (202) 224-3753

Rep. of Portland; senior senator; born July 12, 1922 in Dallas, OR; MA Stanford Univ., 1948; assoc. professor, political science, dean of students, Willamette Univ. 1948-57; member, state legislature 1950-56; governor 1958-66; elected to the U.S. Senate in 1966, 5th term ends in 1997.

BOB PACKWOOD ..... **(202) 224-5244**

Rep. of Portland; junior senator; born Sept. 11, 1932 in Portland; LLB New York Univ. School of Law, 1957; attorney; member, State House 1963-69; elected to the U.S. Senate in 1968, 5th term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/ELIZABETH FURSE ..... **(202) 225-0855**

Dem. of Hillsboro; born Oct. 13, 1936 in Nairobi, Kenya; BA Evergreen State College, 1974; human rights/enviornmental activist; winemaker; chair, Oregon Peace Institute; first elected to Congress in 1992—2nd term.

2nd/WES COOLEY ..... **(202) 225-6730**

Rep. of Deschutes; born March 28, 1932 in Los Angeles, CA; BS University of Southern California, 1958; rancher; vice-president of Viratek, a division of ICN Pharmaceuticals; State Senator 1992-94; vice-chair of the Senate Water Policy Committee; elected to Congress in 1994—1st term.

3rd/RON WYDEN ..... **(202) 225-4811**

Dem. of Portland; born May 3, 1949 in Wichita, KS; JD Univ. of OR School of Law, 1974; director, OR Legal Services for the Elderly 1977-79; instructor, Portland State Univ. 1979-80; first elected to Congress in 1980—8th term.

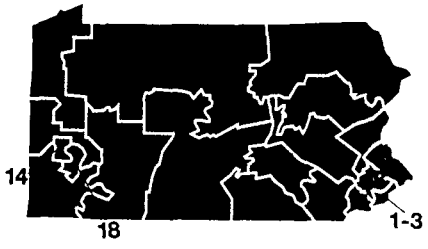
4th/PETER DeFAZIO ..... **(202) 225-6416**

Dem. of Springfield; born May 27, 1947 in Needham, MA; MA Univ. of OR, 1977; aide to U.S. Rep. Jim Weaver 1977-82; Lane Cty. commissioner 1982-86; first elected to Congress in 1986—5th term.

5th/JIM BUNN ..... **(202) 225-5711**

Rep. of Whiteson; born Dec. 12, 1956 in McMinnville; BA Northwest Nazarene College; AA Chemeketa Community College; farmer; State GOP Executive Director and Treasurer; State Senator 1987-94; Republican Senate Whip 1990-94; elected to Congress in 1994—1st term.

PENNSYLVANIA



Number of House Seats:
10 Republicans 11 Democrats

GOVERNOR

THOMAS RIDGE

Rep. of Erie; born Aug. 26, 1945 in Munhall; JD Dickinson Law School, 1972; U.S. Army 1968-70; attorney; assistant district attorney, Erie Cty. 1978-82; member of U.S. House 1982-95; elected governor in 1994, term ends 1999.

SENATORS

ARLEN SPECTER ..... **(202) 224-4254**

Rep. of Philadelphia; senior senator; born Feb. 12, 1930 in Wichita, KS; LLB Yale Law School, 1956; asst. dist. atty., Philadelphia 1959-64; dist. atty. 1966-74; asst. counsel, Warren Commission 1964; elected to the U.S. Senate in 1980, 3rd term ends in 1999.

RICK SANTORUM ..... (

Rep. of Mt. Lebano
tor; born May 10, 19
ter, VA; JD Dickin
Law, 1986; political
admin. asst. to stat
86; attorney; membe
1991-95; elected to
in 1994, 1st term e

DISTRICTS/REPRESENTA

1st/THOMAS M. FOGLIETTA ..... (

Dem. of Philadelph
1928 in Philadelph
Univ., 1952; pract
member, Philadelp
cil 1955-75; regiona
of Labor 1976; first
gress in 1980—8th

2nd/CHAKA FATTAH .....

Dem. of Philadelp
21, 1956 in Philade
versity of Pennsyl
nity College of Ph
ernment service; S
tive 1985-88; Stat
94; candidate for (
cial election 1991;
gress in 1994—1st

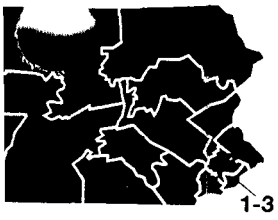
3rd/ROBERT A. BORSKI .....

Dem. of Philadel
20, 1948 in Philade
of Baltimore, 1971;
ager, Raymond J
ates 1972-76; mem
1976-82; first ele
in 1982—7th term

..... (202) 225-5711

Rep. of Whiteson; born Dec. 12, 1956 in McMinnville; BA Northwest Nazarene College; AA Chemeketa Community College; farmer; State GOP Executive Director and Treasurer; State Senator 1987-94; Republican Senate Whip 1990-94; elected to Congress in 1994—1st term.

VANIA



e Seats:
11 Democrats

E

Rep. of Erie; born Aug. 26, 1945 in Munhall; JD Dickinson Law School, 972; U.S. Army 1968-70; attorney; assistant district attorney, Erie Cty. 1978-82; member of U.S. House 982-95; elected governor in 1994, erm ends 1999.

R ..... (202) 224-4254

ep. of Philadelphia; senior senator; born Feb. 12, 1930 in Wichita, S[illegible] Yale Law School, 1956; [illegible]atty., Philadelphia 1959-[illegible]atty. 1966-74; asst. counl, Warren Commission 1964; elected the U.S. Senate in 1980, 3rd term ids in 1999.

RICK SANTORUM ..... (202) 224-6324

Rep. of Mt. Lebanon; junior senator; born May 10, 1958 in Winchester, VA; JD Dickinson School of Law, 1986; political consultant 1980; admin. asst. to state senator 1981-86; attorney; member of U.S. House 1991-95; elected to the U.S. Senate in 1994, 1st term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/THOMAS M. FOGLIETTA ..... (202) 225-4731

Dem. of Philadelphia; born Dec. 3, 1928 in Philadelphia; JD Temple Univ., 1952; practicing attorney; member, Philadelphia City Council 1955-75; regional director, Dept. of Labor 1976; first elected to Congress in 1980—8th term.

2nd/CHAKA FATTAH ..... (202) 225-4001

Dem. of Philadelphia; born Nov. 21, 1956 in Philadelphia; MA University of Pennsylvania; Community College of Philadelphia; government service; State Representative 1985-88; State Senator 1989-94; candidate for Congress in special election 1991; elected to Congress in 1994—1st term.

3rd/ROBERT A. BORSKI ..... (202) 225-8251

Dem. of Philadelphia; born Oct. 20, 1948 in Philadelphia; BA Univ. of Baltimore, 1971; operations manager, Raymond James & Associates 1972-76; member, State House 1976-82; first elected to Congress in 1982—7th term.

4th/RON KLINK ..... (202) 225-2565

Dem. of Pittsburgh; born Sept. 23, 1951; TV news anchor, restaurateur; first elected to Congress in 1992—2nd term.

LTV Steel: Aliquippa

5th/WILLIAM F. CLINGER, JR ..... (202) 225-5121.

Rep. of Warren; born Apr. 4, 1929 in Warren; LLB Univ. of Va., 1965; practicing attorney; chief counsel, Economic Development Administration 1975-77; first elected to Congress in 1978—9th term.

6th/TIM HOLDEN ..... (202) 225-5546

Dem. of St.Clair; born March 5, 1957 in St. Clair; BS Bloomsburg Univ., 1980; real estate agent/insurance broker; Schuykill County Sheriff 1985-92; first elected to Congress in 1992—2nd term.

7th/CURT WELDON ..... (202) 225-2011

Rep. of Aston; born July 22, 1947 in Marcus Hook; BA West Chester Univ., 1969; teacher 1969-76; dir., training and manpower development, SIGNA Corp. 1976-81; mayor of Marcus Hook 1977-82; chairman, Delaware cty. council 1985-86; first elected to Congress in 1986—5th term.

8th/JAMES C. GREENWOOD ..... (202) 225-4276

Rep. of Erwinna; born May 4, 1951 in Newtown; BA Dickinson College, 1973; member, State House 1980-86, State Senate 1986-92; first elected to Congress in 1992—2nd term.

9th/E. G. "BUD" SHUSTER ..... (202) 225-2431

Rep. of Everett; born Jan. 23, 1932 in Glassport; PhD American Univ., 1967; former business executive; first elected to Congress in 1972—12th term.

10th/JOSEPH M. McDADE ..... (202) 225-3731

Rep. of Scranton; born Sept. 29, 1931 in Scranton; LLB Univ. of Pa., 1956; attorney; city solicitor of Scranton in 1962; first elected to Congress in 1962—17th term.

11th/PAUL KANJORSKI ..... (202) 225-6511

Dem. of Nanticoke; born Apr. 2, 1937 in Nanticoke; Dickinson School of Law; state administrative law judge 1971-80; attorney; first elected to Congress in 1984—6th term.

12th/JOHN P. MURTHA ..... (202) 225-2065

Dem. of Johnstown; born June 17, 1932 in New Martinsville, WV; BA Univ. of Pittsburgh, 1962; member, State House 1969-74; first elected to Congress in 1974—12th term.

13th/JON D. FOX ..... (202) 225-6111

Rep. of Elkins Park; born April 22, 1947 in Abington; JD Wiedner University; BS Penn State University; attorney; Montgomery County Assistant D.A. 1976-80; State Representative 1984-91; vice-chairman, Montgomery County Board of Commissioners 1994; elected to Congress in 1994—1st term.

14th/WILLIAM J. COYNE ..... (202) 225-2301

Dem. of Pittsburgh; born Aug. 24, 1936 in Pittsburgh; BS Robert Morris College, 1965; member, State House 1971-74; member, Pittsburgh city council 1974-80; first elected to Congress in 1980—8th term.

LTV Steel: Pittsburgh

15th/PAUL McHALE ..... (202) 225-6411

Dem. of Bethlehem; born July 26, 1950 in Lehigh Valley; JD Georgetown Univ. Law Center, 1977; attorney; Major, U.S. Army 1968-74; member, State House 1982-91; first elected to Congress in 1992—2nd term.

16th/ROBERT S. WALKER ..... (202) 225-2411

Rep. of East Petersburg; born Dec. 23, 1942 in Bradford; MA Univ. of DE, 1968; teacher; legis. asst. to Rep. Eshleman 1967-74, admin. asst. 1974-77; first elected to Congress in 1976—10th term.

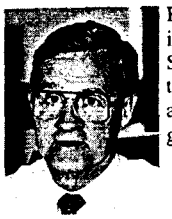
17th/GEORGE W. GEKAS ..... (202) 225-4315

Rep. of Harrisburg; born April 14, 1930 in Harrisburg; JD Dickinson College, 1958; U.S. Army; attorney; asst. dist. atty. 1960-66; member, State House 1966-74, State Senate 1976-82; first elected to Congress in 1982—7th term.

18th/MICHAEL DOYLE ..... (202) 225-2135

Dem. of Swissvale; born Aug. 5, 1953 in Pittsburgh; BS Penn State University, 1975; businessman; co-founder Eastgate Insurance Agency, Inc.; Swissvale Councilman 1977-81; chief of staff for state Senator Frank Pecora 1979-94; elected to Congress in 1994—1st term.

19th/WILLIAM F. GOODLING ...



Rep. of Jacobus; bo in Loganville; doc State Univ.; variou tions; superintende area schools; first gress in 1974—11t

20th/FRANK R. MASCARA .....

Dem. of Charleroi 1930 in Belle Vern nia University of nessman; public of Charleroi Chambe 1981-94; Washingt of Commissioners to Congress in 199

21st/PHILIP S. ENGLISH .....

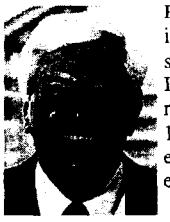
Rep. of Erie; born Erie; BA Universit nia; Erie City con chief of staff for st lissa Hart 1990 Executive Directo Finance Committee to Congress in 199

RHODE ISLAND

Number of House Seats:
2 Democrats

GOVERNOR

LINCOLN ALMOND



Rep. of Lincoln; bo in Pawtucket; JD sity, 1961; BS Univ Island; US Naval F rine Service 1953-(1969-78, 1981-82 elected governor i ends 1999.

J. COYNE ..... (202) 225-2301
Dem. of Pittsburgh; born Aug. 24, 1936 in Pittsburgh; BS Robert Morris College, 1965; member, State House 1971-74; member, Pittsburgh city council 1974-80; first elected to Congress in 1980—8th term.

LTV Steel: Pittsburgh

IALE ..... (202) 225-6411
Dem. of Bethlehem; born July 26, 1950 in Lehigh Valley; JD Georgetown Univ. Law Center, 1977; attorney; Major, U.S. Army 1968-74; member, State House 1982-91; first elected to ... ss in 1992—2nd term.

. WALKER ..... (202) 225-2411
Rep. of East Petersburg; born Dec. 23, 1942 in Bradford; MA Univ. of DE, 1968; teacher; legis. asst. to Rep. Eshleman 1967-74, admin. asst. 1974-77; first elected to Congress n 1976—10th term.

V. GEKAS ..... (202) 225-4315
Rep. of Harrisburg; born April 14, 930 in Harrisburg; JD Dickinson College, 1958; U.S. Army; attorney; asst. dist. atty. 1960-66; member, State House 1966-74, State Senate 976-82; first elected to Congress n 1982—7th term.

DOYLE ..... (202) 225-2135
Dem. of Swissvale; born Aug. 5, 953 in Pittsburgh; BS Penn State University, 1975; businessman; co-founder Eastgate Insurance Agency, nc.; Swissvale Councilman 1977-1 ... of staff for state Senator ... ora 1979-94; elected to ... in 1994—1st term.

19th/WILLIAM F. GOODLING ... (202) 225-5836

Rep. of Jacobus; born Dec. 5, 1927 in Loganville; doctoral studies PA State Univ.; various teaching positions; superintendent, Spring Grove area schools; first elected to Congress in 1974—11th term.

20th/FRANK R. MASCARA ..... (202) 225-4665

Dem. of Charleroi; born Jan. 19, 1930 in Belle Vernon; BS California University of PA, 1972; businessman; public official; chairman, Charleroi Chamber of Commerce 1981-94; Washington County Board of Commissioners 1980-94; elected to Congress in 1994—1st term.

21st/PHILIP S. ENGLISH ..... (202) 225-5406

Rep. of Erie; born June 20, 1956 in Erie; BA University of Pennsylvania; Erie City controller 1986-90; chief of staff for state Senator Melissa Hart 1990-94; Minority Executive Director, State Senate Finance Committee 1993-94; elected to Congress in 1994—1st term.

RHODE ISLAND

Number of House Seats:
2 Democrats

GOVERNOR

LINCOLN ALMOND

Rep. of Lincoln; born June 16, 1936 in Pawtucket; JD Boston University, 1961; BS University of Rhode Island; US Naval Reserve, Submarine Service 1953-61; US Attorney 1969-78, 1981-83; businessman; elected governor in 1994, 1st term ends 1999.

SENATORS

CLAIBORNE PELL ..... (202) 224-4642

Dem. of Newport; senior senator; born Nov. 22, 1918 in New York City; AM Columbia Univ., 1946; foreign service officer 1945-52; businessman; elected to the U.S. Senate in 1960, 6th term ends in 1997.

JOHN H. CHAFEE ..... (202) 224-2921

Rep. of Warwick; junior senator; born Oct. 22, 1922 in Providence; LLB Harvard Law School, 1950; practicing attorney; member, State House 1957-63; governor 1963-69; Secy. of the Navy 1969-72; elected to the U.S. Senate in 1976, 4th term ends in 2001.

DISTRICTS/REPRESENTATIVES

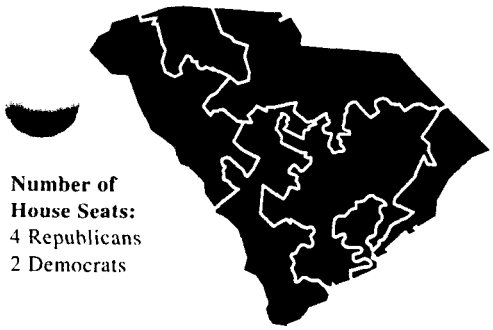
1st/PATRICK J. KENNEDY ..... (202) 225-4911

Dem. of Providence; born July 14, 1967 in Brighton MA; BS Providence College; board member, RI Special Olympics and RI Chapter of the National Committee for the Prevention of Child Abuse; State Representative 1988-94; chairman, House Rules Committee 1993-94; elected to Congress in 1994—1st term.

2nd/JACK REED ..... (202) 225-2735

Dem. of Cranston; born Nov. 12, 1949 in Providence; JD Harvard Law School, 1982; attorney; author; member, State Senate 1984-90; first elected to Congress in 1990—3rd term.

SOUTH CAROLINA



Number of House Seats:
4 Republicans
2 Democrats

GOVERNOR

DAVID BEASLEY

Rep. of Darlington County; born February 26, 1957 in Lamar; JD University of South Carolina; BS Clemson University; attorney; State Representative 1979-92; served as Majority Whip, Speaker pro tempore, and Majority Leader; elected governor in 1994, term ends 1998.

SENATORS

STROM THURMOND ..... (202) 224-5972

Rep. of Aiken; senior senator; born Dec. 5, 1902 in Edgefield; BS Clemson Univ., 1923; teacher; athletic coach; school superintendent; admitted to the SC Bar in 1930; judge; member, State Senate; governor 1947-51; Presidential candidate, States Rights Party 1948; elected to the U.S. Senate in 1954. 7th term ends in 1997.

ERNEST F. HOLLINGS ..... (202) 224-6121

Dem. of Charleston; junior senator; born Jan. 1, 1922 in Charleston; LLB Univ. of SC, 1947; lawyer; member, State House 1949-54; lt. governor 1955-58; governor 1959-63; elected to the U.S. Senate in 1966, 6th term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/MARK SANFORD, JR. ..... (202) 225-3176

Rep. of Charleston; born May 28, 1960 in Ft. Lauderdale, FL; MBA University of Virginia; BA Furman University; owner, real estate investment firm; farm manager; no prior elected office; elected to Congress in 1994—1st term.

2nd/FLOYD SPENCE ..... (202) 225-2452

Rep. of Lexington; born Apr. 9, 1928 in Columbia; JD Univ. of SC, 1956; member, State House 1956-62, State Senate 1966-70; first elected to Congress in 1970—13th term.

3rd/LINDSEY GRAHAM ..... (202) 225-5301

Rep. of Seneca; born July 9, 1955 in Pickens County; JD University of South Carolina; U.S. Air Force; Major, South Carolina Air National Guard; City Attorney for Central, SC; State Assemblyman 1993-94; elected to Congress in 1994—1st term.

4th/BOB INGLIS ..... (202) 225-6030

Rep. of Greenville; born Oct. 11, 1959 in Savannah, GA; JD Univ. of Virginia School of Law, 1984; AB Duke Univ., 1981; attorney; first elected to Congress in 1992—2nd term.

5th/JOHN M. SPRATT, JR. ..... (202) 225-5501.

Dem. of York; born Nov. 1, 1942 in Charlotte, NC; LLB Yale Univ., 1969; U.S. Army 1969-71; attorney; first elected to Congress in 1982—7th term.

6th/JAMES CLYBURN ..... (

Dem. of Columbia. 1940 in Sumter; BA State Univ., 1962; Human Affairs Com 92; first elected to Co 2nd term.

SOUTH DAKOTA

Number of House Seats:
1 Democrat

GOVERNOR

WILLIAM J. JANKLOW

Rep. of Brandon; 1939 in Chicago, Il of South Dakota, l sity of South Dak ney; state attorne 78; governor 197 governor in 1994.

SENATORS

LARRY PRESSLER .....

Rep. of Humbold born March 29, 19 JD and MA Harv Rhodes Scholar; House 1974-78; el Senate in 1978, 1997.

S/REPRESENTATIVES

NFORD, JR. ..... (202) 225-3176
Rep. of Charleston: born May 28, 1960 in Ft. Lauderdale, FL; MBA University of Virginia; BA Furman University; owner, real estate investment firm; farm manager; no prior elected office; elected to Congress in 1994—1st term.

'ENCE ..... (202) 225-2452
Rep. of Lexington: born Apr. 9, 1928 in Columbia; JD Univ. of SC. 19[illegible] ember, State House 1956-6[illegible] enate 1966-70; first elected to [illegible] ss in 1970—13th term.

GRAHAM ..... (202) 225-5301
Rep. of Seneca; born July 9, 1955 in Pickens County; JD University of South Carolina; U.S. Air Force; Major, South Carolina Air National Guard; City Attorney for Central, SC; State Assemblyman 1993-94; elected to Congress in 1994—1st term.

S ..... (202) 225-6030
Rep. of Greenville; born Oct. 11, 1959 in Savannah, GA; JD Univ. of Virginia School of Law, 1984; AB Duke Univ., 1981; attorney; first elected to Congress in 1992—2nd term.

'RATT, JR. ..... (202) 225-5501.
Dem. of York; born Nov. 1, 1942 in Charlotte, NC; LLB Yale Univ., 1969; [illegible] S. Army 1969-71; attorney [illegible] elected to Congress in 19[illegible] term.

6th/JAMES CLYBURN ..... (202) 225-3315

Dem. of Columbia; born July 21, 1940 in Sumter; BA South Carolina State Univ., 1962; South Carolina Human Affairs Commissioner, 1974-92; first elected to Congress in 1992—2nd term.

SOUTH DAKOTA

Number of House Seats:
1 Democrat

GOVERNOR

WILLIAM J. JANKLOW

Rep. of Brandon; born Sept. 13, 1939 in Chicago, IL; JD University of South Dakota, 1966; BS University of South Dakota, 1964; attorney; state attorney general 1974-78; governor 1979-86; re-elected governor in 1994, term ends 1999.

SENATORS

LARRY PRESSLER ..... (202) 224-5842

Rep. of Humboldt; senior senator; born March 29, 1942 in Humboldt; JD and MA Harvard Univ., 1971; Rhodes Scholar; member of U.S. House 1974-78; elected to the U.S. Senate in 1978, 3rd term ends in 1997.

THOMAS A. DASCHLE ..... (202) 224-2321

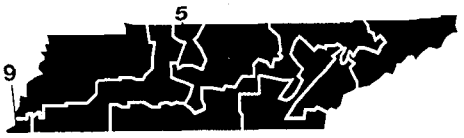
Dem. of Aberdeen; junior senator; born Dec. 9, 1947 in Aberdeen; BA SD State Univ., 1969; financial investment work; legis. aide to Sen. James Abourezk 1973-77; member of U.S. House 1979-86; elected to the U.S. Senate in 1986, 2nd term ends in 1999.

DISTRICT/REPRESENTATIVE

At Large/TIM JOHNSON ..... (202) 225-2801

Dem. of Vermillion; born Dec. 28, 1946 in Canton; JD Univ. of SD, 1975; budget advisor, MI Senate Appropriations Committee 1971-72; attorney 1975-86; member, State House 1978-82, State Senate 1982-86; Clay Cty. deputy states atty. 1985; first elected to Congress in 1986—5th term.

TENNESSEE



Number of House Seats:
5 Republicans 4 Democrats

GOVERNOR

DON SUNDQUIST

Rep. of Memphis; born Mar. 15, 1936 in Moline, Ill.; BA Augustana College, 1957; U.S. Navy 1957-59; manager, Jostens Co. 1961-72; president, Graphic Sales of America 1972-82; member of U.S. House 1982-94; elected governor in 1994—term ends 1999.

SENATORS

FRED THOMPSON ..... (202) 224-3344

Rep. of Nashville; senior senator; born Aug. 19, 1942 in Lawrenceburg; JD Vanderbilt University; attorney; actor; Senate Foreign Relations Comm., 1981; Congressional Committee Counsel; elected to the U.S. Senate in 1994, 1st term ends in 1997.

BILL FRIST ..... (202) 224-4944

Rep. of Nashville; junior senator; born Feb. 22, 1952 in Nashville; MD Harvard University, 1978; author; surgeon, director, Transplant Center Vanderbilt University Medical Center; Chairman Task Force on Medicaid 1992-94; elected to the U.S. Senate in 1994, 1st term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/JAMES H. QUILLEN ..... (202) 225-6356

Rep. of Kingsport; born Jan. 11, 1916 near Gate City, VA; former newspaper publisher; real estate, insurance; member, State House 1955-62; first elected to Congress in 1962—17th term.

2 JOHN J. DUNCAN, JR. ..... (202) 225-5435

Rep. of Knoxville; born July 21, 1947 in Lebanon; JD George Washington Univ., 1973; attorney; judge, criminal court of Knox Cty. 1980-88; first elected to Congress in 1988—4th term.

3rd/ZACH WAMP ..... (202) 225-3271

Rep. of Chattanooga; born Oct. 28, 1957 in Fort Benning, GA; University of North Carolina; University of Tennessee; businessman; broker, commercial and industrial real estate; State GOP Regional Director 1989-90; elected to Congress in 1994—1st term.

4th/VAN HILLEARY ..... (202) 225-6831

Rep. of Spring City; born June 20, 1959 in Rhea County; MPA University of Tennessee at Knoxville; JD Samford University; Captain, U.S. Air Force; attorney; Director of Planning and Business Development at SSM Industries, Inc.; member, American Legion and Veterans of Foreign Wars; elected to Congress in 1994—1st term.

5th/BOB CLEMENT ..... (202) 225-4311

Dem. of Nashville; born Sept. 23, 1943 in Nashville; MBA Memphis State Univ., 1968; U.S. Army 1969-71; member, TN Public Service Commission 1973-79, chairman 1977-79; member, TVA board of directors 1979-81; partner and owner, Charter Equities 1981-83; pres. of Cumberland Univ. 1983-87; first elected to Congress in 1988—5th term.

6th/BARTON J. GORDON ..... (202) 225-4231

Dem. of Murfreesboro; born Jan. 24, 1949 in Murfreesboro; JD Univ. of TN Law School, 1973; attorney; chairman, TN Dem. Party; first elected to Congress in 1984—6th term.

7th/ED BRYANT ..... (202) 225-2811

Rep. of Henderson; born Sept. 7, 1948 in Jackson; JD University of Mississippi, 1972; attorney; instructor, Law Dept., U.S. Military Academy at West Point; member, Farm Bureau; U.S. Attorney for West TN 1991-93; candidate for U.S. House 1988; elected to Congress in 1994—1st term.

LTV Steel: Counce

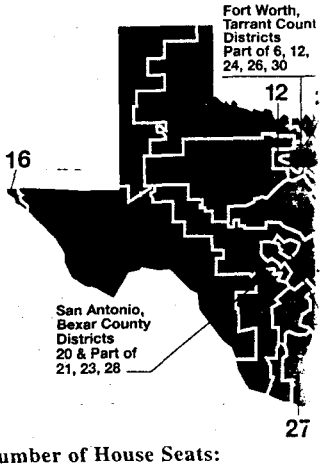
8th/JOHN TANNER ..... (202) 225-4714

Dem. of Union City; born Sept. 22, 1944 in Halls; JD Univ. of TN Law School, 1968; Lt., U.S. Navy 1968-72; attorney 1972-80; member, State House 1976-88; businessman with interests in commercial real estate and family-owned insurance agency; first elected to Congress in 1988—4th term.

9th/HAROLD E. FORD .....

Dem. of Memphis 1945 in Memphis. Univ., 1969; mor State House 1971- to Congress in 197

TEXAS



Number of House Seats:
11 Republicans 19 Democrats

GOVERNOR

GEORGE W. BUSH, JR.

Rep. of Dallas; bo New Haven, CT; BA Yale Univers Texas Air Natio nessman; genera Rangers baseball for U.S. House 1 ernor in 1994, ter

SENATORS

PHIL GRAMM .....

Rep. of Brian Coll nior senator; born Fort Benning, GA Ga., 1967; prof. of e A&M Univ. 1967-7 & Associates 1971 Congress 1979-84 U.S. Senate in 198 in 1997.

EARY ..... (202) 225-6831

Rep. of Spring City; born June 20, 1959 in Rhea County; MPA University of Tennessee at Knoxville; JD Samford University; Captain, U.S. Air Force; attorney; Director of Planning and Business Development at SSM Industries, Inc.; member, American Legion and Veterans of Foreign Wars; elected to Congress in 1994—1st term.

ENT ..... (202) 225-4311

Dem. of Nashville; born Sept. 23, 1943 in Nashville; MBA Memphis State Univ., 1968; U.S. Army 1969-71; member, TN Public Service Com- m 1973-79, chairman 1977- 7 ber, TVA board of directo 9-81; partner and owner, Charter Equities 1981-83; pres. of Cumberland Univ. 1983-87; first elected to Congress in 1988—5th term.

GORDON ..... (202) 225-4231

Dem. of Murfreesboro; born Jan. 24, 1949 in Murfreesboro; JD Univ. of TN Law School, 1973; attorney; chairman, TN Dem. Party; first elected to Congress in 1984—6th term.

..... (202) 225-2811

Rep. of Henderson; born Sept. 7, 948 in Jackson; JD University of Mississippi, 1972; attorney; instructor, Law Dept., U.S. Military Academy t West Point; member, Farm Bureau; U.S. Attorney for West TN 991-93; candidate for U.S. House 988; elected to Congress in 1994—st term.

TV Steel: Counce

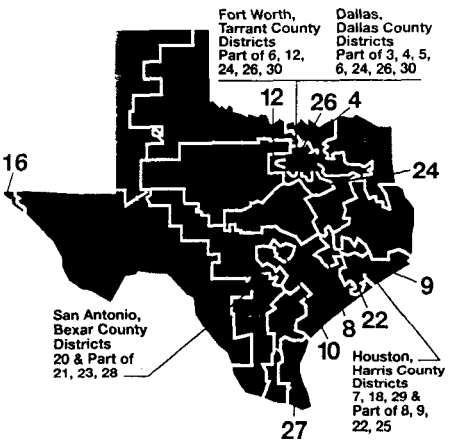
ER ..... (202) 225-4714

em of Union City; born Sept. 22, alls; JD Univ. of TN Law 68; Lt., U.S. Navy 1968- ey 1972-80; member, State use 1976-88; businessman with terests in commercial real estate d family-owned insurance agency; st elected to Congress in 1988— term.

9th/HAROLD E. FORD ..... (202) 225-3265

Dem. of Memphis; born May 20, 1945 in Memphis; MBA Howard Univ., 1969; mortician; member, State House 1971-74; first elected to Congress in 1974—11th term.

TEXAS



Number of House Seats:
11 Republicans 19 Democrats

GOVERNOR

GEORGE W. BUSH, JR.

Rep. of Dallas; born July 6, 1946 in New Haven, CT; MBA Harvard; BA Yale University; fighter pilot, Texas Air National Guard; businessman; general partner, Texas Rangers baseball team; candidate for U.S. House 1978; elected governor in 1994, term ends 1999.

SENATORS

PHIL GRAMM ..... (202) 224-2934

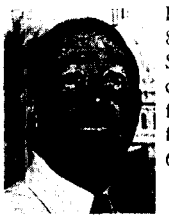
Rep. of Brian College Station; senior senator; born July 8, 1942 in Fort Benning, GA; PhD Univ. of Ga., 1967; prof. of economics, Texas A&M Univ. 1967-78; partner, Gramm & Associates 1971-78; member of Congress 1979-84; elected to the U.S. Senate in 1984, 2nd term ends

KAY BAILEY HUTCHISON ..... (202) 224-5922

Rep. of Dallas; junior senator; born July 23, 1943 in Galveston; LD 1967; small business owner; member, State House; Texas State Treasurer 1991-93; elected to the U.S. Senate in 1993, 2nd term ends in 2001.

DISTRICTS/REPRESENTATIVES

1st/JIM CHAPMAN ..... (202) 225-3035



Dem. of Sulphur Springs; born March 8, 1945 in Washington, DC; JD Southern Methodist Univ. School of Law, 1970; lawyer; dist. atty. for 8th Judicial District 1977-85; first elected to Congress in 1985—6th term.

2nd/CHARLES WILSON ..... (202) 225-2401

Dem. of Lufkin; born June 1, 1933 in Trinity; BS U.S. Naval Academy, 1956; U.S. Navy 1956-60; lumber supply manager; member, State House 1960-66, State Senate 1966-72; first elected to Congress in 1972—12th term.

3rd/SAM JOHNSON ..... (202) 225-4201

Rep. of Plano; born Oct. 11, 1930 in San Antonio; MA George Washington Univ., 1974; Air Force officer 1949-79; homebuilder 1979-85; member, State House 1985-81; first elected to Congress in 1991—3rd term.

Continental Emsco: Garland

4th/RALPH M. HALL ..... (202) 225-6673

Dem. of Rockwall; born May 3, 1923 in Rockwall Cty.; LLB Southern Methodist Univ., 1951; Rockwall Cty. judge 1950-62; member, State Senate 1962-72; first elected to Congress in 1980—8th term.

5th/JOHN BRYANT ..... (202) 225-2231

Dem. of Dallas; born Feb. 22, 1947 in Lake Jackson; JD Southern Methodist Univ. Law School, 1972; chief counsel, State Senate subcom. 1973; member, state legislature 1974-83; attorney; first elected to Congress in 1982—7th term.

6th/JOE L. BARTON ..... (202) 225-2002

Rep. of Ennis; born Sept. 15, 1949 in Waco; MS Purdue Univ., 1973; plant manager, Ennis Business Forms 1973-81; natural gas policy consultant, Atlantic Richfield Corp. 1982-84; first elected to Congress in 1984—6th term.

Continental Emsco: Arlington

7th/BILL ARCHER ..... (202) 225-2571

Rep. of Houston; born March 22, 1928 in Houston; LLB Univ. of Texas, 1951; attorney and businessman; councilman of Hunter's Creek Village 1955-62; member, State House 1967-70; first elected to Congress in 1970—13th term.

8th/JACK FIELDS ..... (202) 225-4901

Rep. of Humble; born Feb. 3, 1952 in Humble; JD Baylor Univ. Law School, 1977; v.p., Rosewood Memorial Funeral Home and Cemetery; first elected to Congress in 1980—8th term.

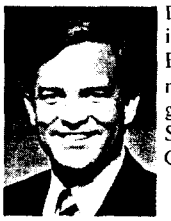
9th/STEVE STOCKMAN ..... (202) 225-6565

Rep. of Friendswood; born Nov. 14, 1956 in Royal Oak, MI; BS University of Houston at Clear Lake; accountant; state chairman, Young Conservatives of Texas; board member, Hugh O'Brian Youth Foundation, South Texas Leadership Conference; elected to Congress in 1994—1st term.

10th/LLOYD DOGGETT ..... (202) 225-4865

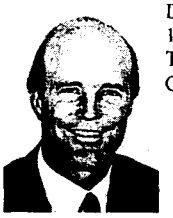
Dem. of Austin; born Oct. 6, 1946 in Austin; JD University of Texas; State Supreme Court Justice; established the Texas Commission on Human Rights; wrote the law banning "cop killer" bullets; adjunct professor at the University of Texas School of Law; State Senator 1973-84; elected to Congress in 1994—1st term.

11th/CHET EDWARDS ..... (202) 225-6105



Dem. of Waco; born Nov. 24, 1951 in Corpus Christi; MBA Harvard Business School, 1976; businessman; legis. aide to Rep. Olin "Tiger" Teague 1974-77; member State Senate 1982-1990; first elected to Congress in 1990—3rd term.

12th/PETE GEREN ..... (202) 225-5071



Dem. of Fort Worth; born Jan. 29, 1952 in Fort Worth; JD Univ. of Texas 1978; atty.; first elected to Congress in 1989 — 4th term.

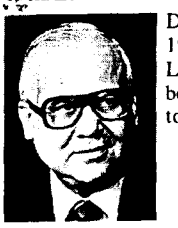
13th/WILLIAM "MAC" THORNBERRY ..... (202) 225-3706

Rep. of Amarillo; born July 15, 1958 in Clarendon; JD University of Texas; rancher; attorney; counsel to Congressman Tom Loeffler 1983-85; chief of staff for Congressman Larry Combest 1985-88; deputy assistant secretary of state for legislative affairs 1988; appointed State GOP Executive Committee 1990-93; elected to Congress in 1994—1st term.

14th/GREG LAUGHLIN ..... (202) 225-2831

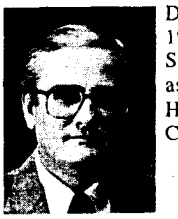
Dem. of West Columbia; born Jan. 21, 1942 in Bay City; LLB Univ. of Texas Law School, 1967; asst. dist. atty., Harris Cty. 1970-74; attorney 1974-88; first elected to Congress in 1988—4th term.

15th/E. "KIKA" de la GARZA .....



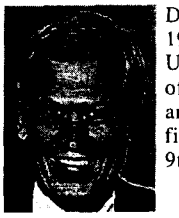
Dem. of Mission; 1927 in Mercedes; Law School, 1952 ber, State House 195 to Congress in 19

16th/RONALD COLEMAN .....



Dem. of El Paso; 1941 in El Paso; J School of Law, 19 asst. cty. atty. 197 House 1973-82; Congress in 1982-

17th/CHARLES W. STENHOLM .....



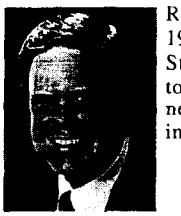
Dem. of Stamfor 1938 in Stamford; Univ., 1962; farm of Rolling Plains and Texas Electri first elected to Co 9th term.

18th/SHEILA JACKSON LEE .....

Dem. of Houston; in Jamaica, NY; Virginia; attorney municipal court, senior attorney, U sources, Inc.; Ho cilwoman 1990-9 gress in 1994—1

Continental Em

19th/LARRY COMBEST .....



Rep. of Lubbock; 1945 in Memphis; State Univ., 1969; to Sen. John Tow nessman; first ele in 1984—6th tern

OGGETT ..... (202) 225-4865

Dem. of Austin; born Oct. 6, 1946 in Austin; JD University of Texas; State Supreme Court Justice; established the Texas Commission on Human Rights; wrote the law banning "cop killer" bullets; adjunct professor at the University of Texas School of Law; State Senator 1973-84; elected to Congress in 1994—1st term.

WARDS ..... (202) 225-6105

Dem. of Waco; born Nov. 24, 1951 in Corpus Christi; MBA Harvard Business School, 1976; businessman; legis. aide to Rep. Olin "Ti-gg[illegible]ue 1974-77; member State S[illegible]82-1990; first elected to Co[illegible]s in 1990—3rd term.

EN ..... (202) 225-5071

Dem. of Fort Worth; born Jan. 29, 1952 in Fort Worth; JD Univ. of Texas 1978; atty.; first elected to Congress in 1989 — 4th term.

"MAC"

..... (202) 225-3706

Rep. of Amarillo; born July 15, 1958 in Clarendon; JD University of Texas; rancher; attorney; counsel to Congressman Tom Loeffler 1983-85; chief of staff for Congressman Larry Combest 1985-88; deputy assistant secretary of state for legislative affairs 1988; appointed State GOP Executive Committee 1990-93; elected to Congress in 1994—1st term.

GHLIN ..... (202) 225-2831

Dem. of West Columbia; born Jan. 1, 1942 in Bay City; LLB Univ. of [illegible] School, 1967; asst. dist. [illegible]s Cty. 1970-74; attorney [illegible] first elected to Congress 1988—4th term.

15th/E. "KIKA" de la GARZA ..... (202) 225-2531

Dem. of Mission; born Sept. 22, 1927 in Mercedes; LLB St. Mary's Law School, 1952; attorney; member, State House 1952-64; first elected to Congress in 1964—16th term.

16th/RONALD COLEMAN ..... (202) 225-4831

Dem. of El Paso; born Nov. 29, 1941 in El Paso; JD Univ. of Texas School of Law, 1967; attorney; first asst. cty. atty. 1971; member, State House 1973-82; first elected to Congress in 1982—7th term.

17th/CHARLES W. STENHOLM ..... (202) 225-6605

Dem. of Stamford; born Oct. 26, 1938 in Stamford; MS Texas Tech Univ., 1962; farmer; past president of Rolling Plains Cotton Growers and Texas Electric Cooperatives; first elected to Congress in 1978—9th term.

18th/SHEILA JACKSON LEE ..... (202) 225-3816

Dem. of Houston; born Jan. 12, 1950 in Jamaica, NY; JD University of Virginia; attorney; associate judge, municipal court, City of Houston; senior attorney, United Energy Resources, Inc.; Houston City Councilwoman 1990-94; elected to Congress in 1994—1st term.

Continental Emsco: Houston

19th/LARRY COMBEST ..... (202) 225-4005

Rep. of Lubbock; born March 20, 1945 in Memphis; BBA West Texas State Univ., 1969; farmer; staff asst. to Sen. John Tower 1971-78; businessman; first elected to Congress in 1984—6th term.

20th/HENRY B. GONZALEZ ..... (202) 225-3236

Dem. of San Antonio; born May 3, 1916 in San Antonio; LLB, St. Mary's Univ. School of Law, 1943; probation officer; member, San Antonio City Council; member, State Senate 1957-61; first elected to Congress in 1961—18th term.

21st/LAMAR SMITH ..... (202) 225-4236

Rep. of San Antonio; born Nov. 19, 1947 in San Antonio; JD SMU School of Law, 1975; chairman, Republican Party of Bexar Cty. 1978-81; member, State House 1981-82; county commissioner, Bexar Cty. 1982-85; first elected to Congress in 1986—5th term.

22nd/TOM DeLAY ..... (202) 225-5951

Rep. of Sugar Land; born Apr. 8, 1947 in Laredo; BS Univ. of Houston, 1970; businessman; member, State House 1979-84; first elected to Congress in 1984—6th term.

23rd/ HENRY BONILLA ..... (202) 225-4511

Rep. of San Antonio; born Jan. 2, 1954 in San Antonio; BA Univ. of Texas at Austin; TV news executive producer; first elected to Congress in 1992—2nd term.

24th/MARTIN FROST ..... (202) 225-3605

Dem. of Dallas; born Jan. 1, 1942 in Glendale, CA; JD Georgetown Law Center, 1970; staff writer for Congressional Quarterly 1965-67; practicing attorney in Dallas 1970-78; first elected to Congress in 1978—9th term.

25th/KEN BENTSEN ..... (202) 225-7508

Dem. of Houston; born June 3, 1959 in Houston; MPA American University, 1985; BS University of St. Thomas, 1982; businessman; legislative assistant to U.S. Rep. Ronald Coleman, D-Texas 1983-1987; Harris County Democratic Chair 1990-93; elected to Congress in 1994—1st term.

26th/RICHARD K. ARMEY ..... (202) 225-7772

Rep. of Lewisville; born July 7, 1940 in Cando, ND; PhD Univ. of OK, 1969; assoc. prof./chairman, dept. of economics, NTSU; first elected to Congress in 1984—6th term.

27th/SOLOMON ORTIZ ..... (202) 225-7742

Dem. of Corpus Christi; born June 3, 1937 in Robstown; AA Delmar College, 1968; Nueces Cty. constable 1965-68, commissioner 1969-76, sheriff 1977-82; first elected to Congress in 1982—7th term.

28th/FRANK TEJEDA ..... (202) 225-1640

Dem. of San Antonio; born Oct. 2, 1945 in San Antonio; LLM Yale Univ.; MPA Harvard Univ.; attorney; member, State House 1976-86, State Senate 1986-92; first elected to Congress in 1992—2nd term.

29th/GENE GREEN ..... (202) 225-1688

Dem. of Houston; born Oct. 17, 1947 in Houston; JD University of Houston; BA Univ. of Houston, 1971; attorney; member, State House 1973-85, member, State Senate 1985-92; first elected to Congress in 1992—2nd term.

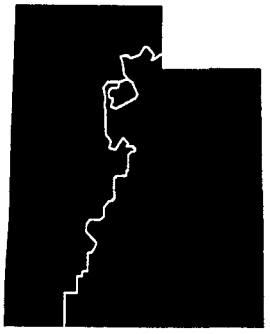
Continental Emsco: Houston

30th/ EDDIE BERNICE JOHNSON ..... (202) 225-8885

Dem. of Dallas; born Dec. 3, 1935 in Waco; MPA Southern Methodist Univ., 1976; BA Texas Christian Univ.; businesswoman; member, State House 1972-86, State Senate 1986-92; first elected to Congress in 1992—2nd term.

UTAH

Number of House Seats:
2 Republicans
1 Democrat



GOVERNOR

MIKE LEAVITT

Rep. of Salt Lake City; born in Cedar City; Bachelor's degree from Southern Utah University; businessman; elected governor in 1992, term ends 1997

SENATORS

ORRIN G. HATCH ..... (202) 224-5251

Rep. of Salt Lake City; senior senator; born March 22, 1934 in Pittsburgh, PA; LLB Univ. of Pittsburgh, 1962; practiced law in Salt Lake City and Pittsburgh; elected to the U.S. Senate in 1976, 4th term ends in 2001.

ROBERT BENNETT .....

Rep. of Salt Lake C
tor; born Sept. 1
Lake City; BA Uni
1957; business-ma
ernment service; el
Senate in 1992—1
1999.

DISTRICTS/REPRESENT

1st/JAMES V. HANSEN .....

Rep. of Farmingto
1932 in Salt Lake
Utah, 1960; insur
tive; member, Sta
80, speaker 1978-
to Congress in 198

2nd/ENID GREENE WALDHOLTZ .....

Rep. of Salt Lake
1958 in San Fra
Brigham Young U
BS University of U
ney; deputy chief
Norman H. Banger
didate for U.S. C
elected to Congre
term.

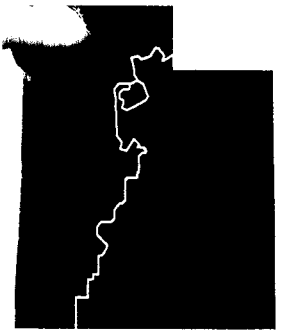
3rd/WILLIAM ORTON .....

Dem. of Sundanc
1949 in North Og
Young Univ., 19
former auditor, I
elected to Congre
term.

RNICE

..... (202) 225-8885

)em. of Dallas; born Dec. 3, 1935 n Waco; MPA Southern Methodist Jniv., 1976; BA Texas Christian Jniv.; businesswoman; member, State Iouse 1972-86, State Senate 1986-2; first elected to Congress in 1992—nd term.



ep. of Salt Lake City; born in edar City; Bachelor's degree from outhern Utah University; business-an; elected governor in 1992, term nds 1997

H ..... (202) 224-5251

ep. of Salt Lake City; senior sena-r; born March 22, 1934 in Pitts-r LLB Univ. of Pittsburgh, ticed law in Salt Lake ty ittsburgh; elected to the S. Senate in 1976, 4th term ends 2001.

ROBERT BENNETT ..... (202) 224-5444

Rep. of Salt Lake City; junior senator; born Sept. 18, 1933 in Salt Lake City; BA University of Utah, 1957; business-man, politics, government service; elected to the U.S. Senate in 1992—1st term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/JAMES V. HANSEN ..... (202) 225-0453

Rep. of Farmington; born Aug. 14, 1932 in Salt Lake City; BS Univ. of Utah, 1960; insurance co. executive; member, State House 1972-80, speaker 1978-80; first elected to Congress in 1980—8th term.

2nd/ENID GREENE WALDHOLTZ ..... (202) 225-3011

Rep. of Salt Lake City; born Oct. 5 1958 in San Francisco, CA; JD Brigham Young University, 1983; BS University of Utah, 1980; attorney; deputy chief of staff for Gov. Norman H. Bangerter 1990-92; candidate for U.S. Congress in 1992; elected to Congress in 1994—1st term.

3rd/WILLIAM ORTON ..... (202) 225-7751

Dem. of Sundance; born Sept. 22, 1949 in North Ogden; JD Brigham Young Univ., 1979; tax attorney; former auditor, IRS; teacher; first elected to Congress in 1990—3rd term.

VERMONT

Number of House Seats:
1 Independent

GOVERNOR

HOWARD DEAN

Dem. of Burlington; born Nov. 17, 1948 in New York City; MD Albert Einstein College of Medicine, 1978; doctor of internal medicine and founder of the Vermont Youth Conservation Corps.; member, State House 1983-86; lt. governor 1986-91; sworn in as governor in 1991; re-elected in 1992 and 1994, term ends 1997.

SENATORS

PATRICK J. LEAHY ..... (202) 224-4242

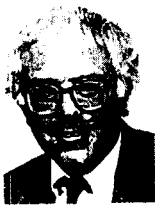
Dem. of Burlington; senior senator; born March 31, 1940 in Montpelier; JD Georgetown Univ., 1964; lawyer; state's atty. for Chittenden Cty. 1966-74; elected to the U.S. Senate in 1974, 4th term ends in 1999.

JAMES M. JEFFORDS ..... (202) 224-5141

Rep. of Shrewsbury; junior senator; born May 11, 1934 in Rutland; LLB Harvard Univ., 1962; attorney; member, State Senate 1967-68; atty. general 1969-73; member of U.S. House 1975-89; elected to the U.S. Senate in 1988, 2nd term ends in 2001.

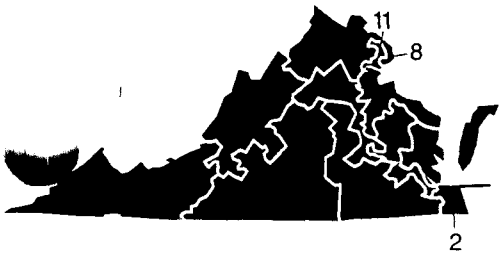
DISTRICT/REPRESENTATIVE

At Large/BERNARD SANDERS. (202) 225-4115



Ind. of Burlington; born Sept. 8, 1941 in New York City; BA University of Chicago, 1964; teacher; writer; mayor of Burlington 1981-89; first elected to Congress in 1990—3rd term.

VIRGINIA



Number of House Seats:
5 Republicans 6 Democrats

GOVERNOR

GEORGE ALLEN

Rep. of Earlysville; born Mar. 8, 1952 in Whittier, CA; JD Univ. of VA, 1977; federal clerk 1977-78; attorney; member, State House 1982-91; Member of Congress 1991-92; elected governor in 1993, term ends in 1997.

SENATORS

JOHN W. WARNER ..... (202) 224-2023

Rep. of Middleburg; senior senator; born Feb. 18, 1927 in Washington, DC; LLB Univ. of VA, 1953; attorney; asst. U.S. Atty. 1956-60; U.S. Navy Under Secy. 1969-72, Secy. 1972-74; elected to the U.S. Senate in 1978, 3rd term ends in 1997.

CHARLES S. ROBB ..... (202) 224-4024

Dem. of McLean; junior senator; born June 26, 1939 in Phoenix, AZ; U.S. Marine Corps, 1961-70; JD Univ. of VA School of Law, 1973; lt. governor 1978-82; governor 1982-86; attorney 1986-88; elected to the U.S. Senate in 1988, 2nd term ends 2001.

DISTRICTS/REPRESENTATIVES

1st/HERBERT H. BATEMAN ..... (202) 225-4261

Rep. of Newport News; born Aug. 7, 1928 in Elizabeth City, NC; JD Georgetown Univ. Law Center, 1956; attorney 1957-82; member, State Senate 1967-82; first elected to Congress in 1982—7th term.

2nd/OWEN PICKETT ..... (202) 225-4215

Dem. of Virginia Beach; born Aug. 31, 1930 in Richmond; LLB Univ. of Richmond, 1955; attorney; CPA; senior partner of law firm; member, State House 1972-86; first elected to Congress in 1986—5th term.

3rd/BOBBY SCOTT ..... (202) 225-8351

Dem. of Newport News; born April 30, 1947 in Washington, DC; JD Boston College Law School; Harvard College; attorney; member, State House 1978-82, State Senate 1982-92; first elected to Congress in 1992—2nd term.

4th/NORMAN SISISKY ..... (202) 225-6365

Dem. of Petersburg; born June 9, 1927 in Baltimore, MD; BS VA Commonwealth Univ., 1949; businessman; chrmn., National Soft Drink Assoc. 1980-82; member, State House 1973-82; first elected to Congress in 1982—7th term.

5th/LEWIS F. PAYNE, JR. ..... (202) 225-4711

Dem. of Nellysford; born July 9, 1945 in Amherst; MBA Univ. of VA, 1973; U.S. Army 1968-69; staff engineering assoc., C&P Telephone Co. of VA 1970-71; planning and development manager, Wintergreen Development, Inc. 1973-75, pres. 1976-85, chairman of the board 1985-88; first elected to Congress in 1988—4th term.

6th/BOB GOODLATTE .....

Rep. of Roanoke; 1952 in Holyoke, ington & Lee Uni 1977; attorney, R activist; first elect 1992—2nd term.

7th/THOMAS J. BLILEY, JR. .....

Rep. of Richmon 1932 in Chesterfi Georgetown Univ., man; member, Richn 1968-77, mayor 197 to Congress in 198

8th/JAMES P. MORAN .....

Dem. of Alexandri 1945 in Buffalo, N sity of Pittsburgh, 1 member, U.S. Ser tions Committee 19 city council 1979- broker; vice mayo 1982-84; mayor of A 90; first elected to Co 3rd term.

9th/FREDERICK C. BOUCHER.

Dem. of Abingdo 1946 in Washing Univ. of VA, 1971; ber, State Senate 197 to Congress in 198

10th/FRANK R. WOLF .....

Rep. of Vienna; bo in Philadelphia, P town Univ., 1965; the Interior 1971-7 torney 1975-80; firs gress in 1980—8th

/REPRESENTATIVES

H. BATEMAN ..... (202) 225-4261

Rep. of Newport News; born Aug. 7, 1928 in Elizabeth City, NC; JD Georgetown Univ. Law Center, 1956; attorney 1957-82; member, State Senate 1967-82; first elected to Congress in 1982—7th term.

KETT ..... (202) 225-4215

Dem. of Virginia Beach; born Aug. 31, 1930 in Richmond; LLB Univ. of Richmond, 1955; attorney; CPA; sen[illegible] partner of law firm; mem-b[illegible] House 1972-86; first elected t[illegible]ess in 1986—5th term.

OTT ..... (202) 225-8351

Dem. of Newport News; born April 30, 1947 in Washington, DC; JD Boston College Law School; Harvard College; attorney; member, State House 1978-82, State Senate 1982-92; first elected to Congress in 1992—2nd term.

ISISKY ..... (202) 225-6365

Dem. of Petersburg; born June 9, 1927 in Baltimore, MD; BS VA Commonwealth Univ., 1949; businessman; chrmn., National Soft Drink Assoc. 1980-82; member, State House 1973-82; first elected to Congress in 1982—7th term.

AYNE, JR. ..... (202) 225-4711

Dem. of Nellysford; born July 9, 1945 in Amherst; MBA Univ. of VA, 1973; U.S. Army 1968-69; staff engineering assoc., C&P Tele-p[illegible], of VA 1970-71; planning [illegible]opment manager, Winter-gr[illegible]evelopment, Inc. 1973-75, pres. 1976-85, chairman of the board 1985-88; first elected to Congress in 1988—4th term.

6th/BOB GOODLATTE ..... (202) 225-5431

Rep. of Roanoke; born Sept. 22, 1952 in Holyoke, MA; JD Washington & Lee Univ. Law School, 1977; attorney, Republican party activist; first elected to Congress in 1992—2nd term.

7th/THOMAS J. BLILEY, JR. ..... (202) 225-2815

Rep. of Richmond; born Jan. 28, 1932 in Chesterfield County; BA Georgetown Univ., 1952; businessman; member, Richmond City Council 1968-77, mayor 1970-77; first elected to Congress in 1980—8th term.

8th/JAMES P. MORAN ..... (202) 225-4376

Dem. of Alexandria; born May 16, 1945 in Buffalo, NY; MA University of Pittsburgh, 1970; senior staff member, U.S. Senate Appropriations Committee 1976-80; member, city council 1979-82; investment broker; vice mayor of Alexandria 1982-84; mayor of Alexandria 1985-90; first elected to Congress in 1990—3rd term.

9th/FREDERICK C. BOUCHER. (202) 225-3861

Dem. of Abingdon; born Aug. 1, 1946 in Washington County; JD Univ. of VA, 1971; attorney; member, State Senate 1975-82; first elected to Congress in 1982—7th term.

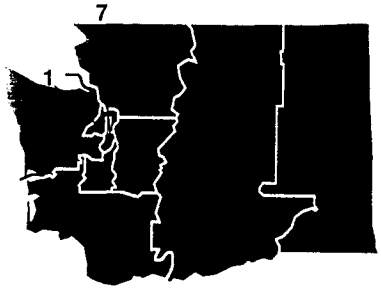
10th/FRANK R. WOLF ..... (202) 225-5136

Rep. of Vienna; born Jan. 30, 1939 in Philadelphia, PA; LLB Georgetown Univ., 1965; asst. to Secy. of the Interior 1971-74; practicing attorney 1975-80; first elected to Congress in 1980—8th term.

11th/THOMAS M. DAVIS III ..... (202) 225-1492

Rep. of Fairfax County; born Jan. 5, 1949 in Minot, ND; JD University of Virginia; attorney; Fairfax County Board of Supervisors 1979-94, chairman 1992-94; member, Executive Board, Virginia Association of Counties; elected to Congress in 1994—1st term.

WASHINGTON



Number of House Seats:
7 Republicans 2 Democrats

GOVERNOR

MIKE LOWRY

Dem. of Renton; born 1939 in St. John (Whitman County); Washington State University; member, King County Council 1975; member U.S. House 1978-88; elected governor in 1992, term ends 1997.

SENATORS

SLADE GORTON ..... (202) 224-3441

Rep. of Seattle; senior senator; born Jan. 8, 1928 in Chicago, IL; LLB Columbia Univ. Law School, 1953; member, State House 1958-68, majority leader 1967-68; atty. general 1968-81; U.S. Senator 1981-87; attorney 1987-88; re-elected to the U.S. Senate in 1988, 2nd term ends in 2001.

PATTY MURRAY ..... **(202) 224-2621**

Dem. of Seattle; junior senator; born Oct. 11, 1950 in Seattle; BA Washington State University, 1972; legislative lobbyist; teacher; member, local school board 1985-89; member, State Senate 1988-92; elected to the U.S. Senate in 1992, 1st term expires in 1999.

DISTRICTS/REPRESENTATIVES

1st/RICK WHITE ..... **(202) 225-6311**

Rep. of Bainbridge Island; born Nov. 6, 1953 in Bloomington, IN; JD Georgetown University, 1980; attorney; founder and director of "Books for Kids", a literacy program; helped found "Farm Team" to involve young Republicans in the GOP1990; elected to Congress in 1994—1st term.

2nd/JACK METCALF ..... **(202) 225-2605**

Rep. of Langley; born Nov. 30, 1927 in Marysville; BA Pacific Lutheran University, 1951; teacher; businessman; member Farm Bureau; South Whidbey Planning Council; member, State Senate 1966-74, 1980-92; elected to Congress in 1994—1st term.

3rd/LINDA SMITH ..... **(202) 225-3536**

Rep. of Vancouver; born July 16, 1950 in LaJunta, CO; Fort Vancouver High School; businesswoman; member, State House 1984-87, State Senate 1988-94, Caucus Vice-Chair, 1993; elected to Congress in 1994—1st term.

4th/RICHARD "DOC" HASTINGS ..... **(202) 225-5816**

Rep. of Pasco; born Feb. 7, 1941 in Spokane; Columbian Basin College; Central Washington University; businessman; president, Columbia Basin Paper & Supply; member, State House 1979-86; Republican Caucus Chairman; Asst. Majority Leader; elected to Congress in 1994—1st term.

5th/GEORGE NETHERCUTT ..... **(202) 225-2006**

Rep. of Spokane; born Oct. 7, 1944 in Spokane; JD Gonzaga University, 1971; BA Washington State University, 1967; attorney, law clerk to Federal Judge Ralph Plumer; chief of staff for U.S. Senator Ted Stevens; GOP County Chairman 1990-94; elected to Congress in 1994—1st term.

6th/NORMAN D. DICKS ..... **(202) 225-5916**

Dem. of Bremerton; born Dec. 16, 1940 in Bremerton; JD Univ. of Wash., 1968; staff member for Senator Warren Magnuson 1968-76; first elected to Congress in 1976—10th term.

7th/JIM McDERMOTT ..... **(202)225-3106**

Dem. of Seattle; born Dec. 28, 1936 in Chicago, IL; MD Univ. of Ill. Medical School, 1963; adult and child psychiatrist 1968-88; member, State House 1971-73, State Senate 1975-87; first elected to Congress in 1988—4th term.

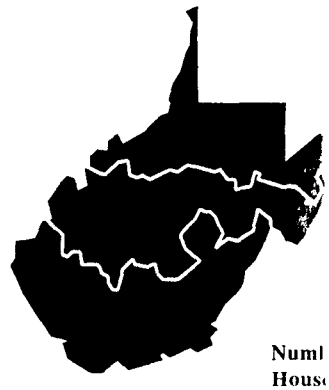
8th/JENNIFER DUNN ..... **(202) 225-7761**

Rep. of Bellevue; born July 29, 1941 in Seattle; BA Stanford Univ., 1963; former state Republican party chairperson; first elected to Congress in 1992—2nd term.

9th/RANDY TATE ..... **(202) 225-8901**

Rep. of Puyallup; born Nov. 23, 1965 in Puyallup; BA Western Washington University; businessman; Assistant Floor Leader 1990-92; Chair, House Republican Caucus 1992-94; elected to Congress in 1994—1st term.

WEST VIRGINIA



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3 Den

GOVERNOR

GASTON CAPERTON

Dem.; born Feb. 21, ton; BA Univ. of N 1963; pres., McDo Insurance Group 1 governor in 1988 a ends 1997.

SENATORS

ROBERT C. BYRD ..... (

Dem. of Sophia; seni Nov. 20, 1917 in boro, NC; JD Amer member, State H Senate 1951-52. House 1953-58; e Senate in 1958, e Leader in 1977 and Minority Leader in 1984, re-elected M in 1986, 7th term en

JOHN D. "JAY" ROCKEFELLER IV ..... (

Dem. of Charleston tor; born June 18, York City; AB Harv officer, State Dept. East Affairs; membe 1967-68, secy. of governor 1977-84; U.S. Senate in 1984. in 1997.

NETHERCUTT ..... (202) 225-2006

Rep. of Spokane; born Oct. 7, 1944 in Spokane; JD Gonzaga University, 1971; BA Washington State University, 1967; attorney, law clerk to Federal Judge Ralph Plumer; chief of staff for U.S. Senator Ted Stevens; GOP County Chairman 1990-94; elected to Congress in 1994—1st term.

D. DICKS ..... (202) 225-5916

Dem. of Bremerton; born Dec. 16, 1940 in Bremerton; JD Univ. of Wash., 1968; staff member for Senator Warren Magnuson 1968-76; first e[illegible]d to Congress in 1976—10th

ERMOTT ..... (202)225-3106

Dem. of Seattle; born Dec. 28, 1936 in Chicago, IL; MD Univ. of Ill. Medical School, 1963; adult and child psychiatrist 1968-88; member, State House 1971-73, State Senate 1975-87; first elected to Congress in 1988—4th term.

R DUNN ..... (202) 225-7761

Rep. of Bellevue; born July 29, 1941 in Seattle; BA Stanford Univ., 1963; former state Republican party chairperson; first elected to Congress in 1992—2nd term.

ATE ..... (202) 225-8901

Rep. of Puyallup; born Nov. 23, 1965 in Puyallup; BA Western Washington University; businessman; Assistant Floor Leader 1990-92; Chair, House Republican Cau[illegible]2-94; elected to Congress [illegible]—1st term.

WEST VIRGINIA

Number of House Seats:
3 Democrats

GOVERNOR

GASTON CAPERTON

Dem.; born Feb. 21, 1940 in Charleston; BA Univ. of NC, Chapel Hill, 1963; pres., McDonough-Caperton Insurance Group 1976-87; elected governor in 1988 and 1992, term ends 1997.

SENATORS

ROBERT C. BYRD ..... (202) 224-3954

Dem. of Sophia; senior senator; born Nov. 20, 1917 in North Wilkesboro, NC; JD American Univ., 1963; member, State House 1947-50, State Senate 1951-52; member of U.S. House 1953-58; elected to the U.S. Senate in 1958, elected Majority Leader in 1977 and 1979, and elected Minority Leader in 1980, 1982 and 1984, re-elected Majority Leader in 1986, 7th term ends in 2001.

JOHN D. "JAY" ROCKEFELLER IV ..... (202) 224-6472

Dem. of Charleston; junior senator; born June 18, 1937 in New York City; AB Harvard, 1961; desk officer, State Dept. Bureau of Far East Affairs; member, State House 1967-68, secy. of state 1969-72; governor 1977-84; elected to the U.S. Senate in 1984, 2nd term ends in 1997.

DISTRICTS/REPRESENTATIVES

1st/ALAN MOLLOHAN ..... (202) 225-4172

Dem. of Fairmont; born May 14, 1943 in Fairmont; JD West Virginia Univ., 1970; practicing attorney 1970-82; first elected to Congress in 1982—7th term.

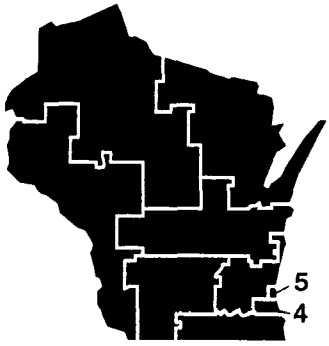
2nd/BOB WISE ..... (202) 225-2711

Dem. of Clendenin; born Jan. 6, 1948 in Washington, DC; JD from Tulane Univ., 1975; practicing attorney; member, State Senate 1980-82; first elected to Congress in 1982—7th term.

3rd/NICK J. RAHALL II ..... (202) 225-3452

Dem. of Beckley; born May 20, 1949 in Beckley; AB Duke Univ., 1971; sales representative, WWNR radio; president, WV Broadcasting; first elected to Congress in 1976—10th term.

WISCONSIN



Number of House Seats:
6 Republicans
3 Democrats

GOVERNOR

TOMMY THOMPSON

Rep.; born Nov. 19, 1941 in Elroy; JD Univ. of Wis., 1966; attorney; farmer; member, State Assembly 1966-86, Republican floor leader 1981-86; elected governor in 1986, re-elected in 1990 and 1994, term ends 1999.

SENATORS

HERB H. KOHL ..... (202) 224-5653

Dem. of Milwaukee; senior senator; born Feb. 7, 1935 in Milwaukee; MBA Harvard Univ., 1958; pres., Kohl Corporation 1959-79; state chairman, Wisc. Democratic Party 1975-77; pres., Herbert Kohl Investments 1979-88; Owner, Milwaukee Bucks (NBA) 1985-present; elected to the U.S. Senate in 1988, 2nd term ends in 2001.

RUSS FEINGOLD ..... (202) 224-5323

Dem. of Middleton; junior senator; born March 2, 1953 in Janesville; JD Harvard Law School, 1979; attorney, professor; member, State Senate 1983-92; elected to the U.S. Senate in 1992, 1st term ends in 1999.

DISTRICTS/REPRESENTATIVES

1st/MARK NEUMANN ..... (202) 225-3031

Rep. of Janesville; born Feb. 27, 1954 in Wautekesha County; BS University of Wisconsin at Whitewater, 1975; teacher; home builder; businessman; candidate for U.S. Congress 1992 and in a special election 1993; elected to Congress in 1994—1st term.

2nd/SCOTT KLUG ..... (202) 225-2906

Rep. of Madison; born Jan. 16, 1953 in Milwaukee; MBA Univ. of Wis., 1990; investigative reporter and television anchor 1976-90; investment banker; first elected to Congress in 1990—3rd term.

3rd/STEVE GUNDERSON ..... (202) 225-5506

Rep. of Osseo; born May 10, 1951 in Eau Claire; BA Univ. of Wis., 1973; member, State Assembly 1975-79; legis. asst. to Rep. Toby Roth in 1979; first elected to Congress in 1980—8th term.

4th/GERALD D. KLECZKA ..... (202) 225-4572

Dem. of Milwaukee; born Nov. 26, 1943 in Milwaukee; attended Univ. of WI. at Milwaukee; member, State Assembly 1968-74, State Senate 1974-84; first elected to Congress in a special election in 1984—7th term.

5th/THOMAS BARRETT ..... (202) 225-3571

Dem. of Milwaukee; born Dec. 8, 1953 in Milwaukee; JD Univ. of Wisconsin Law School in Madison, 1980; BA Univ. of Wisconsin, 1976; attorney; member, State Assembly 1984-89, State Senate 1989-92; first elected to Congress in 1992—2nd term.

6th/THOMAS E. PETRI ..... (

Rep. of Fond du Lac
1940 in Marinette; JD
1965; Peace Corps v
rica 1966-67; practi
member, State Senat
elected to Congress
term.

7th/DAVID R. OBEY ..... (

Dem. of Wausau; bo
in Okmulgee, OK;
Wisconsin, 1962; me
sembly 1962-69; first
gress in 1969—14th

8th/TOBY ROTH ..... (

Rep. of Appleton;
1938 in Strasburg, ND
Univ., 1961; realtor;
Assembly 1973-79;
Congress in 1978—

9th/F. JAMES SENSENBRENNER, JR. ..... (

Rep. of Menomonee F
14, 1943 in Chicago
of Wisconsin, 1968;
torney; member, St
1969-75, State Senat
elected to Congress
term.

S/REPRESENTATIVES

EUMANN ..... (202) 225-3031

Rep. of Janesville; born Feb. 27, 1954 in Wautekesha County; BS University of Wisconsin at Whitewater, 1975; teacher; home builder; businessman; candidate for U.S. Congress 1992 and in a special election 1993; elected to Congress in 1994—1st term.

LUG ..... (202) 225-2906

Rep. of Madison; born Jan. 16, 1953 in Milwaukee; MBA Univ. of Wis., 1990; investigative reporter and tele- v anchor 1976-90; investment first elected to Congress in rd term.

UNDERSON ..... (202) 225-5506

Rep. of Osseo; born May 10, 1951 in Eau Claire; BA Univ. of Wis., 1973; member, State Assembly 1975-79; legis. asst. to Rep. Toby Roth in 1979; first elected to Congress in 1980—8th term.

D. KLECZKA ..... (202) 225-4572

Dem. of Milwaukee; born Nov. 26, 1943 in Milwaukee; attended Univ. of WI. at Milwaukee; member, State Assembly 1968-74, State Senate 1974-84; first elected to Congress in a special election in 1984—7th term.

BARRETT ..... (202) 225-3571

Dem. of Milwaukee; born Dec. 8, 1953 in Milwaukee; JD Univ. of Wisconsin Law School in Madison 980; BA Univ. of Wisconsin, torney; member, State As- 984-89, State Senate 1989- 92, st elected to Congress in 1992—2nd term.

6th/THOMAS E. PETRI ..... (202) 225-2476

Rep. of Fond du Lac; born May 28, 1940 in Marinette; JD Harvard Univ., 1965; Peace Corps volunteer in Africa 1966-67; practicing attorney; member, State Senate 1973-79; first elected to Congress in 1979—9th term.

7th/DAVID R. OBEY ..... (202) 225-3365

Dem. of Wausau; born Oct. 3, 1938 in Okmulgee, OK; MA Univ. of Wisconsin, 1962; member, State Assembly 1962-69; first elected to Congress in 1969—14th term.

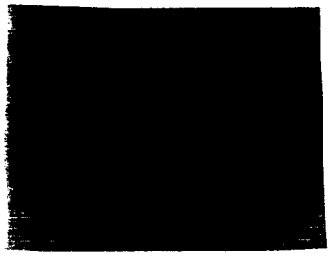
8th/TOBY ROTH ..... (202) 225-5665

Rep. of Appleton; born Oct. 10, 1938 in Strasburg, ND; BA Marquette Univ., 1961; realtor; member, State Assembly 1973-79; first elected to Congress in 1978—9th term.

9th/F. JAMES SENSENBRENNER, JR. ..... (202) 225-5101

Rep. of Menomonee Falls; born June 14, 1943 in Chicago, IL; JD Univ. of Wisconsin, 1968; practicing attorney; member, State Assembly 1969-75, State Senate 1975-78; first elected to Congress in 1978—9th term.

WYOMING



Number of House Seats:
1 Republican

GOVERNOR

JIM GERINGER

Rep. of Wheatland; born Apr. 24, 1944 in Wheatland; BS Kansas State University; Lt. Col., U.S. Air Force 1967-77; USAF Reserves 1977-1991; farmer; member, State House 1982-87; State Senator 1988-94; elected governor in 1994, term ends 1998.

SENATORS

ALAN K. SIMPSON ..... (202) 224-3424

Rep. of Cody; senior senator; born Sept. 2, 1931 in Denver, CO; LLB Univ. of Wyoming, 1958; asst. atty. general 1958-59; member, State House 1964-77; elected to the U.S. Senate in 1978, 3rd term ends in 1997.

CRAIG THOMAS ..... (202) 224-6441

Rep. of Casper; junior senator; born Feb. 17, 1933 in Cody; LLB LaSalle University, 1963; businessman; member Farm Bureau; rural electric assoc. official; member, State House 1985-89; member of U.S. House 1989-95; elected to the U.S. Senate in 1994, 1st term ends in 2001.

DISTRICTS/REPRESENTATIVE

At Large/BARBARA CUBIN..... (202) 225-2311

Rep. of Casper; born Nov. 30, 1946 in Salinas, CA; BS Creighton University, 1969; office manager; chemist; social worker; substitute teacher; statewide coordinator, special election of Congressman Craig Thomas, 1989; member, State House 1987-92, State Senator 1993-94; elected to Congress in 1994—1st term.

WASHINGTON, D.C.

Number of House Delegates:
1 Democrat

MAYOR

MARION BARRY, JR.

Dem. of Washington, DC; born March 6, 1936 in Itta Bena, MS; BS LeMoyne College; MS Fisk University; civil rights coordinator; first chair, Student Non-Violent Coordinating Committee 1960; councilmember 1974-78; mayor of DC 1979-90; councilmember 1992-95; re-elected mayor in 1994, term ends in 1999.

DELEGATE

ELEANOR HOLMES NORTON..... (202) 225-8050

Dem. of Washington, DC; born June 13, 1937 in Washington, DC; LLB Yale Univ., 1964; member, NY Human Rights Commission 1970-77; chair, U.S. Equal Employment Opportunity Commission 1977-81; professor; writer; elected to Congress in 1990—3rd term.

AMERICAN SAMOA

Number of House Delegates:
1 Democrat

GOVERNOR

A.P. LUTALI

Dem.; born Dec. 24, 1919 in Aunu'u; elected to American Samoa House of Representatives in 1955; elected to American Samoan Senate 1965; chairman of the 1966 Consititutional Convention; American Samoa representative in Washington, DC 1975-79; elected governor 1985-1989, elected governor 1992, term ends 1997.

DELEGATE

ENI F.H. FALEOMAVAEGA ..... (202) 225-8577

Dem.of Pago Pago; born Aug. 15, 1943 in Vailoatai Village; LLM Univ. of CA-Berkley, 1973; U.S. Army 1966-69; admin. asst. to High Chief A. U. Fuimaono (delegate to Washington) 1973-75; staff counsel, House Committee on Internal and Insular Affairs 1975-81; deputy atty. general 1981-84; lt. governor 1984-88; first elected to Congress in 1988—4th term.

GUAM

Number of House Delegates:
1 Democrat

GOVERNOR

CARL T.C. GUTIERREZ

Dem. of Agana; born in Agana Heights, G South San Francisco U.S. Air Force; publi tion; businessman; founder of Guam Yo 1972; State Senate 197 governor in 1994, te

DELEGATE

ROBERT UNDERWOOD..... (2

Dem. of Yona; born J in Tamuning; EDD, Uni California, 1987; MA C 1971; BA Cal State member, Guam Terr of Education, 1978 Academic Vice Presi Guam; first elected t 1992— 2nd term.

PUERTO RICO

Resident Commissioner:
1 Democrat

GOVERNOR

PEDRO J. ROSSELLO

New Progressive; born in Santurca; MD Yale general and pediatric su University Medical S tor of health for San J resident commissione Progressive Party in DC 1988; elected pre party in 1991; elected 1992, term ends 1997

:AN SAMOA

ouse Delegates:

Dem.; born Dec. 24, 1919 in Aunu'u; elected to American Samoa House of Representatives in 1955; elected to American Samoan Senate 1965; chairman of the 1965 Consititutional Convention; American Samoa representative in Washington, DC 1975-79; elected governor 1985-1989, elected governor 1992, term ends 1997.

E

EOMAVAEGA ..... (202) 225-8577

Dem.of Pago Pago; born Aug. 15, 1943 in Vailoatai Village; LLM Univ. of CA-Berkley, 1973; U.S. Army 1966-69; admin. asst. to High Chief A. U. Fuimaono (delegate to Washington) 1973-75; staff counsel, House Committee on Internal and Insular Affairs 1975-81; deputy atty. general 1981-84; lt. governor 1984-88; first elected to Congress in 1988—4th term.

GUAM

Number of House Delegates:
1 Democrat

GOVERNOR

CARL T.C. GUTIERREZ

Dem. of Agana; born Oct. 15, 1941 in Agana Heights, GU; Graduate, South San Francisco High School; U.S. Air Force; public administration; businessman; homebuilder; founder of Guam Youth Congress 1972; State Senate 1972-1994; elected governor in 1994, term ends 1998.

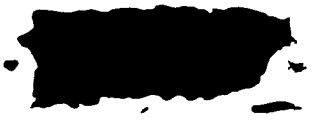
DELEGATE

ROBERT UNDERWOOD..... (202) 225-1188

Dem. of Yona; born July 13, 1948 in Tamuning; EDD, Univ. of Southern California, 1987; MA Cal State Univ., 1971; BA Cal State Univ., 1969; member, Guam Territorial Board of Education, 1978-82; Retired Academic Vice President, Univ. of Guam; first elected to Congress in 1992— 2nd term.

PUERTO RICO

Resident Commissioner:
1 Democrat



GOVERNOR

PEDRO J. ROSSELLO

New Progressive; born April 5, 1944 in Santurca; MD Yale; specialty in general and pediatric surgery Harvard University Medical School; director of health for San Juan 1985-89; resident commissioner for the New Progressive Party in Washington, DC 1988; elected president of the party in 1991; elected governor in

RESIDENT COMMISSIONER

CARLOS ROMERO-BARCELO (202) 225-2615

Dem. of San Juan; born Sept. 4, 1932 in San Juan; JD Univ. of Fuerto Rico, 1956; attorney; mayor of San Juan 1969-77; governor, 1977-85; president, New Progressive Party; first elected to Congress in 1992—1st term ends in 1997.

VIRGIN ISLANDS

Number of House Delegates:
1 Independent

GOVERNOR

ROY L. SCHNEIDER

Ind. of St. Thomas; born in St. Thomas; MD Howard University, 1965; surgeon; instructor; Commissioner of Health, U.S. Virgin Islands 1977-95; elected governor in 1994, term ends 1999.

DELEGATE

VICTOR O. FRAZER ..... (202) 225-1790

Ind. of St. Thomas; born May 24, 1943 in St. Thomas; JD Howard University, 1971; BA Fisk University, 1964; private practice 1992-94; Administarive Assistant to U.S. Representative Mervyn M. Dymally 1980-92; attorney; elected to Congress in 1994—1st term.

EXECUTIVE SECRETARIAT CONTROL NUMBER 920511-4

DOCUMENT ROUTING SLIP	ACTION COPY	INFO COPY		ACTION COPY	INFO COPY
OFFICE OF THE CHAIRMAN			**COMMISSION MEMBERS**		
CHAIRMAN COURTER			COMMISSIONER BALL		
STAFF DIRECTOR		✓	COMMISSIONER CALLAWAY		
GENERAL COUNSEL			COMMISSIONER CASSIDY		
MILITARY EXECUTIVE			COMMISSIONER LEVITT		
SPECIAL ASSISTANT			COMMISSIONER SMITH		
			COMMISSIONER STUART		
COMMUNICATIONS/PA					
DIRECTOR OF COMMUNICATIONS					
PRESS SECRETARY			**REVIEW AND ANALYSIS**		
FOIA OFFICER			DIRECTOR OF REVIEW & ANALYSIS		✓
SENATE LIAISON		✓	DEPUTY DIRECTOR		✓
HOUSE LIAISON			[redacted] M. JONES	11/17/92	✓
EXECUTIVE SECRETARIAT			ARMY TEAM LEADER	11/17/92	✓
			NAVY TEAM LEADER	11/17/92	✓
ADMINISTRATION			AIR FORCE TEAM LEADER	11/17/92	✓
DIRECTOR OF ADMINISTRATION		✓	SPECIALTY TEAM LEADER	11/17/92	✓

TYPE OF ACTION REQUIRED

	Prepare Reply For Chairman's Signature		Appropriate Action
	Prepare Reply for Commissioner's Signature		Comments and/or Recommendations
	Prepare Reply for Staff Director's Signature		Clear Reply with
	Reply Direct (forward copy to Exec Sec)		Coordinate Reply with

SUBJECT/REMARKS

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM (DERP) ANNUAL REPORT TO CONGRESS FOR FY '91.

(FEB. '92)

CLEARANCE SIGNATURE

ACTION DUE DATE	ROUTING DATE	RECEIPT DATE	EXEC SEC MAIL DATE
	5-11-92	5-11-92	

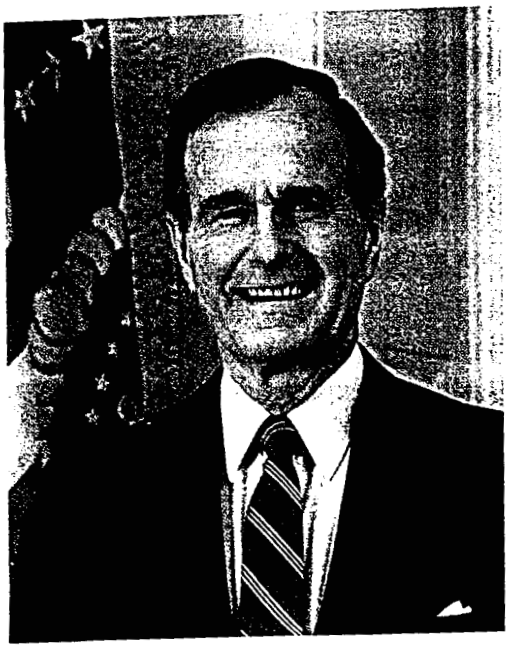
RETURN THIS ROUTING SLIP WITH DOCUMENT ATTACHED DIRECTLY TO EXEC SEC

ES*7L0511-4

Defense Environmental Restoration Program

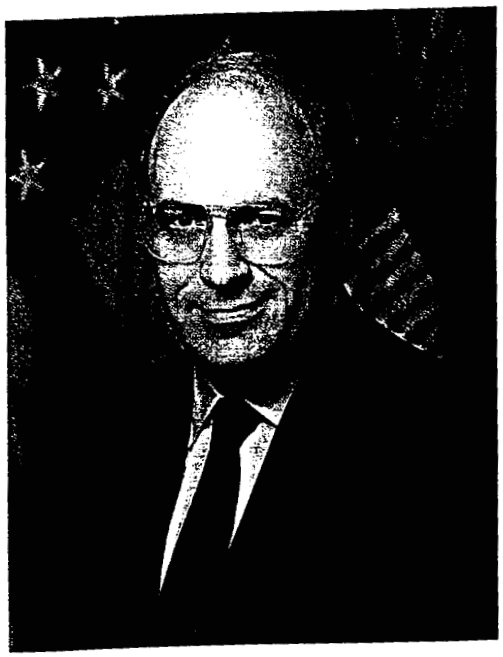
Annual Report to Congress for Fiscal Year 1991

February 1992



"Our administration has crafted a new, common-sense approach to environmental issues — one that honors our love of the environment and our commitment to growth."

President George Bush



"True Leadership is more than mere compliance, it means action and commitment."

Secretary of Defense Richard Cheney

Foreword

The Department of Defense (DoD) is pleased to provide the Congress with this report on the accomplishments of the Defense Environmental Restoration Program (DERP) for Fiscal Year 1991. This last year saw steady progress throughout the Program, most notably in characterizing contamination at our facilities and selecting remedial approaches. The Department completed investigation work at a substantial number of sites and cleared the way for cleanup efforts to begin.

Our DERP efforts in Fiscal Year 1991 focused primarily on investigations leading toward the cleanup of contaminated DoD sites and formerly used properties. To this end, over 94 percent of the funds authorized by Congress for DERP this past fiscal year were invested in Installation Restoration Program (IRP) efforts. The remainder of the funds were applied to Hazardous Waste Minimization, Research and Development, and Building Demolition and Debris Removal projects. During Fiscal Year 1991, the Department focused considerable efforts on improving our ability to move sites quickly from the study phase to remediation. In addition, progress continued in various phases of the Program, the training of our personnel improved, solid progress was achieved at our National Priorities List (NPL) sites, and work advanced to the remedial action phase at many non-NPL sites.

This year, our primary effort focused on increasing our commitment and ability to move sites rapidly through the study phase of the Program and into the actual cleanup phase. DoD Components have been encouraged to begin required remediation work as quickly as is possible while abiding by appropriate regulatory criteria. The Department is confident these efforts will succeed, given adequate resources, regulatory agency cooperation and the continued dedication of DoD personnel.

Increasing the pace at which site cleanups are conducted entails many new challenges. The Department has identified several areas where considerable interagency cooperation is required to streamline the restoration process. DoD is working closely with other Federal agencies and state regulatory authorities to implement procedures for moving sites rapidly from the investigation phase to cleanup. Two such efforts are underway now. The first involves integrating overlapping regulatory programs and emphasizing the final remedial product rather than the process. The second involves an interagency effort to establish a **team approach** between DoD and the U.S. Environmental Protection Agency (EPA) project managers for selecting remedies at NPL sites. These efforts, if successful, could allow DoD to trim years from the time otherwise needed to complete many planned cleanups.

In a report recently transmitted to the Congress, the Defense Environmental Response Task Force recommended expediting required installation cleanup and land transfer at bases scheduled for closure by modifying current procedures in several areas. These areas involve land use and transfer, the cleanup process, contracting, liability concerns, regulatory responsibilities, resources, and funding. The Department is committed to pursuing all of the Task Force's recommendations.

As the IRP moves into the cleanup phase, our reliance on remediation contractors is increasing. During Fiscal Year 1991, DoD reported to the Congress on liability, bonding and indemnification issues that affect the willingness and ability of contractors to participate in site cleanups. That activity, part of our ongoing review and update of contracting strategies, will lead to changes in the contracting strategies and policies within our control. The military departments will also study risk-sharing options available for promoting appropriate and equitable allocation of risk between the Department and our cleanup contractors. DoD will continue to work with the contractor community and other interested parties to explore these and other opportunities. Through such efforts, we intend to resolve many of the remedial action contractor liability issues the Department now faces.

As the level and complexity of IRP activities increase, so does our need for effective and specialized management skills. To meet these challenges, the Department is continuing to increase the training provided to our personnel. More people are being trained in areas critical to DERP than ever before, and our training programs are expanding to cover the complex and technically diverse skills needed to manage our restoration program initiatives. Our training now includes topics such as negotiating skills needed to develop workable cleanup agreements with regulatory authorities. Last year alone, over 2,000 DoD personnel received DERP-related training.

The number of sites and installations covered by the IRP stabilized in Fiscal Year 1991, while the number of sites where IRP work is complete increased. Last year saw only a modest one percent growth in IRP site counts, as compared to the 115 percent growth that occurred over the preceding two years. In addition, pollution hazards have been removed or studies have shown that no threat to human health or the environment exists at over one-third of the 17,660 sites included in the IRP.

This past fiscal year saw advances in every phase of the IRP. From Preliminary Assessment through Remedial Action, the number of sites where these IRP activities were completed increased. Most notably, the number of sites with completed Remedial Investigation/Feasibility Study efforts rose 63 percent last year. The majority of these sites should move into the cleanup phase this year. In addition, during Fiscal Year 1991 DoD registered a 26 percent increase in the number of sites where Remedial Action projects have been completed.

The Department also continued to pursue the investigation and cleanup of NPL sites. By the end of the year, 90 DoD installations were included on the NPL or were proposed for listing. Remedial Investigation/Feasibility Study work was underway at all 90 facilities, and cleanup had commenced at 86 sites by the end of the year. Further, the number of NPL installations covered by signed Interagency Agreements rose, from 51 in Fiscal Year 1990 to 77 at the end of last year.

DoD has placed considerable emphasis on involving state regulatory authorities in the IRP process. During Fiscal Year 1991, Defense and State Memoranda of Agreement (DSMOA) were signed with 14 states, bringing the total number of completed agreements to 29. Through these DSMOA, almost $16 million was provided to state regulatory agencies last year to allow their full participation in the evaluation and oversight of IRP activities.

The Department continues to pursue vigorous Research & Development and Hazardous Waste Minimization Programs aimed at fostering quicker, more cost-effective, remedial solutions and at reducing the amount of waste generated by our installations. These waste minimization efforts will help reduce DoD's potential for generating new hazardous waste sites.

Our progress to date is the result of the perseverance and commitment of our environmental managers. Through them, we have built a solid environmental ethic within the Department, from the installation level right up to this Headquarters. DoD is committed to continuing and building on this momentum in the coming years, ensuring that our remediation efforts progress as rapidly as possible in a cost effective manner.

This report provides Congress and the public with a comprehensive assessment of DERP efforts to date and our plans for the future. The success of these efforts is dependent upon the support we receive from Congress, environmental regulatory authorities and the public. We look forward to working together to continue the critical work required to properly remediate our sites.

Thomas E. Baca
Deputy Assistant Secretary of Defense
(Environment)

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The Defense Environmental Restoration Program

The Defense Environmental Restoration Program (DERP) was established in 1984 to promote and coordinate efforts for the evaluation and cleanup of contamination at Department of Defense (DoD) installations. The program currently includes:

- The Installation Restoration Program (IRP), where potential contamination at DoD installations and formerly owned or used properties is investigated and, as necessary, site cleanups are conducted: and

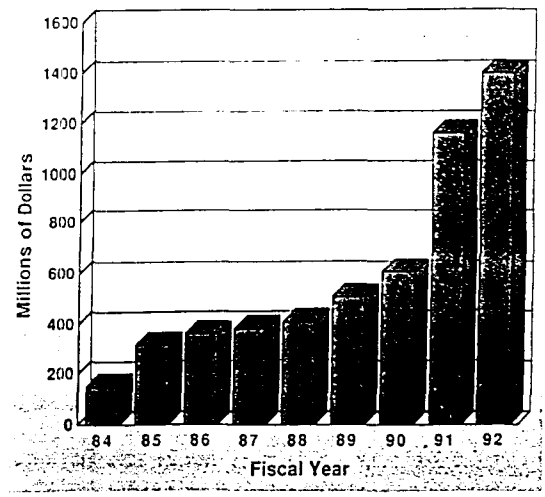
- Other Hazardous Waste (OHW) Operations, through which research, development, and demonstration programs aimed at improving remediation technology and reducing DoD waste generation rates are conducted.

In addition, a small number of Building Demolition and Debris Removal (BDDR) projects were conducted under DERP in fiscal year (FY) 1991. These involved demolishing and removing unsafe buildings and structures at DoD installations and formerly used properties. FY 1991 marked the first time any BDDR projects had been conducted under DERP since FY 1987.

DERP is managed centrally by the Office of the Secretary of Defense. Policy direction and oversight of DERP is the responsibility of the Deputy Assistant Secretary of Defense (Environment). Each individual defense component is responsible for program implementation.

The Superfund Amendments and Reauthorization Act of 1986 (SARA) provides continuing authority for the Secretary of Defense to carry out this program in consultation with the U.S. Environmental Protection Agency (EPA). Executive Order 12580 on Superfund Implementation, signed by the President on January 23, 1987, assigned responsibility to the Secretary of Defense for carrying out the Department's Environmental Restoration Program within the overall framework of SARA and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The Defense Appropriations Act provides the primary funding for DERP. Funding for restoration work at bases scheduled for closure is provided by the Base Closure Account.

DERP Funding



DERP funding has grown steadily, from $150 million in FY 1984 to over $1.4 billion in FY 1992. The FY 1992 funding includes $220 million for restoration of bases scheduled for closure.

The Installation Restoration Program

The Installation Restoration Program (IRP) conforms to the requirements of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). EPA guidelines are applied in conducting investigation and remediation work in the program.

The initial stage, a **Preliminary Assessment** or **PA**, is an installation-wide study to determine if sites are present that may pose hazards to public health or the environment. Available information is collected on the source, nature, extent, and magnitude of actual and potential hazardous substance releases at sites on the installation. The next step, a **Site Inspection** or **SI**, consists of sampling and analysis to determine the existence of actual site contamination. The information gathered is used to evaluate the site and determine the response action needed. Uncontaminated sites do not proceed to later stages of the IRP process.

Contaminated sites are investigated fully in the **Remedial Investigation/Feasibility Study** or **RI/FS**. The RI may include a variety of site investigative, sampling, and analytical activities to determine the nature, extent, and significance of contamination. The focus of the evaluation is determining the risk to the general population posed by the contamination. Concurrent with these investigations, the FS is conducted to evaluate remedial action alternatives for the site.

After agreement is reached with appropriate EPA and/or state regulatory authorities on how to clean up the site, **Remedial Design/Remedial Action** or **RD/RA** work begins. During this phase, detailed design plans for the cleanup are prepared and implemented.

A notable exception to this sequence involves Removal Actions and Interim Remedial Actions (IRAs). These actions may be conducted at any time during the IRP to protect public health or control contaminant releases to the environment. Such measures may include providing alternate water supplies to local residents, removing concentrated sources of contaminants, or constructing structures to prevent the spread of contamination.

Each step in the IRP process is thoroughly documented in reports available to the general public. Individuals or organizations can obtain copies of these documents by contacting the Public Affairs Offices at the installations in which they are interested. In addition, public meetings and hearings are also held at various times during the cleanup process to further facilitate public participation.

The National Priorities List (NPL)

EPA established a Hazard Ranking System (HRS) for evaluating contaminated sites based on the potential hazard posed to public health and the environment. In 1991, a revised Hazard Ranking System was adopted by EPA for evaluating future sites. The application of these ranking systems, using PA/SI data, generates a score for each site evaluated. The score is computed based on factors such as the amount and toxicity of the contaminants present, their potential mobility in the environment, the availability of pathways for human exposure, and the proximity of population centers to the site.

The NPL is a compilation of sites scoring 28.5 or higher under HRS. Such sites are first proposed for NPL listing. Following a public comment period, proposed NPL sites may be listed final on the NPL or may be deleted from consideration.

IRP Priorities

The order in which DoD conducts IRP project activities is based on a policy assigning the highest priorities to sites that represent the greatest potential public health and environmental hazards. Top priority is assigned to:

- Removal of imminent threats from hazardous or toxic substances or unexploded ordnance (UXO);
- Interim and stabilization measures to prevent site deterioration and achieve life cycle cost savings;
- RI/FSs at sites either listed or proposed for the NPL and RD/RAs necessary to comply with SARA.

Anticipating the need to refine priorities as the DERP matures and a large number of sites simultaneously reach the costly cleanup phase, DoD developed the Defense Priority Model (DPM). Unlike HRS, which uses only PA/SI data to score sites, DPM uses the more detailed data available from the RI to produce a score indicating the relative risk to human health and the environment presented by a site. The model considers the following site characteristics:

- Hazard – the characteristics, concentrations and mobility of contaminants;
- Pathway – the potential for contaminant transport via surface water, ground water and air/soil;
- Receptor – the presence of potential human and ecological receptors.

This risk-based approach recognizes the importance of protecting public health and the environment and helps to identify objectively those sites that should receive priority for funding.

In FY 1989, DoD completed initial development of DPM. In response to comments received from EPA, the state, environmental organizations, and the public, the model was refined.

In the last two years, considerable effort has been committed to improving DPM's performance and reliability. This work has resulted in an accurate and user-friendly system that uses key data produced during the RI and allows site comparisons on the basis of risk. Although we will continue to strengthen DPM through added system refinements, the existing system is fully capable of supporting our IRP prioritization needs. We are also continuing a dialogue with EPA and other federal agencies to identify a common approach to prioritization.

Almost 200 DoD personnel were trained in the most recent version of DPM during FY 1991. A complete support network, including a user hotline, has been established. Prior to receiving DERP funding for RD/RA efforts, virtually all IRP sites are now scored using DPM.

To date, funding has been adequate to support all executable cleanups. This situation will change as many sites now under study become ready for remediation simultaneously. In a constrained funding situation, DPM will provide an excellent means for identifying sites to receive funding first.

Base Closures

The Base Closure and Realignment Acts of 1988 (BRAC 88) and 1990 (BRAC 90) resulted in the identification of 113 military bases scheduled for closure and another 62 installations scheduled for realignment. Appendix F of this report identifies those installations scheduled for closure. Considerable investigation and, in certain cases, remediation may be required before properties at closed bases can be transferred from DoD or used for other purposes.

Congress is providing $220 million during FY 1992 through the DoD BRAC 88 Account for environmental restoration at bases scheduled for closure. DoD is applying the same remediation methodologies and protocols used at other IRP sites to cleanup efforts at installations scheduled for closure or realignment.

In response to specific requirements contained in the FY 1991 National Defense Authorization Act, a Task Force created last year identified ways to improve federal-state coordination of environmental response actions and streamline cleanup at bases to be closed or realigned. In addition to DoD, this Defense Environmental Response Task Force included participants from the U.S. Department of Justice, EPA, the General Services Administration, the National Governors' Association, the National Association of Attorneys General, and environmental organizations.

The Task Force recently reported to Congress on several measures to improve the restoration process. Their recommendations included the adoption of procedures and criteria to guide the transfer and use of contaminated DoD lands, the integration of overlapping regulatory requirements, and measures to improve coordination among Federal and state decision makers.

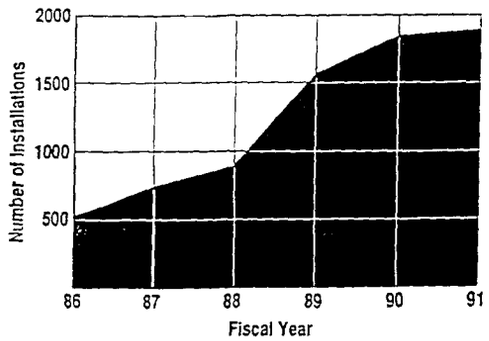
DoD is committed to pursuing all Task Force recommendations. The success of these efforts should improve our ability to complete cleanup work rapidly at all Department IRP sites.

IRP Activity Levels Have Stabilized

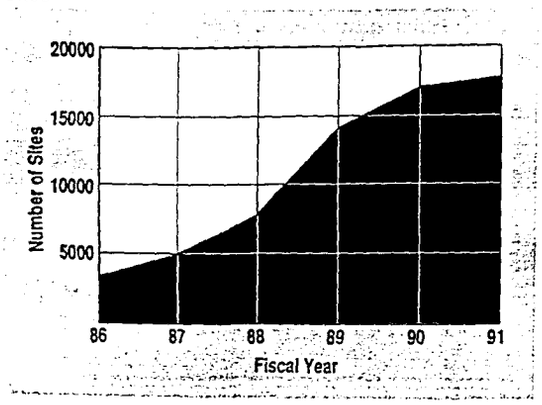
After two years of substantial growth, the number of installations included in the IRP stabilized in FY 1991. Consistent with the Department's worst-first policy, emphasis initially was placed on identifying industrial facilities with the highest probability for contamination. Efforts expanded yearly to include installations with lower hazard potential. In addition, installation reassessments initiated to satisfy SARA requirements as well as Resource Conservation and Recovery Act (RCRA) Corrective Action efforts continued to locate additional sites not previously included in the program.

These efforts resulted in a 115 percent growth in the number of IRP sites during the FY 1989 and 1990 time period. In contrast, IRP site counts increased by only one percent during FY 1991. At the end of last year, a total of 17,660 sites at 1,877 installations were included in the IRP.

Installations



Sites



The number of DoD installations listed on the NPL did not increase in FY 1991. However, one new DoD installation was proposed for listing last year. By the end of FY 1991, 89 DoD installations were listed on the NPL and one was on the proposed list. (Because EPA has divided seven installations into two NPL listings each, 96 DoD installation listings appear on the NPL.)

DoD Supports State Participation Through DSMOA

To facilitate active state participation in the IRP, a process was developed that allows DoD to reimburse the states for up to one percent of costs. This procedure was developed through lengthy negotiations between DoD and the Association of State and Territorial Solid Waste Management officials, the National Governors' Association, and the National Association of Attorneys General.

These negotiations resulted in the development of the model Defense and State Memoranda of Agreement (DSMOA) in 1989. The DSMOA not only address state agency technical support at NPL sites, but also provide the process for work at non-NPL sites. Along with non-NPL reimbursement, the DSMOA provide a process for DoD and the states to resolve technical disputes before judicial remedies are sought. The DSMOA also include provisions reflecting the willingness of the state to accept DPM as DoD's method of establishing priorities among sites in the event of a funding shortfall.

Reimbursement is available through a Cooperative Agreement (CA) to those states that have signed DSMOA. The Commander, U.S. Army Corps of Engineers (USACE), is the DoD Executive Agent for negotiating DSMOA and receiving, processing, and monitoring CA applications. Each CA covers a two-year period.

States' reporting requirements under CAs are minimal and allow them to transfer their oversight funding between installations. Past costs incurred after October 17, 1986 (the date SARA was enacted) also are covered in the CA. Base Realignment and Closure and Defense Logistics Agency Stock Fund installations are also included in the program for reimbursement.

To date, three workshops have been held at which DoD, EPA and state representatives have met to explore ways to improve the IRP and DSMOA/CA processes. These workshops have helped to further solidify the DoD/state cooperative working relationships essential to the success of the IRP.

"Cooperative interchange between the states and the various services at environmental workshops "...is building the necessary bridges to develop the problem-solving teams envisioned for the Superfund/DERP cleanup process."

Enrique P. Gentzsch
Minnesota Pollution Control Agency

All states and territories have been contacted and encouraged to participate in the DSMOA process. Favorable responses have been received from 48 states and territories. DoD signed 14 DSMOA in FY 1991, bringing the total of signed memoranda to 29. In addition, 14 CAs were completed last year, yielding a total of 26 finalized agreements. Almost $16 million was provided to states in FY 1991 under these CAs to enhance their participation in the IRP process. Appendix D, Table D-2 provides state-by-state DSMOA status.

The progress made in FY 1991 in preparing DSMOA and CAs represents a significant achievement in enhancing cooperation among DoD and state authorities. The establishment of Interagency Agreement (IAG), CA, and DSMOA models and the training of DoD and state personnel in their development helps provide a nationally consistent process for effective site cleanup.

IAGs Are A Critical Step in the Cleanup of NPL Sites

SARA requires that an IAG be reached between EPA and DoD within 180 days after completion of the Record of Decision (ROD) for each NPL-listed facility. The ROD, a public document explaining which cleanup alternatives will be used at an installation, marks the completion of the RI/FS. (An exception involves interim RODs sometimes used to document agreements concerning Interim Response Actions.) The completed IAG provides a detailed management plan for the effective cleanup of the facility.

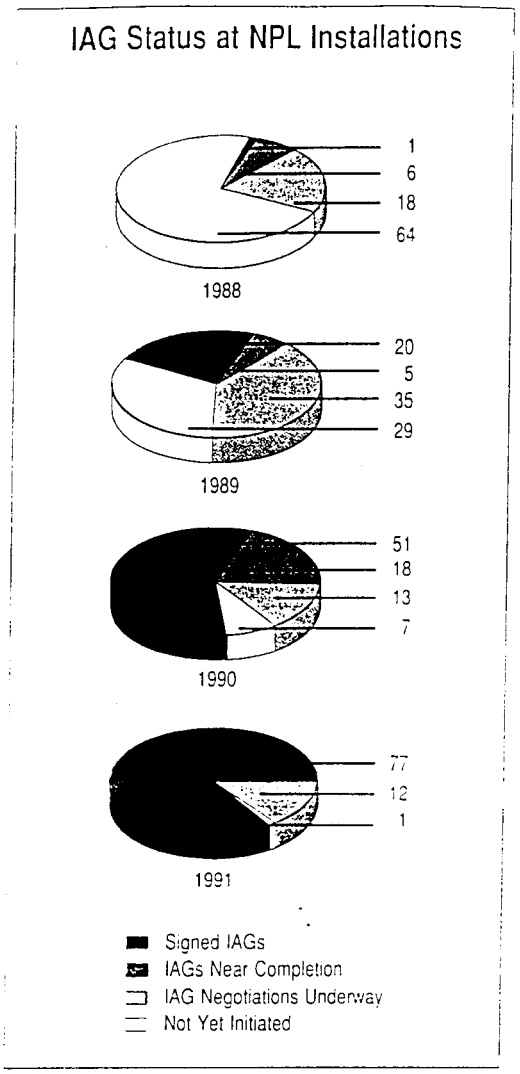
The involvement of EPA and state authorities in preparing the IAG ensures their concurrence and enhances the credibility of the course of action taken by DoD. The IAG also provides a strong management tool for resolving issues rising from overlapping or conflicting jurisdictions.

The IAG negotiation process involves personnel from the applicable DoD Component, the EPA regional office and state environmental authorities. Identifying and resolving issues typically takes several months. Once the parties conclude negotiations, the agreement is signed and made available for public comment to fulfill regulatory requirements. Comments received are considered and appropriate changes are made before the agreement goes into effect. The IAG can also serve to fulfill corrective action requirements.

The Department recognizes the advantages of involving all parties well before the IAG is required (i.e., before the ROD). Accordingly, DoD involves EPA and the states in the IRP process from early assessment and characterization through final cleanup of the site.

The Department seeks a cooperative and collaborative ongoing effort with all parties to avoid discovering problems late in the process that could result in costly delays. The early establishment of good working relationships also resolves potentially duplicative and possibly conflicting regulatory requirements governing cleanup, such as those that occur between CERCLA and RCRA. To fully realize these benefits, we are routinely entering into IAGs during the RI/FS phase. These "pre-ROD" IAGs, or Federal Facilities Agreements (FFAs), are amended as IRP work progresses and become the IAG required under SARA.

In 1988, the Department and EPA completed negotiation of IAG model language for NPL sites. Subsequent guidance was issued to the components concerning the state role in the IAG process. Nationwide, the negotiations simultaneously accelerated. Workshops were held with EPA and state agencies to refine site-specific language for the agreements. Training sessions for DoD personnel who will negotiate agreements also were held.



The progress already made is evident from the number of IAGs signed and nearing completion. By the end of FY 1990, IAGs had been signed for 51 DoD installations final-listed on the NPL. By the end of FY 1991, this number grew to 77. In addition, another 12 IAGs were near completion.

To help expedite cleanups at contaminated installations, sites are often grouped (or in some cases divided) to form Operable Units (OUs). Rather than delaying RA activities until agreement is reached on cleanup procedures at all sites on an installation, individual OUs at an installation are allowed to progress independently through the IRP process. At many DoD NPL installations, this approach will result in the completion of multiple RODs and IAGs, each covering one or more OUs.

Installation Restoration Program Status

During FY 1991, DoD increased its efforts to expedite the start of remediation work at all sites where it is required. We recorded real progress in moving sites into the cleanup phase last year, registering substantial advances in completed site investigation activities. However, we must continue to find ways to accelerate the pace of site cleanups. To that end, several initiatives were undertaken in FY 1991 to help streamline the transition from investigation to cleanup and to move restoration actions along at a quicker pace. Ultimately, these efforts will reduce human health and environmental risks at DoD sites and minimize program costs.

In October, the Defense Environmental Restoration Task Force reported to Congress on several issues critical to expediting required IRP cleanups. Their recommendations are being actively pursued through several DoD and interagency projects. We have formed "Experts Groups" with the Department of Energy (DOE) and EPA to pursue standardized approaches for dealing with restoration issues. In a joint effort with EPA, we also are nearing completion of a management guide for moving sites quickly into the cleanup phase. A major focus of these efforts is the timely remediation of our NPL sites and defense installations scheduled for closure.

This past year the Department also took steps to ensure the availability and proper management of resources needed to expedite required site cleanups. In two separate reports submitted to Congress during FY 1991, we identified our long-term IRP funding requirements and evaluated issues related to our remedial action contractors' liabilities.

As described in the Program Funding section of this report, we now estimate the total cost to complete the IRP to be $24.5 billion, including FY 1991 funds. Last year also saw continued improvements in our capability to prioritize funding among sites to be remediated.

We have taken several actions to address contractor liability issues and to ensure that quality, cost effective remediation services will be available in the future. We also are evaluating measures for providing equitable risk sharing between the government and remediation contractors.

Installation Restoration Program
Summary of Installations and Sites

Service	Number of Installations	Number of Sites	Number of Active Sites	Closed-Out Sites*
Army	1,265	10,578	5,524	5,054
Navy**	247	2,409	1,688	721
Air Force	331	4,354	3,520	834
DLA***	34	319	192	127
Total	1,877	17,660	10,924	6,736

*Formerly "Sites Requiring No Further Action."
**Includes Marine Corps.
***DLA = Defense Logistics Agency.

Across-the-Board Progress Registered in the IRP

The IRP gained significant momentum in FY 1991. By the end of the fiscal year, 6,336 projects were actively underway at sites throughout the nation. In keeping with the Department's worst-first policy, considerable effort has been focused on the 90 DoD installations included on or proposed for the NPL. Of the 372 remedial activities completed to date (Removal Actions, IRAs, and final RAs), 207 have been at NPL sites.

The end point for IRP sites is closeout. A closed-out site is one where no further actions are considered appropriate and no further response action is planned (NFRAP). NFRAP is a CERCLA term incorporated into the NCP final rule in March 1990. The primary criteria for NFRAP is a determination that the site does not pose a significant threat to public health or the environment. NFRAP decisions can be made at any point in the IRP process, but must be documented and may be reversed if future information reveals that additional remedial activities are warranted. The majority of site closeout decisions are for non-NPL sites. These decisions are made by the components and then coordinated with the appropriate regulatory agencies.

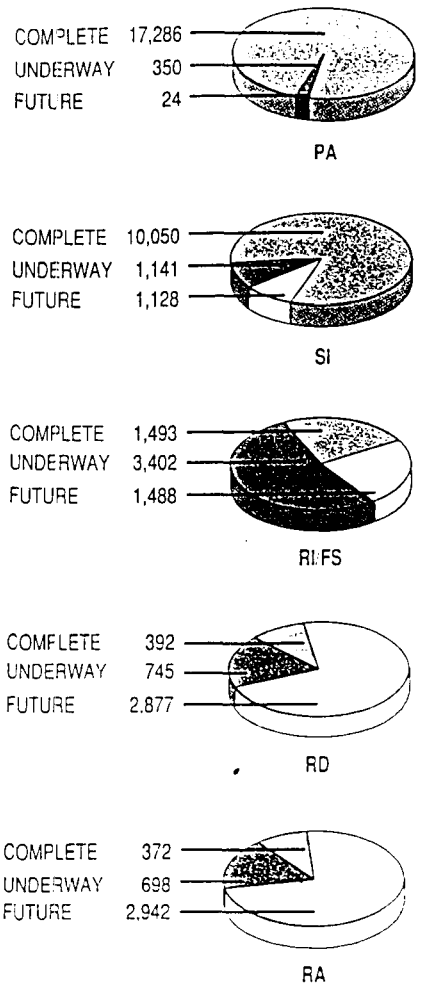
At the end of FY 1991, DoD components had identified 6,736 sites, or more than 38 percent of the total number of IRP sites, as closed out (i.e., in the NFRAP category). Although some sites could be reactivated in the future by regulatory authorities or the components, their closeout represents significant real progress in the IRP.

By the end of FY 1991, PAs had been completed at 17,286 of the 17,660 identified IRP sites. SIs had been completed at 10,050 sites. The majority of site closeouts registered to date have occurred as a result of PAs in which no evidence of contamination was found.

At the end of FY 1991, RI/FS efforts had been completed at 1,493 sites. This represents a 63 percent increase in RI/FS completions from the previous year. RI/FS activities are either complete or underway at 77 percent of the sites where they are known to be needed.

At the end of FY 1991, 4,012 sites had been identified where remedial activities are needed. Of these, 372 had been completed. This represents a 26 percent increase in completed RAs from FY 1990. Further, 698 sites had RAs underway at the end of the year.

IRP Status by Program Phase



Installation Restoration Program Status as of September 30, 1991
Summary by Military Service

	Number of Sites (by Phase)																	
	PA				SI				RI/FS				RD			RA		
	C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
Army	10,567	6	5	4,763	4,330	192	1,050	242	355	955	886	49	141	234	1,075	146	237	1,079
Navy*	2,362	43	4	200	1,580	477	68	506	38	971	529	10	9	27	1,286	60	38	1,330
Air Force	4,038	301	15	75	3,821	472	10	526	1,053	1,313	69	165	230	475	387	150	415	404
DLA	319	0	0	0	319	0	0	104	47	163	4	23	12	9	129	16	8	129
Totals	17,286	350	24	5,038	10,050	1,141	1,128	1,378	1,493	3,402	1,488	247	392	745	2,877	372	698	2,942

C = Completed Activity ♦ U = Underway Activity ♦ F = Future Activity Planned ♦ CO = Closed-Out Sites

*Includes Marine Corps.

Remedial Activities Initiated in FY 1991
Summary for all IRP Installations

Type of Activity	Number of Activities	Number of Installations
Alternate Water Supply/Treatment	12	11
Incineration	2	2
Site Treatment/ Remediation	85	50
Decontamination	3	3
Waste Removal	116	67
Ground Water Treatment	35	30
TOTAL	253	163

During FY 1991, 253 remedial activities were undertaken at 163 installations. The number of actions is greater than the number of installations, as more than one type of action was taken at some installations.

Solid Progress is Evident at NPL Sites

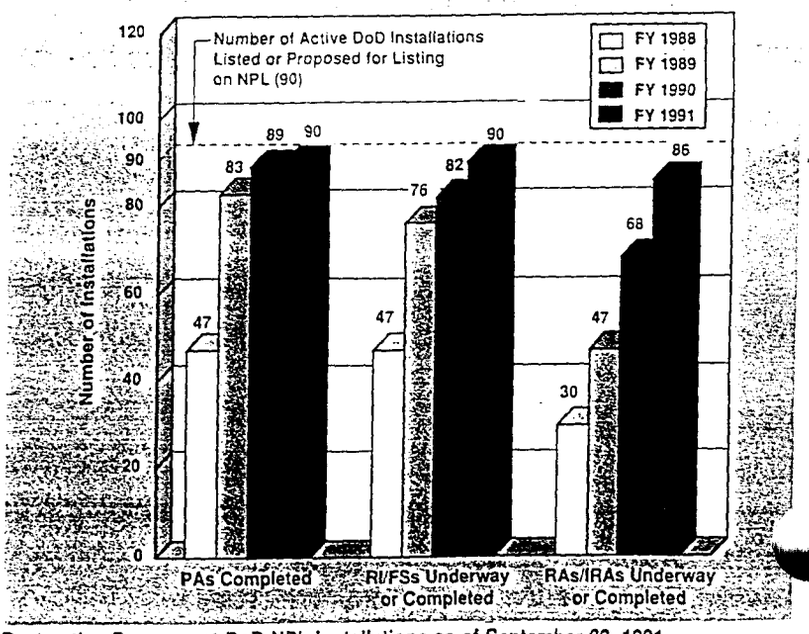
The Department made steady gains in the evaluation and cleanup of NPL sites in FY 1991. Completed PA activities at all the Department's 90 NPL installations increased from 89 to 90. The number of RI/FSs completed or underway went from 81 to 90. Further, the number of installations at which interim remedial actions were taken or RAs were underway increased from 68 to 86 in FY 1991.

FY 1991 also saw the completion of RODs for at least one OU at eight NPL installations: Bangor Naval Submarine Base, Washington; Lakehurst Naval Air Station, New Jersey; Castle Air Force Base (AFB), California; Fort Dix, New Jersey; Letterkenney Army Depot, Pennsylvania; Dover AFB, Delaware; McChord AFB, Washington; and Robbins AFB, Georgia. This brings to 12 the number of NPL installations with signed RODs. Although each completed ROD generally covers only a portion of the installation, they all contribute to the final and complete restoration of the installation.

"Expert Groups" are Tackling Bottlenecks in the Cleanup Process

Although DoD continues to make progress in restoring contaminated sites, the rate at which we are able to move sites from investigation through cleanup is being delayed by 'bottlenecks' in the system. To remove these delays, DoD, EPA and DOE have formed Interagency "Experts Groups" that are actively exploring coordinated approaches for expediting required Federal facility site cleanups.

One key area where the Experts Groups are focusing attention involves innovation in the cleanup process. Current approaches for selecting remedial approaches discourage new and unproven technologies. Although this reduces the risk of failure, the development of faster or more cost-effective innovative techniques is stifled.



Restoration Progress at DoD NPL Installations as of September 30, 1991

An underlying difficulty associated with many system bottlenecks already identified results from approaches that emphasize the restoration **process** rather than its final objectives. Through the ongoing efforts of the Experts Groups, as well as other parallel interagency initiatives, we are developing workable solutions to solve these problems. We are committed to vigorously pursuing the challenges identified by the Experts Groups and, in the process, making the IRP as efficient and effective as is possible.

EPA and DoD Map the "Road to the ROD"

As an example of the interagency cooperation critical to expediting IRP progress, EPA Region III and DoD used the principles of Total Quality Management to examine the restoration process. We have jointly authored a guide that describes the most effective approaches for taking a site from the RI/FS through ROD signing. The document is intended for remedial project managers at DoD as well as EPA and state regulatory authorities. It is based on lessons learned in completing RODs at other NPL sites, and offers helpful insights into planning and executing the transition from investigation to cleanup, with special emphasis on ways to speed the process. The final document, titled "The Road to ROD," was published early in calendar year 1992.

Such efforts will help speed the pace of IRP progress by establishing a clear basis of requirements for the complicated interactions that must take place between DoD and regulatory agencies. The document also focuses on the importance of DoD/EPA teamwork in streamlining the decisionmaking process. Through their implementation, the approaches delineated in "The Road to ROD" will serve to build the interagency cooperation essential to the IRP's long term success.

Risk Sharing Will Help Ensure Adequate Contractor Support

The IRP relies heavily on the services of private contractors for site remediation work. Increasingly, the contracting community has expressed reservations about its willingness to undertake cleanup work for DoD because of the perceived financial risks involved. During FY 1991, the Department completed an extensive study of contractor liability and indemnification issues and reported to Congress on several areas where improvements are warranted.

At present, some remedial action contractors are unable to secure adequate insurance because the insurance industry is reluctant to become involved in work where the risks are uncertain and potentially large. In addition, contractors are hampered in obtaining performance bonds for DoD remediation work as required under the Miller Act. This situation poses potential problems for the continued future progress of the IRP.

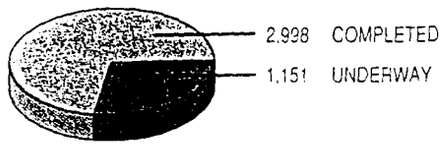
The Department is currently able to get adequate competition on our remedial contracts and has obtained quality remedial services to date. However, we are concerned that the current situation may lead to reduced competition by qualified contractors for future DoD remediation work, cost escalation, lower quality and increased risk to the public.

To help ensure that adequate remedial contractor support remains available, DoD is implementing changes in the areas within our control. These include improving our contracting strategies, reducing the amounts of bonds required, using rolling or phased bonds, allowing irrevocable letters of credit in lieu of bonds, and retaining Department control over certain elements of remedial work. We will continue to pursue these and other measures that provide for appropriate sharing of the risks involved in remediation work. Throughout these efforts, careful consideration will be given to the cost implications of various strategies as compared with the long-term liabilities to the government and its contractors.

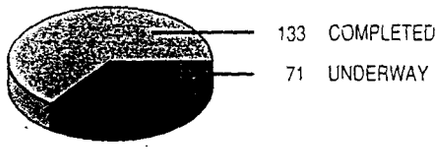
Formerly Used Defense Sites

The Secretary of the Army is the DoD Executive Agent for implementing DERP at Formerly Used Defense Sites (FUDS). As Executive Agent, the Army is responsible for environmental restoration activities under DERP on lands formerly owned or used by any DoD Component. The USACE is responsible for executing the FUDS program. Investigation and cleanup procedures at formerly used sites are similar to those at currently owned installations. However, information concerning the origin of the contamination, land transfer information, and current ownership must be evaluated before DoD considers a site eligible for restoration.

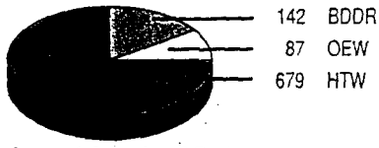
Status of Activities at Formerly Used Properties



PA Sites



SI Projects



Ongoing and Completed Projects

The additional funding allocated to the FUDS program in FY 1991 accelerated the progress of IRP activities. During FY 1991, over 630 PAs were completed and nearly 750 new PAs were initiated. The number of RI/FS projects underway increased from 29 to 63. New BDDR projects were initiated or completed for the first time since FY 1987.

A total of 6,786 FUDS with potential for inclusion in the program have been identified through inventory efforts. The number of FUDS decreased in FY 1991 because of improved tracking and the resulting deletion of site duplicates. By the end of FY 1991, PAs had been initiated at 4,149 sites. Of these, 1,151 were underway and 2,998 were complete. Based on the completed PAs, we have determined that 1,975 sites are eligible and 1,023 sites are ineligible for the FUDS program. Of the eligible sites, 897 require no further action. Each of the other 1,078 sites requires one or more remedial/removal projects. SIs had been completed for 133 projects and were underway for another 71 projects by the end of FY 1991.

DoD has already funded 9[illegible] projects for further investigation and remedial action. These activities include 679 projects addressing hazardous or toxic waste (HTW) contamination from formerly used underground storage fuel tanks, landfills, and leaking polychlorinated biphenyl (PCB) transformers. Also included are 87 projects for detection and removal of ordnance and explosive waste (OEW) from former target ranges or impact areas. Prior to FY 1988, 94 BDDR projects involving unsafe buildings or structures on formerly owned or used properties were completed. No BDDR projects were conducted between FY 1988 and FY 1990. In FY 1991, work at 48 BDDR sites was initiated and BDDR efforts at 15 other sites were completed.

USACE also represents DoD interests at NPL sites where former properties are located and whe[illegible] DoD may be a Potentially Resp[illegible]sible Party (PRP). Former prope[illegible]ties that have passed from DoD

control may have been contaminated by past DoD operations as well as by other owners, making DoD one of several PRPs. Ongoing USACE efforts will determine the allocation, if any, of DoD cleanup responsibility.

In FY 1990, 12 FUDs were listed on the NPL. One site, United Chrome Products, was deleted from DERP in early FY 1991 as a result of a determination that DoD was not responsible for the contamination of the site. As a result, 11 FUDS were listed on the NPL by the end of FY 1991. Ten of the sites are described in Appendix E. The eleventh site, West Virginia Ordnance Works, is a formerly owned site that is being remediated under the Army IRP and is described in Appendix B. All work for this site will be transitioned from the Army into the FUDS Program in FY 1992.

In FY 1991, $98.9 million was invested in IRP activities at former sites. The following are examples of work undertaken by USACE at formerly used properties last year. (Appendix E provides additional details for FUDS on the NPL.)

Rapid Response at the Commonwealth of VA Emergency Fuel Storage Facility, VA

In March 1991, officials from the Governor's office informed USACE of potential contamination at this site (previously part of Cheatham Annex). The site covers 435 acres and was owned and operated by the Navy. The USACE Rapid Response Team (RRT) immediately initiated a rapid response action in coordination with and approval of the Commonwealth of Virginia. The site contamination resulted from leaking underground storage tanks (USTs) and indiscriminate dumping of sludges and drums on site. The RRT excavated petroleum contaminated soil and removed 98 drums from the sludge pit. The sludge pit was lined, back-filled, graded and landscaped within four months.

Over 100,000 pieces of ordnance were recovered during the remedial actions conducted at the former Raritan Arsenal.

Removal Action at Sioux City, IA

In 1991, a removal action was conducted by USACE at the former 2,319-acre Sioux City Army Air Base in Sioux City, Iowa. Thirty-five USTs and fifteen leaking PCB transformers were removed to prevent contamination of soils and ground water at the site. Further, soil and ground water samples were collected and analyzed to determine if PCB contamination had occurred. Laboratory results show that no soil or ground water contamination exists.

Ordnance Removal at Former Raritan Arsenal, NJ

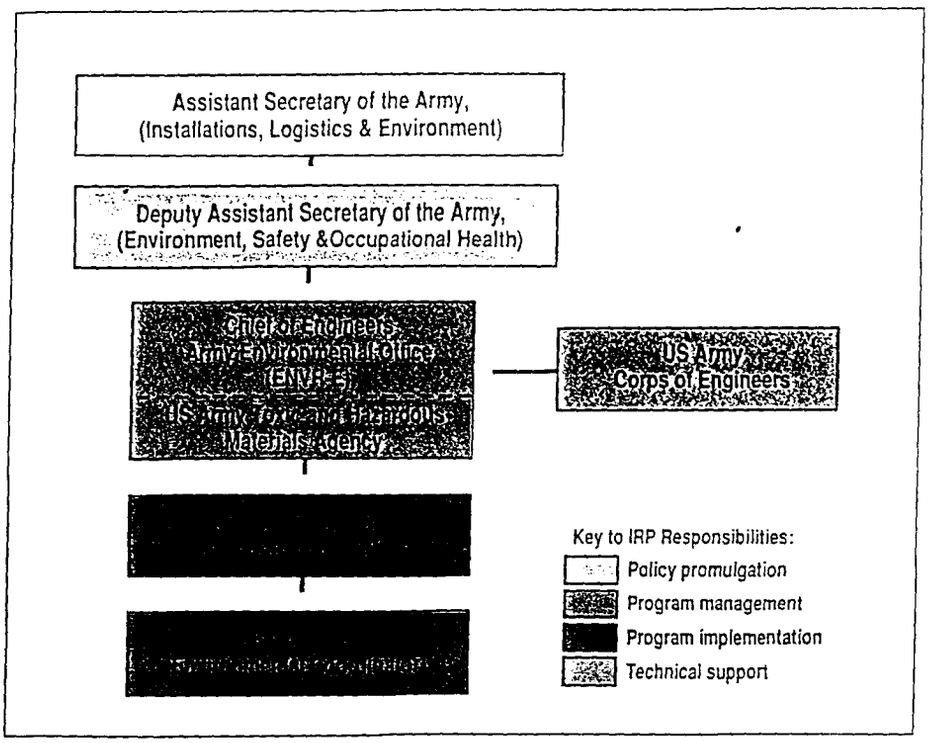
The former Raritan Arsenal in New Jersey, a 3,200-acre ordnance handling facility, was excessed by DoD in the early 1960s. An ordnance clearance operation was initiated in March 1991 to remove UXO from the site. Over 100,000 pieces of ordnance were recovered and detonated on-site. To minimize noise disturbances in surrounding urban and residential areas, detonation was conducted under optimum conditions that were determined through configuration tests using seismic and overpressure monitoring. Ordnance recovery operations are still underway and will continue until the cleanup is complete.

"Environmental ethics and values must not be an overlay. They must be 'bone deep,' part of our foundation ethic, part of our normal way of doing business."

Lt. Gen. H.J. Hatch
Chief of Engineers

Army IRP Progress

The number of sites included in the Army IRP increased from 10,459 in FY 1990, to 10,578 in FY 1991. IRP activities have been completed and no further remedial actions are planned at 5,054 sites, or almost one-half of the Army sites in the program.



Army IRP Organization

The Army's major accomplishments in FY 1991 include significant progress in its RI/FS work and remedial activities. During FY 1991, the number of sites where RI/FS work was completed increased from 301 to 355. The additional funding allocated to the Army was invested primarily in the implementation of remedial alternatives agreed to in RODs. For example, during FY 1991, several treatment systems began operating to remove contaminants from ground water at Army NPL installations.

By the end of FY 1991, PA work had been completed at all but 11 Army IRP sites. SI work had been completed at 4,330 sites, or 78 percent of the sites where it is known to be required.

In FY 1991, IAGs were signed covering six Army NPL installations, bringing the total number of Army NPL installations covered by IAGs to 29. RI/FS activities are underway or completed at all Army NPL facilities. Removal actions and IRAs have occurred at 31 of the 32 Army NPL facilities.

The following are examples of significant Army IRP project activities conducted in FY 1991. (Appendix B provides additional details f installations on the NPL.)

Ground Water Treatment System at Anniston Army Depot, AL

In 1991, an interim ROD was signed at Anniston Army Depot for the Ground Water Operable Unit. The ROD documents the ground water extraction and treatment system installed in 1990 prior to Anniston Army Depot's placement on the NPL. The system removes volatile organics through air strippers and phenolic compounds through charcoal filtration. It is treating an average of 100,000 gallons per day from major areas of contamination within the Southeast Industrial Area, which includ the Landfill Area, the Trench A and the Northeast Area.

Ground Water Remediation at Riverbank AAP, CA

To prevent the spread of ground water contamination, the Army has installed an interim ground water treatment system at Riverbank Army Ammunition Plant that captures and treats contaminated ground water. The system removes hexavalent chromium through a reduction and precipitation process and cyanide through an ion exchange process. The plant is currently operating 24 hours per day, treating ground water at a rate of 80 gallons per minute. Ground water with typical chromium and cyanide concentrations of 100 micrograms per liter and 250 micrograms per liter, respectively, is being treated to meet cleanup criteria of 20 micrograms per liter for each contaminant. The effluent has consistently shown no detectable traces of chromium and only very low concentrations of cyanide (2 to 5 micrograms per liter). This interim remedial action will be integrated into the final remediation activities at the installation.

"The Army Environmental Program is an excellent opportunity to demonstrate Army commitment to the world community."

Gordon R. Sullivan
Chief of Staff of the Army

Cleanups at Rocky Mountain Arsenal, CO

Significant accomplishments were achieved in 1991 at Rocky Mountain Arsenal. During the year, numerous IRAs were initiated or completed. For example, construction of a CERCLA Wastewater Treatment Facility was initiated during 1991. The CERCLA facility consists of a custom wastewater treatment system and a multiple-bay decontamination system.

The Basin A Neck Intercept and Treatment System was completed in the Fall of 1990. This treatment system can treat up to 30 gallons of contaminated ground water per minute. During FY 1991, the Northwest Boundary System Slurry Wall was extended to the northeast, and the Hydrazine Blending and Storage Facility was demolished because asbestos was present. Construction also was started on the Basin F Incinerator. The incinerator will be mechanically complete by the winter of 1992. Finally, a slurry wall and cap were constructed around a former disposal trench area.

The progress in cleanup activities at Rocky Mountain Arsenal is illustrated by approximately 90 percent decrease in ground water contaminant levels. This decrease has resulted from ongoing treatment operations.

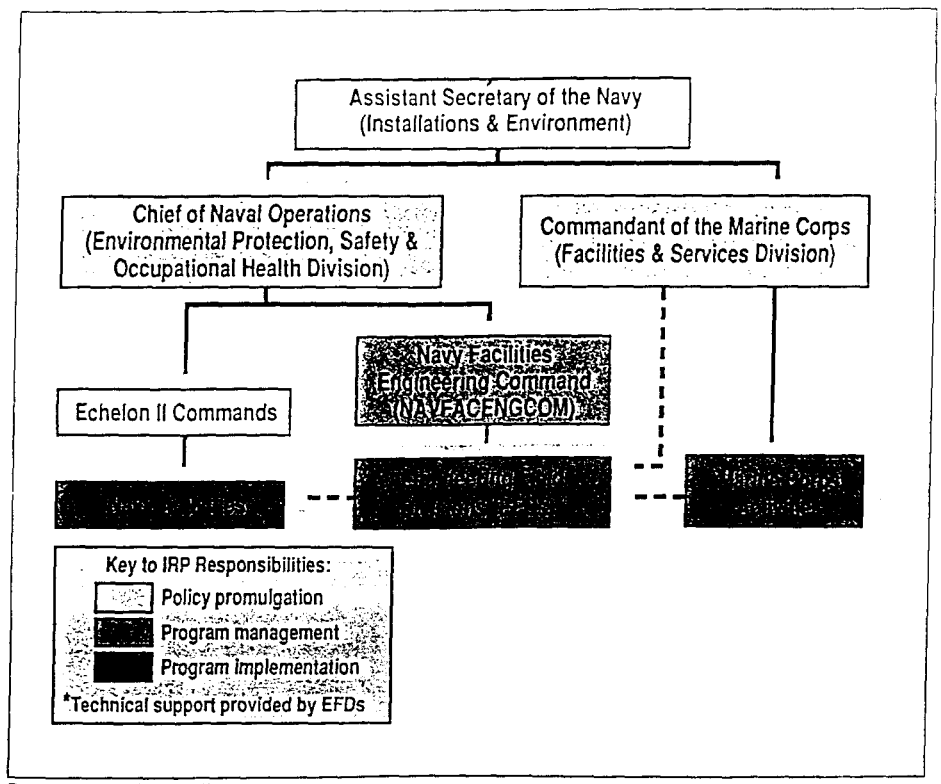
Ground Water Interim Action at Tobyhanna Army Depot, PA

In June 1991, the Army completed construction of a waterline extension from Tobyhanna Army Depot to 30 offpost residents affected by ground water contaminated with volatile organic compounds (VOCs). Approximately 8,000 feet of waterline was installed during the three-month effort. Waterline service will continue at no charge to the residents until the ground water is remediated to drinking water quality.

Principals involved in the extension of the Tobyhanna Army Depot water system prepare to turn on the valve symbolizing the start of water service.

Department of Navy IRP Progress

The most significant IRP growth among DoD components in FY 1991 occurred in the Department of Navy's program. The number of Navy and Marine Corps sites included in the IRP increased from 2,253 to 2,409. Progress in IRP activities has occurred mostly in RI/FS work which increased by 30 percent during FY 1991.



Department of Navy IRP Organization

The major Navy and Marine Corps accomplishments in FY 1991 include the initiation of new RI/FS work and continued progress in cleanup actions. Approximately 62 percent of the additional funding received in FY 1991 was invested in RI/FS activities, increasing the number of sites where RI/FS work was underway from 750 to 971. Other efforts were focused on completing IRAs/RAs at 29 sites. By the end of FY 1991, a total of 60 IRAs/RAs had been completed. PA completions at Department of Navy sites increased from 2,222 to 2,362 during FY 1991 and SI work was completed at 1,580 sites by the end of the fiscal year.

The Department of Navy signed ten IAGs covering NPL installations in FY 1991. This action brings the total number of Navy and Marine Corps NPL installations covered by IAGs to 18. RI/FS activities are underway or completed at all NPL facilities and removal actions and IRAs were completed or were ongoing at 22 of the 24 Department of Navy facilities final-listed or proposed for listing on the NPL.

The following are examples of significant Department of Navy IRP projects conducted in FY 1991. (Appendix B provides additional details for installations final-listed or proposed for listing on the NPL.)

I am committed to seeing that Navy commands at sea and ashore and around the globe continue these efforts, large and small, to preserve the environment for our own well-being and for future generations.

Admiral Frank B. Kelso, II
Chief of Naval Operations

Removal at MCCDC, Quantico, VA

Soil samples taken in 1988 at Marine Corps Combat Development Command (MCCDC), Quantico, Virginia, revealed PCB levels of up to 1,820 ppm. Based on the proximity of the contaminated sites to the Potomac River, MCCDC Quantico conducted a removal action to prevent contamination of the river by surface runoff.

In January 1991, the last shipment of approximately 3,881 tons of PCB contaminated soil was loaded into railcars and shipped to an EPA-approved hazardous waste landfill in Clive, Utah. The contaminated soil was removed from Sites 4 (Old Landfill) and 5 (Old Batch Plant) of the Marine Corps Combat Development Command in Quantico, Virginia.

Navy/State Agreement Signed at Naval Weapons Station, Seal Beach, CA

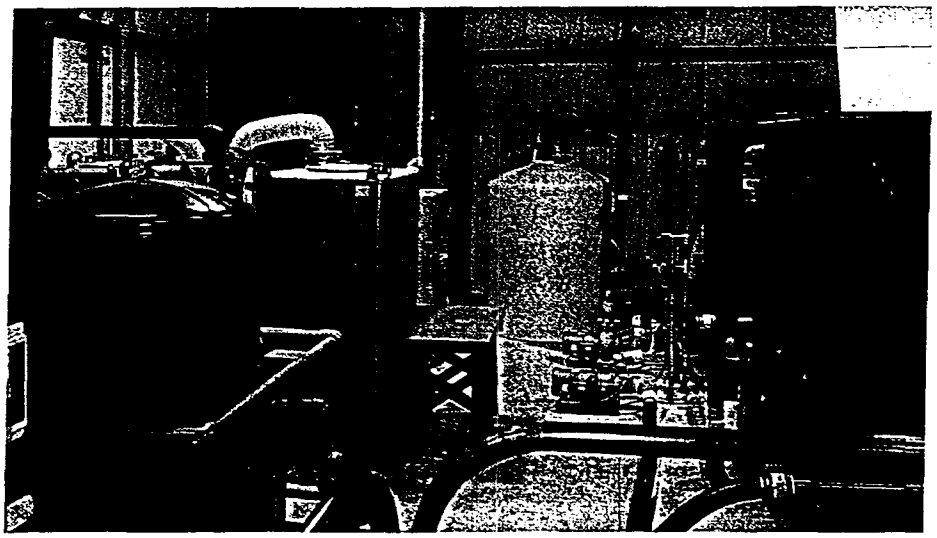
In September 1991, the Naval Weapons Station at Seal Beach, California signed a bilateral agreement with the State of California's EPA and the Santa Ana Regional Water Quality Control Board (RWQCB). The agreement allows the State to officially oversee the cleanup efforts under California law. It integrates the Navy's CERCLA response obligations with the Navy's RCRA corrective action obligations, State corrective/remedial action obligations, and obligations under other statutory requirements of the RWQCB. The signing of this agreement culminated over two years of negotiations. It is the first such agreement between a state and a Navy facility not on the NPL.

Lakehurst Naval Air Engineering Center, NJ

In 1991, the Navy and U.S. EPA signed interim RODs to remove fuels from ground water at four sites at the Naval Air Engineering Center, Lakehurst, New Jersey. Pump and treat systems are now operating at three sites and under construction at the fourth. Remediation contracts have been awarded or prepared for award for twelve other sites. In addition, over 100 cubic yards of PCB- and oil-contaminated soil was removed and replaced with clean fill by base personnel.

Cleanup at Pioneer Sand Company Superfund Site, FL

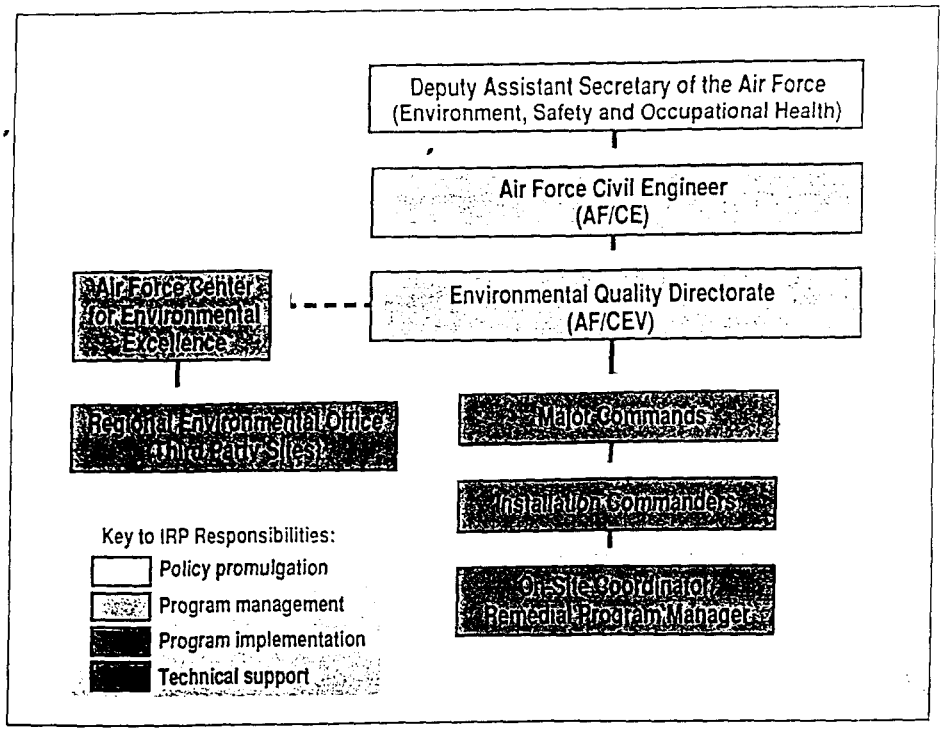
Construction for the cleanup work at the Pioneer Sand Company Superfund site in Pensacola, Florida was completed in 1991. The site, a former sand quarry, was used as an industrial waste disposal site by the Navy and Reichold Chemicals Co. during the 1970s. Wastes at the site include a significant quantity of auto shred material as well as metal sludges and organic liquids. The remedy selected for the site involves removal of water from a contaminated sludge pond followed by treatment of the water and solidification of the sludge. Elements of the cleanup include stabilizing approximately 7,500 cubic yards of sludge, constructing a 683-foot-long leachate collection trench, composite liner and grassy cover for the landfill, and the installation of ground water monitoring wells and a gas venting system.



A pump and treat system is used at Lakehurst Naval Air Engineering Center, New Jersey, for ground water remediation.

Air Force IRP Progress

An additional 16 Air Force installations were added to the IRP last year, bringing the total to 331. However, the number of sites at Air Force installations decreased slightly in FY 1991, to 4,354 sites, as a result of the review and consolidation of site counts. By the end of FY 1991, IRP activities were complete and no further remedial actions were planned at 834 Air Force sites.



Air Force IRP Organization

The Air Force's major accomplishments in FY 1991 included increasing the number of closed-out sites and registering significant progress in RI/FS and RD/RA work. In past years, limited funding has restricted the Air Force to addressing only contamination at NPL installations and a few non-NPL installations. The additional funding received in FY 1991 allowed the Air Force to expand the assessment of potential contamination to all Air Force installations.

The number of closed-out sites increased from 448 to 834 in FY 1991. The number of sites at which RI/FS is complete increased from 557 to 1,053 in FY 1991. By the end of the year, RD work had been performed at 230 sites while 150 RA activities had been completed at Air Force sites.

During FY 1991, the Air Force completed and signed IAGs for eight NPL installations. This brought the total number of Air Force NPL installations with signed IAGs to 27. RI/FS activities are underway or complete at all of these facilities. Removal actions and IRAs have occurred at 30 of the 3[illegible] Air Force NPL facilities.

The following are examples of significant Air Force IRP project activities conducted in FY 1991. (Appendix B provides additional details for installations on the NPL.)

Expedited Actions at Pease AFB, NH

At Pease AFB, New Hampshire, an NPL-listed installation included on the closure list, an accelerated program was undertaken to investigate the contamination around three existing buildings. Sources of contamination were removed, including a 15,000-gallon tank and two oil/water separators. In addition, all 36-inch drains in one building were pressure-flushed and sealed with sand and concrete. A total of 300 soil samples were taken and 45 ground water wells were drilled and

sampled to further characterize contamination at the site. A treatment system was installed with 100 well-points. This is a dual phase (vapor-liquid) system designed to treat TCE in both phases. All these actions, namely an RI and a treatability study, were initiated in April 1991 and are scheduled for completion in January 1992.

> ***"Despite steady improvements in environmental protection, the Air Force must do more, now. We must move past the study stage into the action phases–training, prevention, and cleanup."***
>
> **General Merrill A. McPeak**
> **USAF, Chief of Staff**

Response Actions at McClellan AFB, CA

The Air Force is undertaking several removal actions to control ground water and soil contamination at McClellan AFB. Three extraction wells are pumping ground water at a total rate of 270 gallons per minute. The water is filtered at an on-base treatment facility through activated carbon to remove volatile organic compounds. The filtered water is then discharged into the base's Industrial Wastewater Line for further treatment at the Industrial Wastewater Treatment Plant. During FY 1991, approximately 135 million gallons of ground water were treated. In addition, ground water continues to be pumped from a water supply well that services the base at a rate of 700 gallons per minute. The water is treated with activated carbon before distribution. Further, a total of 45 underground storage tanks, some of which were leaking, and the surrounding contaminated soils were removed and disposed of properly.

Panero Removal Action at March AFB, CA

The Panero aircraft fuel hydrant system was built in 1952 and had been the primary fueling system at March AFB. This extensive system consisted of thirty-four 50,000-gallon underground storage tanks, 10 control pits which governed 20 hydrant refueling pits, a vapor recovery unit with a 550-gallon underground concrete tank, a 25,000-gallon defueling tank, and associated piping, pumps and fuel/water separators.

Several removal action activities were conducted in FY 1991. The 36 tanks, three control pits and associated refueling hydrants, and the vapor recovery unit were removed and disposed of properly. The associated fuel distribution lines were emptied of fuel, filled with inert material and closed in place. Low temperature thermal oxidation was used to treat approximately 3,000 cubic yards of contaminated soil. This process is expected to treat the remaining 11,600 cubic yards.

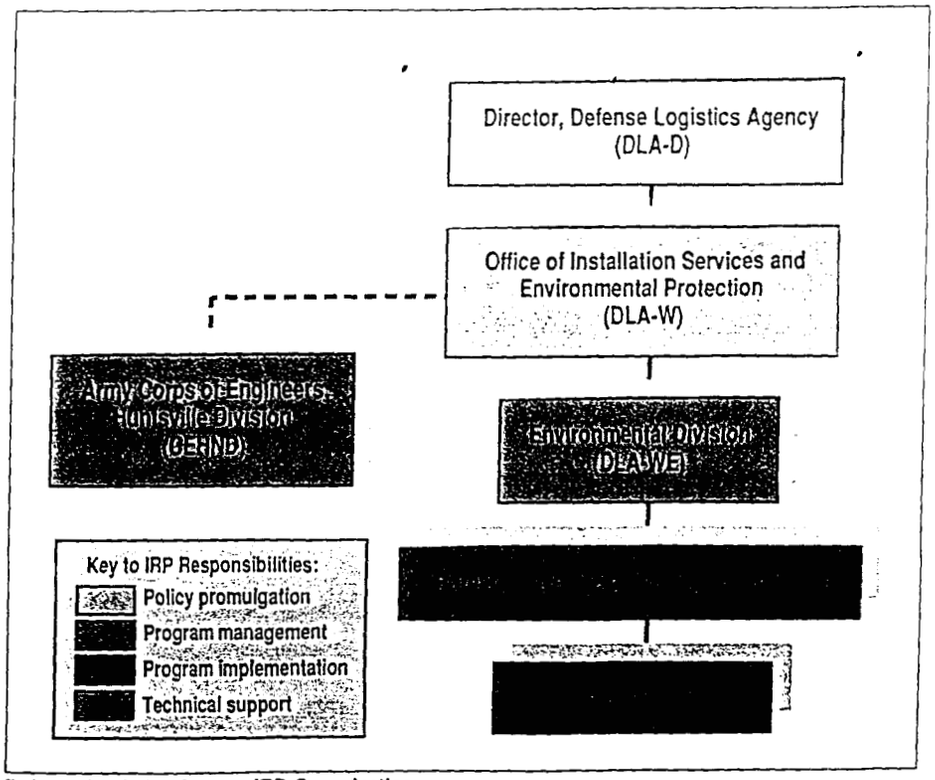
Cleanup Activities at Tinker AFB, OK

At Tinker AFB, the main engine repair facility (Building 3001) sits atop a major drinking-water aquifer for the area. Past industrial practices have contaminated zones of the aquifer with solvents and heavy metals. The remedial design of a ground water cleanup system to remove the contamination plume and prevent further migration of contaminants into ground water aquifers was completed in FY 1991. Removal actions conducted in FY 1991 included the recovery of 300 gallons of floating product from the perched aquifer and the removal of 24,592 gallons of residual heating oil from a 235,000-gallon underground storage tank.

Extensive tank excavation activities at March AFB were conducted for the Panero RA project.

Defense Logistics Agency IRP Progress

The Defense Logistics Agency (DLA) IRP continued to show steady progress in all areas in FY 1991. The number of installations and sites in DLA's program increased slightly in FY 1991, to 319 sites at 34 installations. IRP activities have been completed and no further remedial action is planned at 127 sites.



Defense Logistics Agency IRP Organization

The increased funding received in FY 1991 by DLA was invested primarily in RI/FS and IRA work. As a result, the number of sites at which RI/FS work has been completed or is underway increased from 147 to 210 last year. This represents 98 percent of the total number of sites targeted for an RI/FS. All four DLA NPL sites had an IRA complete or underway by the end of FY 1991. Further, PA/SI work has been completed at all of DLA's 319 sites. RA completions at DLA sites increased from 3 to 16 in FY 1991.

In FY 1991, IAGs were signed covering two DLA installations: Defense General Supply Center Richmond and the Tracy Site, Defense Distribution Region West (DDRW). PA/SI work has been completed and RI/FS activities are underway at all four of the DLA installations final-listed on the NPL. In addition, removal actions and IRAs have occurred at all of DLA's NPL facilities.

In July of FY 1990, the Sharpe Army Depot (AD) was transferred from the Army to DLA, making Sharpe Site the fourth DLA installation listed on the NPL. The Sharpe Site (DDRW) is included in the DLA program counts presented in this report.

The following are examples of significant DLA IRP project activities conducted in FY 1991. (Appendix B provides additional details for installations on the NPL.)

Ground Water Cleanup Started at DFSP Charleston, SC

Studies conducted at Defense Fuel Support Point (DFSP) Charleston, South Carolina during 1987-88 discovered a plume of hydrocarbon contamination extending off of the site and under neighboring residential property. A ground water cleanup system was installed in FY 1991 that provides the best attainable cleanup levels, the least amount of disturbance to private property owners, and operates continuously with low maintenance. The system employs a combination of ground water withdrawal, treatment, biological remediation, and a monitoring program to determine cleanup effectiveness.

Transfer of Sharpe Site, DDRW, CA

The Sharpe Site, DDRW, was transferred from the Army to DLA during 1991. DLA continued to operate two ground water extraction and treatment plants at Sharpe in FY 1991. Treated water is sold to a nearby power plant for steam generation. The RI report for Sharpe was approved by all regulatory agencies in FY 1991. The FS and ROD for ground water have been placed on an accelerated schedule. Signature of the ground water ROD is expected in FY 1992. Treatability studies of in-situ volatilization (ISV) were conducted in FY 1991. ISV appears to be an economical way of removing large quantities of volatile contaminants from contaminated soils at Sharpe.

"I am committed to an aggressive environmental protection program throughout the agency."

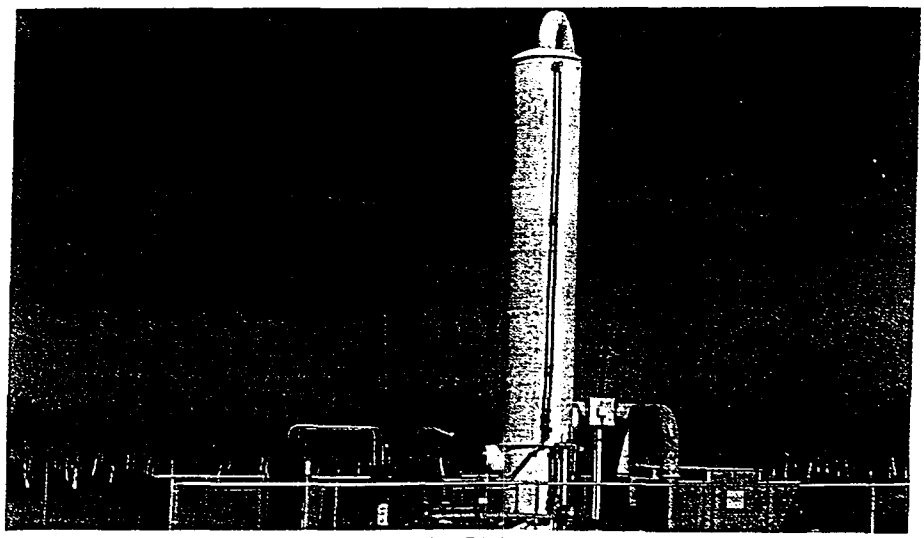
Lieutenant General Charles McCausland (USAF)
Director, Defense Logistics Agency

Ground Water Cleanup at Tracy Site, DDRW, CA

Remedial actions were conducted at the Tracy Site, DDRW, during the third quarter of FY 1991. An air stripping and carbon adsorption system to remove contaminants from the ground water was installed and began operation on October 4, 1991. The system is capable of treating 500 gallons per minute of water with a maximum influent contaminant level of 500 parts per billion (ppb) of trichloroethylene (TCE) and perchloroethylene (PCE) to an effluent level of 1 ppb TCE/PCE. The system captures all volatilized TCE/PCE, with a net result of zero contaminants released to the environment. The California Regional Water Quality Control Board and the California Department of Toxic Substances Control have praised DDRW Tracy for voluntarily expediting cleanup efforts at the site.

Installation of Site Remediation System at DFSP Newington, NH

The Defense Fuel Support Point (DFSP) in Newington, New Hampshire completed installation of a remediation system for soil and ground water contamination during the fall of 1991. Ground water is extracted and sent through an oil/water separator where free fuel is recovered. Ground water is then further treated with liquid phase activated carbon prior to discharge. Discharge water meets EPA drinking water standards. The soil vapors extracted through vacuum extraction wells will be discharged to the atmosphere, provided hydrocarbon vapor concentrations do not exceed 350 ppm at an air flow rate of 250 cfm.



The pump and treat water system at Tracy site, DDRW is used to remove contaminants from the ground water.

Other Hazardous Waste Program Progress

The Other Hazardous Waste (OHW) Program, the second element of DERP, examines current operations to find cost-effective approaches to DoD's waste management activities and to prevent pollution at the point of generation. Funds are invested to promote DoD's Total Quality Management of hazardous waste initiatives. Such efforts include research, development, and demonstration of pollution prevention and hazardous waste management technology. This work involves studies of UXO detection and range clearance methods; investigation of alternate products (substitution), revised specifications, and improved acquisition and operating practices; procurement of hazardous waste reduction equipment; information exchange; and other environmental restoration and pollution prevention activities.

In FY 1991, $56.4 million in DERP funds were invested for hazardous waste minimization projects. This increased funding has enabled the Department to make more progress towards meeting its goal of reducing hazardous waste disposal by 50 percent between 1987 and 1992. Between 1987 and 1990, the Department achieved a 40 percent reduction in hazardous waste disposal rates. This reduction resulted from a variety of projects conducted at almost every DoD installation. The Department is fully committed to reducing hazardous waste disposal and anticipates meeting the 50 percent reduction goal by the end of 1992.

The Department's waste minimization effort is expanding to meet the requirements of the Pollution Prevention Act of 1990. To make significant long-term changes in hazardous material usage, basic changes are being made at the beginning of our processes, the actual design of weapon systems.

We are incorporating environmental considerations, including life-cycle hazardous material management, into the weapon systems acquisition process by revising our acquisition policies. The use and management of hazardous materials now must be justified before a decision is made to proceed with any major weapon system.

Many military specifications and standards remain that unnecessarily require the use of hazardous materials. We have begun the process of reviewing these specifications and standards to eliminate or reduce the use of hazardous materials, thereby reducing the environmental requirements at the installation level. In 1992, more attention will be directed towards material substitution. Notable examples of OHW Program accomplishments follow.

Chlorinated Solvents Substitution

The Army is eliminating chlorinated solvents from many degreasing operations. At Stratford Army Engine Plant in Connecticut, vapor degreasers have been substituted with water jet spray booths. In this process, parts are cleaned with high-pressure washers and degreased with detergents. Water is recirculated in the washer system for further use and eventually treated at an industrial wastewater treatment plant. Further, under the Depot System Command's Centers for Technical Excellence (CTX) program, glove-box spray washers will replace solvent dip tanks used for various small parts. These techniques will provide significant benefits, including elimination of hazardous waste and reduction health and environmental risks.

DoD Hawaii HAZMIN Project

The Hawaii Hazardous Waste Minimization (HAZMIN) Project is a joint DOD component initiative managed by the Navy. Under this project, efforts have been developed and implemented to reduce hazardous waste generation rates and off-island disposal needs for military operations in the State.

The initial phase of the project identified near-term recommendations at 21 Army, Navy, Air Force, Marine Corps, DLA, and National Guard installations. These near-term measures, defined as activities that could reasonably be implemented within one year, are being pursued and are expected to achieve savings of almost $500,000 per year when fully implemented. The second phase of the project identified long-term recommendations at 16 of the 21 installations. These long-term recommendations, defined as activities that require more than one year for implementation, are estimated to reduce DoD's waste generation rates by up to 29 percent once implemented. Avoided future disposal costs of over $6 million could result from implementation of these long-term recommendations.

Molten metal coating is used at DoD-Hawaii installations in painting operations to reduce hazardous waste.

Naval Supply Systems Role in HAZMIN

During 1991, the Naval Supply Systems Command implemented a comprehensive Hazardous Materials Control & Management (HMC&M) Program. This program will ensure effective control and management of hazardous material on a life-cycle basis to minimize hazardous waste generation throughout the Navy. The ultimate goal is to use the least possible amount of hazardous material (HM) to do the job and, for HMs that are still required, to control and manage them on a life-cycle basis to ensure the lowest cost is incurred to protect human health and the environment.

In addition, the Navy has established a Navy HMC&M Committee, and respective working groups to act as catalysts for HMC&M information exchange and planning among the Fleet and the Navy System Commands.

Cadmium Replacement

The DLA has conducted a study of specifications and standards that require cadmium for corrosion protection. The study was intended to evaluate alternative coatings and identify changes to the coating process to eliminate or reduce hazardous waste. DLA has identified six specifications and standards where less toxic substances have been substituted for cadmium. Remaining specifications and standards are being reviewed for substitution applicability. During 1991, specification QQ-P-416 Cadmium Plating (electrodeposited) was revised to include a list of suitable substitutes to cadmium plating. Revision of another five specifications for cadmium elimination also were initiated. Further, DLA began an engineering study to identify the extent and usage of cadmium plating on electrical connectors. The study involves surveying the connector industry to identify the particular products that use cadmium plating, and identify any available alternatives.

Review and Revision of Degreasing and Depreserving Solvent Specifications

During 1991, DLA conducted a study to identify alternatives for the Degreasing and Depreserving Solvent (MIL-C-11090E) used to remove corrosion resistant coatings and oils from parts. The Defense General Supply Center successfully field-tested a less flammable and less toxic substitute. The revised specification published in FY 1991, is expected to save $200,000 annually in procurement and disposal costs.

Robotic Water Jet Machine

In March 1991, The Oklahoma City Air Logistics Center installed a robotic, high pressure water jet cleaning system to remove old sealants and deposits from jet engines. The system removes sealants faster than alternative methods, uses less water than an ordinary garden hose, and produces no hazardous waste by eliminating the use of hazardous solvents.

The system blasts away sealant at 20,000 pounds per square inch, (psi) and uses only 20 gallons of water per minute. Washing water is filtered and reused. The water jet, which operates under a double-walled stainless steel cabinet, is fed by hoses with safety burst ratings of 30,000 psi and fittings with ratings of 45,000 psi.

Research, Development, and Demonstration

Traditional approaches to hazardous waste site cleanup may not be permanent or cost-effective solutions. These approaches can require large capital outlays and operating costs merely to move the problem from one location to another. DoD is working to identify and develop permanent cleanup technologies and efficient and cost-effective waste site investigation techniques. In addition, significant effort is being focused on the development and testing of methods to reduce the generation of hazardous wastes at DoD facilities. While these efforts require large financial commitments upfront, the potential future cost savings are enormous.

In FY 91, DoD invested approximately $5 million of Environmental Restoration Account funds in Research, Development, and Demonstration (RD&D) of cleanup technologies and hazardous waste minimization.

An Installation Restoration Technology Coordinating Group (IRTCG) consisting of representatives from each component coordinates RD&D efforts. The IRTCG encourages improved communication among the components to ensure the most effective possible use of limited RD&D funds. In addition, a DoD/EPA/DOE working group established in 1985 addresses the cost of hazardous waste cleanups, evaluates innovative technology needs, and develops a coordinated approach to these efforts.

The following examples of recent RD&D projects demonstrate the progress made by DoD and illustrate the potential benefits of well-directed research.

In-Situ Monitoring

The Terratrog instrument was developed for use in *in-situ* monitoring to detect contaminants present at hazardous waste sites. The instrument uses fluorescent light transmitted through a fiber-optic cable. Sensors placed at the end of cable can detect metals and trichloroethylene (TCE). The system was tested at Phoenix Military Reservation, Maryland and, in conjunction with the Ion Trap Mass Spectrometer, at DOE's Savannah River site. The Terratrog successfully detected low parts per million levels of TCE, with instrument readout times of less than two minutes.

Ordnance Remediation–White Rot Fungus Patent

A patent has been filed on behalf of the Naval Civil Engineering Laboratory for a bioremediation process that uses white rot fungus to biologically degrade trinitrotoluene (TNT) in liquid or solid waste to carbon dioxide. Bioremediation utilizing the fungus can result in 75–90% cost savings over incineration, the only other method of treatment now available. Studies have demonstrated that, over 90 days, approximately 85 percent of TNT in water at 100 mg/liter and in soil at 10,000 mg/Kg were degraded.

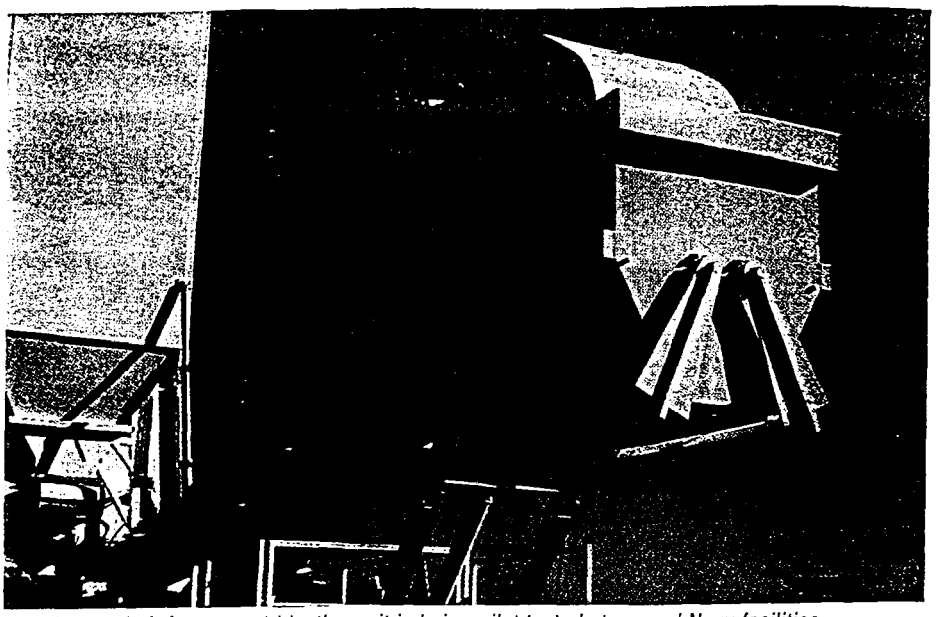
Ordnance waste disposal has been identified as a major waste category requiring RD&D for effective treatment and cleanup of contaminated Navy sites. The Navy identified 26 ordnance waste disposal sites requiring cleanup.

Spent Sandblast Grit Recycling

The Naval Civil Engineering Laboratory (NCEL) has been working with the California Environmental Protection Agency (Cal–EPA) Alternative Technology Division to develop processes to use spent blasting grit in the production of asphalt pavement. This recycling technology is currently being pilot-tested at Naval Construction Battalion Center (NCBC), Port Hueneme; Naval Station Treasure Island, Hunters Point Annex; and Mare Island Naval Shipyard.

The spent blasting grit is mixed with aggregate and hot asphalt to form test pellets. Although the grits are often contaminated with lead, copper or tributyl tin up to hazardous levels, these contaminants are immobilized in the asphaltic mixture, and leaching does not occur. The product must meet strict California strength requirements and environmental criteria.

Currently, the Navy generates an estimated 10,000 tons of spent grits annually. Disposal costs for these grits range from $200/ton to $500/ton. Recycling the grits into asphaltic concrete reduces disposal costs by 90 percent. Anticipated annual cost savings are $1.8 million to $4.5 million.



Creating asphalt from spent blasting grit is being pilot tested at several Navy facilities.

Steam Injection/ Vapor Extraction Treatment

The Air Force is testing the Steam Injection and Vapor Extraction (SIVE) process to remove contaminants from soil and ground water at McClellan AFB. This innovative technology involves injecting steam into the soil and ground water to vaporize the volatile and semi-volatile organic contaminants, which are then extracted through vapor and condensate wells. The removed liquids and vapors are treated at the base's ground water treatment plant. The application of SIVE allows treatment of the contamination at its source and prevents further leaching of soil contaminants into the ground water.

Significant benefits are associated with the use of SIVE. Soil contamination can be treated in place without using traditionally expensive excavation/incineration treatment approaches. Soil treatment with SIVE is expected to cost approximately $125 per cubic yard, compared to $425 per cubic yard for on-site incineration. Unlike soil vapor extraction, the SIVE process removes both volatile and semi-volatile contaminants and can be applied below the water level to remove residual soil contamination.

Electrodialysis for Chromic Acid Recovery and Reuse

The Army has conducted a demonstration test at Corpus Christi Army Depot to evaluate the feasibility of using electrodialysis to extend the use of spent chromic acid solutions. Chromic acid solutions are commonly used for chromium electroplating and for the application or removal of chromate conversion coatings. Electrodialysis can reduce waste generation by allowing the reclamation and reuse of the chromic acid baths.

> *"Environmental stewardship is a high-tech business, and it requires great ingenuity and insight. Science and technology gives us tools for cleaning up our environment and keeping it clean. They help us identify our problems precisely, and develop efficient solutions."*
>
> **President George Bush**

Training of DoD Personnel in DERP Activities

The Defense Environmental Restoration Program requires a team effort to complete effectively its varied and complicated tasks. This is especially true in the IRP portion of the program. DoD has implemented training programs so that personnel can effectively manage various aspects of the cleanup process. During FY 1991, over 2,000 DoD personnel received DERP-related training. The following are examples of courses of instruction provided in FY 1991.

Risk/Health Assessment Training

The Air Force presented a course on EPA risk assessment methodology, Agency for Toxic Substance and Disease Registry (ATSDR) health assessments methodology, and risk communication for IRP personnel. The pilot course, held in September 1991, was attended by 60 command representatives. The course provides the basic knowledge of risk and health assessments required to manage and plan remedial responses and facilitate ATSDR health assessments conducted at IRP sites. The first of 12 course offerings throughout the country was held in November, 1991. Over 400 bioenvironmental engineers, occupational health physicians, military public health officials, lawyers, public affairs representatives and other specialists are expected to attend the courses during FY 1992.

DLA Professional Development Seminar

DLA's Directorate of Installation Services and Environmental Protection sponsored a three-day seminar in August 1991 in Richmond, Virginia. The seminar included several sessions on the IRP. Designed for key environmental restoration program managers at DLA primary level field activities, these working sessions focused on managing the Defense Environmental Restoration Account, the Defense Priority Model for ranking sites entering the cleanup phase, and status reports on the progress at DLA installations listed on the NPL. One particularly well-received session dealt with the progress and difficulties with DLA's Third-Party Site Program.

Navy Installation Restoration Program Health and Safety Courses

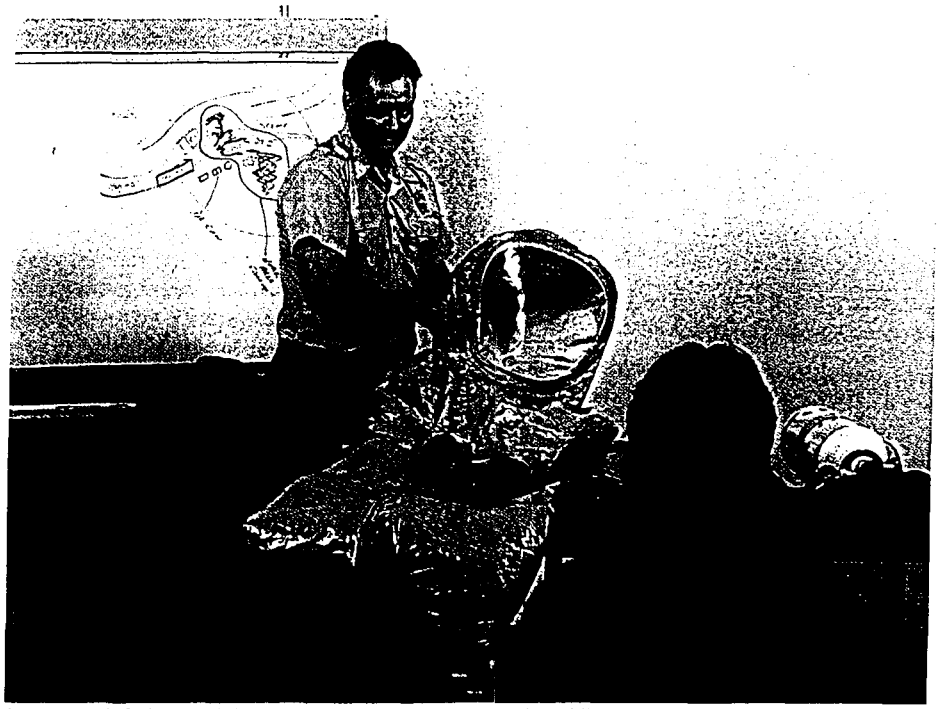
The Navy has developed a series of courses designed to meet the requirements of the Occupational Safety and Health Act (OSHA) for hazardous waste site workers and supervisors. The courses are tailored to the Navy's IRP. Remedial project managers, activity environmental coordinators, and others responsible for the progress of actions at DERP sites are intended participants. The courses include hands-on field experience where students learn, among other things, toxicology, hazard recognition and abatement, decontamination procedures, and the selection and use of personal protective equipment. Nearly 600 people attended the courses during FY 1991.

Air Force Environmental Leadership Course for Senior Leaders

During FY 1991, over 300 senior Air Force staff participated in the Environmental Leadership Course. This course provides senior leaders with the knowledge and skills to communicate and instill an environmental ethic throughout their commands. Further, it spells out national programs and policies, outlines the IRP, and describes budgets and processes to clean up IRP sites. The goal is top-to-bottom knowledge that will spark a commitment to action. The course is designed for senior leaders (e.g., general officers, installation commanders). Senior officials, such as the Deputy Assistant Secretary of the Air Force (Environment, Safety and Occupational Health) are the instructors. This course has been successfully given to several commands throughout the Air Force.

Safety and Health for Hazardous Waste Sites

In July 1991, DLA sponsored a special 40-hour CERCLA site safety and health course for 30 key environmental personnel. This course fulfills OSHA requirements and helps assure the safety and health of personnel at hazardous waste sites. The course specifically addressed CERCLA sites (NPL and non-NPL sites) and RCRA sites where investigations or cleanup operations are underway. Similar health and safety training is provided by all of the military services for their key personnel.



Health and Safety training provides our personnel with skills necessary to effectively manage restoration activities.

DPM Training

Almost 200 Army, Navy, Air Force and DLA staff learned to use DPM during FY 1991. This training qualified staff to score sites according to the risk posed to human health and the environment. Additional training was also provided in operating the automated version of the system for 71 personnel. Using DPM, the DoD components develop a risk-based rank ordering of all sites where RA work is scheduled. In the event of constrained funding, the DPM scores will prove to be a valuable tool in assuring that our worst sites are cleaned up first.

DERP Negotiation Training

In 1991, legal and environmental personnel from the Air Force, Army, and the Marines participated in the DERP Negotiation Training sponsored by DoD. The training, offered in four sessions of approximately 20 hours each, was designed for DoD personnel involved in negotiations between federal and state environmental officials for the cleanup of hazardous waste sites. Session activities included exercises and simulations of negotiation disputes typically encountered by DoD personnel. A total of 96 individuals participated in the training. The evaluations given by attendees regarding the sessions rated "very good" to "excellent."

Center for Environmental Restoration Education for Air Force Personnel

The Center for Environmental Restoration Education (CERE) was officially opened at the Air Force Institute of Technology (AFIT) School of Engineering and Services on January 1, 1991. AFIT, through the CERE program, is ensuring all Air Force personnel involved in the Installation Restoration Program (IRP) receive the vital technical and management education required to perform their critical duties. Potential students are not limited to civil engineers. Legal, public affairs, bioenvironmental engineers and contracting personnel are all eligible to attend. Since its opening, 134 Air Force personnel have taken advantage of CERE.

IRP Training of Air Force Personnel

The IRP course at AFIT has continued to provide valuable training in the IRP process. In FY 1991, this course provided an overview on Air Force policy and management guidance, hydrogeology, community and regulatory relationships, federal facility agreements and cleanup case histories to more than 200 Air Force personnel. This course is offered four times a year. Over 300 engineers, public affairs personnel, lawyers and bioenvironmental engineers will be trained in FY 1992.

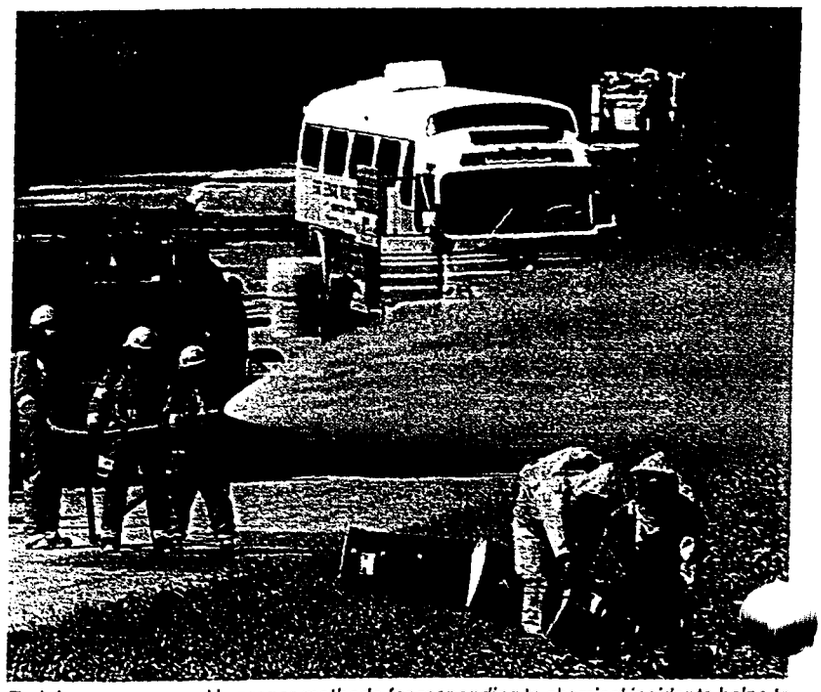
Community Relations Training

During 1991, the Navy developed and sponsored the Installation Restoration Community and Media Relations training. The training was offered to restoration program managers, Public Affairs Officers, and individuals at installations who are involved with the community relations/public participation activities that occur between the end of the RI/FS and the beginning of the actual cleanup. The training focused on providing individuals with the skills they need to comply with the requirements under CERCLA Section 117 on public meeting and public comment. The course was offered on each coast and approximately 60 people were trained during FY 1991.

USACE DERP Training

The Directorate of Corps of Engineers Training Management located at the Huntsville Division of the USACE has provided DERP training to Army and Corps personnel involved with the Army IRP and the FUDS program. In FY 1991, the Corps trained over 1,000 individuals and held over 50 course sessions. The courses were designed primarily to meet the unique hazardous/toxic waste (HTW) training requirements encountered in DERP and to meet specific requirements mandated by Congress in SARA.

The courses were taught by experts in the environmental field. They included USACE Hazardous/Toxic Waste Overview, Safety and Health for Hazardous Waste Sites, and Implementation of HTW Environmental Laws and Regulations on USACE projects.



Training our personnel in proper methods for responding to chemical incidents helps to protect human health and the environment at and around Defense facilities.

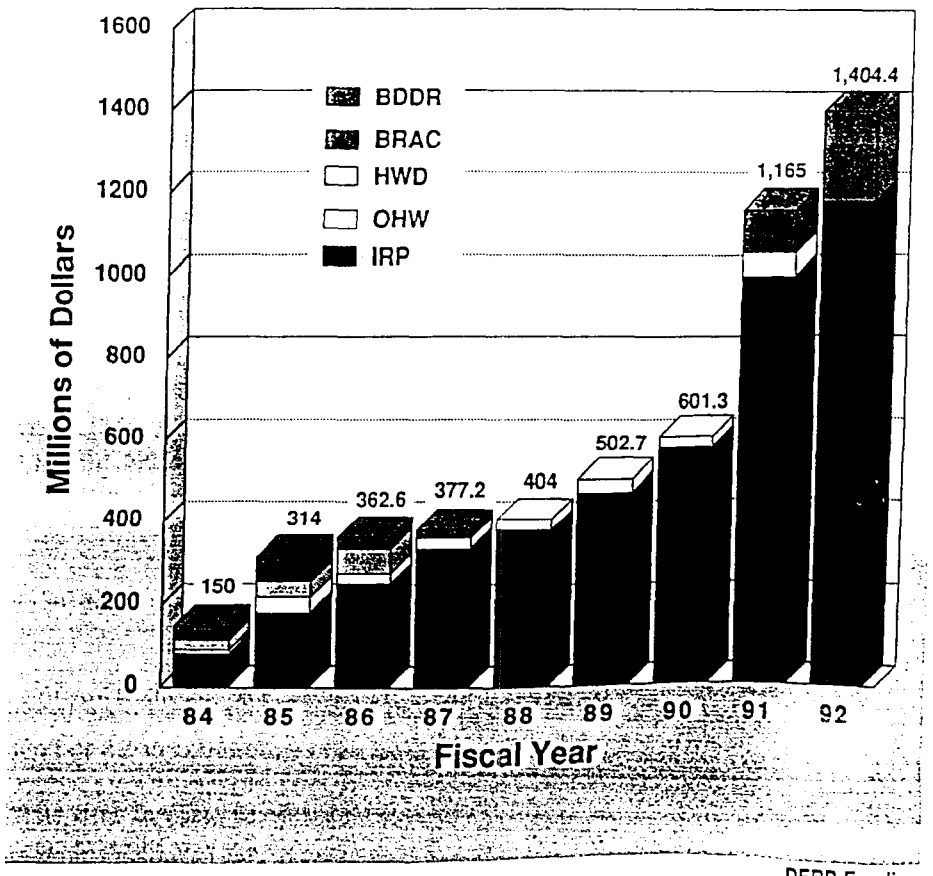
Program Funding

In FY 1984, Congress consolidated and expanded DoD programs to clean up hazardous waste in a separate appropriation entitled the Defense Environmental Restoration Account (DERA), under the Defense Appropriations Act. This has allowed the Department to accelerate its efforts and add research and other components to DERP. More than 87 percent of DERA funds have been allocated to the IRP since FY 1984. In FY 1991, 94 percent was invested in the IRP portion of the program. This heavy emphasis is expected to continue in FY 1992 because of the growth in these high-priority requirements. The FY 1992 DoD Authorization Act provides $1.4 billion for environmental restoration activities. This includes $220 million authorized under the Base Closure Account.

The Department has estimated the total cost of future DoD IRP activities at installations and formerly used properties at $24.5 billion beginning in FY 1991. This represents the estimated funding requirements in FY 1991 dollars needed to completely investigate and remediate all IRP sites now identified.

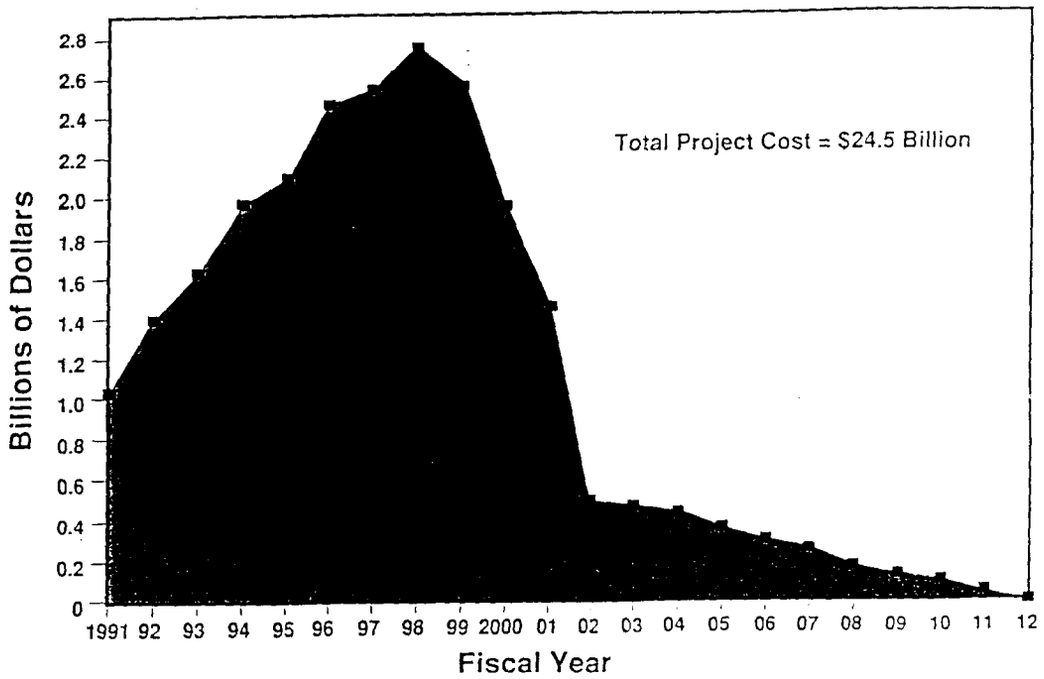
Most funding is for the more costly RD/RA cleanup phase of the program. It also includes costs for completion of all program phases, from PA through RA, as well as operation and maintenance (O&M) of remedial systems through the next 20 years. This estimate also includes projected outlays for third-party sites, RD&D, program administration and reimbursement to states under DSMOA. Our current total cost estimate does not include contingencies for such factors as changing regulations.

Estimated future IRP costs were developed from currently available information on site cleanup requirements. They include projections for sites where extensive data collection



DERP Funding

Projected IRP Rate of Expenditure



Note: These figures do not reflect budget estimates.

is still underway. Once this work is complete, a better definition of the sites actually requiring cleanup will be possible. Cleanup standards also remain uncertain. Some agreements for remedial action at NPL installations have not been reached with EPA and state agencies.

Of interest for long-term program planning is the rate of expenditures required to support the IRP. Therefore, once the cost estimate was determined, IRP costs were plotted as a function of time. The graph shown above is a hypothetical plot of the cost of the IRP over the next 20 years. The figures provided do not reflect budget estimates. Rather, they are estimates of resource requirements based on the general assumptions used in determining our future costs. These numbers are not derived with the level of detail necessary to form the overall outyear budgets.

The rate-of-expenditure curve was developed using the following assumptions:

- Future inflation was not considered;
- The duration of the remainder of the program is about 20 years (1991-2011);
- In any one year, funds are available to cover requirements;
- All PA/SIs are completed by 1992;
- All RI/FSs are underway by 1993;
- All RI/FSs are completed by 1996;
- All RD/RAs are underway by 2000;
- RDs and RAs each have a duration of one year and costs are incurred the year of execution.

The rate at which resources are expended over the 20 years is not linear because each site is already in the remedial pipeline and will continue to proceed toward closure. DoD's negotiations with regulatory agencies and the complexity of the site all contribute to the length of each cleanup phase. As an average, however, the PA and SI take one year each, the RI/FS takes four years, and the RD and RA take one year each. As a result, the curve has a maximum annual expenditure rate of $2.7 billion in FY 1998 and then decreases.

DoD will review the total program cost estimate periodically as the program matures and more information becomes available.

Appendix A
Information Requested by the Superfund Amendments and Reauthorization Act

This Appendix to the Annual Report provides information requested in Section 120(e)(5) of the Superfund Amendments and Reauthorization Act of 1986 (SARA), which applies to all Federal Facilities, and Section 211 of SARA (codified at 10 USC 2706), which pertains to the Defense Environmental Restoration Program.

Federal Facilities Reporting Requirements

Section 120(e)(5) of the SARA legislation specifies that each Federal department or agency shall annually report on the following items:

- A report on the progress in reaching interagency agreements.
- The specific cost estimates and budgetary proposals involved in each interagency agreement.
- A brief summary of the public comments regarding each proposed interagency agreement.
- A description of the instances in which no agreement was reached.
- A report on progress in conducting investigations and studies under Paragraph (1). [Paragraph (1) discusses the timing of RI/FS work at NPL sites].
- A report on progress in conducting remedial actions.
- A report on progress in conducting remedial actions at facilities which are not listed on the National Priorities List.

In addition, SARA specifies "With respect to instances in which no agreement was reached within the required time period, the department, agency, or instrumentality filing the report under this paragraph shall include in such report an explanation of the reasons why no agreement was reached. The annual report required by this paragraph shall also contain a detailed description on a State-by-State basis of the status of each facility subject to this section, including a description of the hazard presented by each facility, plans and schedules for initiating and completing response action, enforcement status (where appropriate), and an explanation of any postponements or failure to complete response action. Such reports shall also be submitted to the affected States."

Appendix B contains a description of each installation final-listed or proposed for listing on the NPL. Each description summarizes the background of the installation, including the types of environmental hazards present, the status of IAG negotiations, the status of IRP response actions, and schedules for initiating and completing those response actions. The information in Appendix B addresses the requirements of the preceding paragraph. Appendix E describes formerly used defense sites (FUDS) that are listed and proposed for listing on the NPL. Appendix B, Table B-1, catalogs DoD facilities that are final-listed and proposed for listing on the NPL and

Appendix E, Table E-1, catalogs FUDS that are final-listed on the NPL. The following paragraphs provide detailed responses to the SARA information requirements.

Progress in Reaching Interagency Agreements

During FY 1991, efforts to complete IAGs in compliance with SARA, Section 120 were accelerated through diligent work by the components. These IAGs continue to receive a high priority because they establish comprehensive installation-specific arrangements for proceeding with DoD's waste cleanup activities. DoD's goal is to have an agreement in place for all installations final-listed or proposed for listing on the NPL. Extensive field negotiations took place in FY 1991 with EPA and state authorities. As a result, a firm foundation for the agreement process has been built allowing DoD components to enter into consistent, workable agreements nationwide.

The signing of IAGs for 26 installations listed on the NPL in FY 1991 brought the total number of signed IAGs to 77. The installations with finalized agreements are shown in Table A-1. West Virginia Ordnance Works and Weldon Spring Former Ordnance Works also are included on the table because they have been funded as active Army installations. The large increase in signed agreements can be attributed to the extensive model language agreement and guidance developed in FY 1988, coupled with an all-out effort by the components to negotiate agreements. In FY 1991, the DoD components continued to hold workshops for their field personnel on the IAG model language and other aspects of negotiating IAGs.

Interagency Agreement Cost Estimates and Budgetary Proposals

DERP funding is discussed in the body of this report. The estimate for total program funding is based on existing budget documentation, including program cost data from the individual DoD component IRPs, and consideration of existing Superfund cost data. Table A-1 lists the installations with signed IAGs along with the estimated expenditures to-date and the estimated additional cost to implement each IAG. Total IRP costs associated with signed IAGs is $7.94 billion. These costs include past IRP costs along with future budgetary estimates for continued investigation and cleanup of the sites at installations where an IAG has been finalized.

Additional details of past expenditures at all DoD NPL installations are shown in Appendix B, Table B-1. That table includes additional funding data for IRAs, RAs, and RI/FSs.

Public Comments Regarding Proposed Interagency Agreements

As of September 30, 1991, public comments had been received on two of the 26 IAGs completed in FY 1991. These comments are summarized below.

Fort Devens, Massachusetts

Comments were received from the Massachusetts Department of Environmental Protection concerned the State's involvement in schedules, ROD selection, RCRA/CERCLA integration, DPM and funding of work, and site definition. As a result of these comments, nine revisions were made to the IAG.

Table A-1
Installations Covered by Signed IAGs as of September 30, 1991

Location	Through FY 1991 $(K)	Estimated Additional Cost to Implement IAG $(K)
ARMY		
Aberdeen PG, MD (2)*	42,555	715,334
Alabama AAP, AL**	19,387	14,278
Anniston AD, AL	12,376	20,550
ARDEC (Picatinny Arsenal), NJ	18,413	59,341
Cornhusker AAP, NE	16,430	38,795
Fort Devens, MA	5,283	33,079
Fort Devens, Sudbury Annex, MA	3,759	6,290
Fort Dix, NJ	3,774	26,700
Fort Lewis, WA (2)*	11,174	58,990
Fort Ord, CA	14,121	28,262
Fort Riley, KS	4,102	19,020
Iowa AAP, IA	6,840	17,950
Joliet AAP, IL (2)*	11,630	29,415
Lake City AAP, MO	27,664	26,712
Letterkenney AD, PA (2)*	16,932	47,355
Lone Star AAP, TX	4,394	10,253
Louisiana AAP, LA	38,190	43,486
Milan AAP, TN	6,870	68,749
Riverbank AAP, CA	10,766	24,139
Rocky Mountain Arsenal, CO	414,685	1,637,148
Sacramento AD, CA	25,494	49,925
Savanna ADA, IL	13,513	24,710
Schofield Barracks, HI	1,005	4,600
Tobyhanna AD, PA	4,994	37,152
Tooele AD, UT	24,260	42,206
Twin Cities AAP, MN	33,275	66,728
Umatilla AD, OR	14,054	24,095
Weldon Spring Former Army Ordnance Works, MO**	26,192	173,808

*Both NPL listings for this installation are covered under one IAG.
**The dollars listed include money spent at Weldon Spring Quarry/Plant/Pits (DOE/Army), a third party site.

Table A-1
Installations Covered by Signed IAGs as of September 30, 1991

Location	Through FY 1991 $(K)	Estimated Additional Cost to Implement IAG $(K)
ARMY (Continued)		
West Virginia Ordnance, WV***	17,621	7,141
Army Total	**849,753**	**3,356,211**
DEPARTMENT OF NAVY		
Bangor NSB, WA (2)*	14,860	30,000
Barstow MCLB, CA	14,150	184,000
Brunswick NAS, ME	3,790	10,000
Camp Lejeune MCB, NC	5,870	50,300
Camp Pendleton MCB, CA	6,670	208,000
Cecil Field NAS, FL	2,760	42,700
El Toro MCAS, CA	2,880	329,000
Jacksonville NAS, FL	3,960	61,500
MCLB Albany, GA	2,530	64,000
Moffett NAS, CA	33,210	54,900
NADC Warminister, PA	940	4,400
NAEC Lakehurst, NJ	10,400	13,000
NAS Whidbey Island, WA (2)	14,840	60,000
NIROP Fridley, MN	6,070	8,500
NUWES Keyport, WA	8,830	20,000
Naval Weapons Station Earle, Site A, NJ	1,820	31,000
Pensacola NAS, FL	10,150	63,900
Treasure Island NS – Hunters Point, CA	31,800	84,300
Department of Navy Total	**175,530**	**1,319,500**
AIR FORCE		
AFP #4 (General Dynamics), TX	14,700	32,370
Castle AFB, CA	29,594	86,464
Dover AFB, DE	8,967	20,910
Edwards AFB, CA	41,000	49,500
Eielson AFB, AK	16,500	10,000
Fairchild AFB (4 Waste Areas), WA	19,976	59,100

***A former site, not listed as a federal facility, but funded as a federal facility.

Table A-1
Installations Covered by Signed IAGs as of September 30, 1991

Location	Through FY 1991 $(K)	Estimated Additional Cost to Implement IAG $(K)
AIR FORCE (Continued)		
F.E. Warren AFB, WY	11,278	55,000
George AFB, CA	13,237	60,000
Griffiss AFB, NY	37,078	37,600
Hill AFB, UT	22,627	400,000
Homestead AFB, FL	4,650	16,000
Loring AFB, ME	41,951	282,552
Luke AFB, AZ	9,000	1,500
March AFB, CA	26,158	120,000
Mather AFB, CA	33,860	143,890
McChord AFB, WA (2)*	15,417	21,100
McClellan AFB, CA	72,783	1,580,000
Norton AFB, CA	18,600	64,400
Otis ANGB, MA	29,000	96,000
Pease AFB, NH	35,832	90,800
Plattsburgh AFB, NY	20,828	66,000
Robins AFB (Landfill #4/Sludge Lagoon), GA	18,900	25,130
Tinker AFB (Soldier Creek/Building 3001), OK	43,700	39,500
Travis AFB, CA	10,190	38,000
Twin Cities AFRB (Small Arms Range Landfill), MN	2,900	2,500
Williams AFB, AZ	11,600	35,834
Wright-Patterson AFB, OH	68,896	395,982
Air Force Total	**679,222**	**1,452,285**
DEFENSE LOGISTICS AGENCY		
Defense General Supply Center Richmond, VA	6,426	8,444
Ogden Defense Depot, UT	7,322	26,268
Sharpe Site, DDRW, CA	14,372	8,201
Tracy Site, DDRW, CA	9,510	29,406
DLA Total	**37,630**	**72,319**
DoD TOTAL	**1,742,135**	**6,200,315**

El Toro Marine Corps Air Station, Santa Ana, California

Comments were received from the City of Irvine concerning the pre-ROD IAG between the Department of Navy, EPA, and the State of California. The City expressed concern that mitigative action be taken as soon as possible to protect ground water resources and the drinking water supply of Santa Ana and prevent further migration of the TCE contamination. The City also requested reimbursement for project construction and operations costs incurred by the City and the Orange County Water District. In addition, since the City of Irvine and the Orange County Water District were not parties to the pre-ROD IAG, a request for a separate agreement between the responsible party, the District, and the City was made.

Instances Where No Agreement Was Reached

There are no instances where DoD has failed to reach an agreement within the required time period.

Remedial Investigation/Feasibility Study (RI/FS) Progress

Section 120(e)(1) of SARA specifies that RI/FS work must be initiated at sites within six months of listing on the NPL. RI/FS work has been started at all 90 DoD installations final-listed or proposed for listing on the NPL. RI/FS start dates are shown in the Installation Narratives in Appendix B.

Remedial Action Progress

Section 120(e)(2) of SARA requires that on-site remedial action must be initiated within 15 months of completion of an RI/FS and the issuance of a ROD at an NPL facility. At the end of FY 1991, RD/RA efforts were underway at all four DoD NPL installations for which RODs had been completed 15 months earlier or more. These were: West Virginia Ordnance Works, Tinker AFB, Ogden Defense Depot, and Fort Lewis. In FY 1991, final RODs were signed at eight installations including two Army, two Navy, and four Air Force installations. DoD anticipates beginning final RA activities at all eight of these installations within the required time period.

During FY 1991, response actions have been undertaken at 86 DoD installations with sites on the NPL. This work involves several types of Removal Actions and/or IRAs. These actions are summarized in Table A-2. Additional information on RD/RA initiatives at DoD NPL installations is provided in the narratives in Appendix B.

Remedial Actions at Non-NPL Facilities

Remedial actions have been initiated at 1,070 DoD sites (including sites at NPL installations). These include Removal Actions, IRAs and long-term monitoring. Of these, 372 had been completed by the end of FY 1991.

Table A-2
Summary of NPL Installation Activities

Type of Activity	Number of Activities
Alternate Water Supply/Treatment	33
Incineration	7
Site Treatment/Remediation	101
Decontamination	23
Waste Removal	121
Ground Water Treatment	63
Long-term Monitoring	52
TOTAL	400

Note: Some installations have more than one type of action underway.

Defense Environmental Restoration Program Reporting Requirements

Section 211 of SARA (10 USC 2706) specifies that the Annual Report to Congress shall include:

"(1) A statement for each installation under the jurisdiction of the Secretary of the number of individual facilities at which a hazardous substance has been identified."

"(2) The status of response actions contemplated or undertaken at each such facility."

"(3) The specific cost estimates and budgetary proposals involving response actions contemplated or undertaken at each such facility."

"(4) A report on progress on conducting response actions at facilities other than facilities on the National Priorities List."

Appendix C summarizes the information requested in items 1, 2, and 4 above. It denotes the number of sites undergoing each step of the IRP at any one installation. The response to item 3 above is found in the Program Funding section of this report.

Appendix C, Table C-1 provides a detailed listing of IRP status for each installation in the program. For each IRP phase listed in Table C-2, four status categories exist: "C," "U," "F," or "CO." Category "C" represents the total number of sites for which that particular study or action has been completed. The "U" category denotes the number of sites having that particular study or action underway. The "F" category shows the number of sites scheduled to have that study/action performed in the future. "CO" indicates that the site is closed-out because no further action was recommended for the site at the completion of the particular IRP phase.

Facilities Having Identified Hazardous Substances

The universe of sites at DoD installations in the IRP is summarized on page 7 of this report and explained further in Appendix C. Referring to these tables, a PA is a Preliminary Assessment of an installation to determine if a site may pose hazards to public health or the environment, and may require further study. An SI is a Site Inspection of an installation, which follows a PA and consists of limited sampling and analysis to determine the existence of actual site contamination. The information collected in the SI is used to score the site with the HRS to determine whether a site should be placed on the NPL. The RI/FS involves quantitative sampling and analysis to identify those sites that are contaminated, the types of contaminants present and their levels, and whether the contamination is causing or contributing to any ground or surface water pollution. RD is an engineering phase following the ROD in which technical drawings and specifications are developed for the subsequent remedial action at a site. RA is the actual construction or implementation phase that follows the design of the selected cleanup alternative for a site.

Confirmation about which of the 17,665 potential sites are actually contaminated and are presenting a health or environmental risk requires completion of an RI. Because RIs are still underway at many sites, the absolute number of sites with hazardous substances cannot be determined. A minimum can be calculated by assuming that all sites with RD/RA scheduled, underway at this time or completed have been confirmed as having identified hazardous waste that may present a risk. The present estimate of confirmed hazardous waste sites in DoD is 4,012, the sum of RA work completed, underway, or planned for the future as provided on page 7.

Status of Current or Contemplated/Undertaken Response Actions

The number of response actions undertaken at any one installation is indicated by the sum of the numbers in the "C" and "U" categories of each response action type listed in the table in Appendix C. Similarly, the "F" category under each type of response action indicates the number of contemplated (future) response actions for each installation.

Table C-2 shows that 372 cleanups (i.e., removals, interim responses, and remedial actions) have been completed. This includes 146 Army, 60 Navy, 150 Air Force, and 16 DLA actions at IRP sites. In addition, there are 698 site actions underway with 2,942 scheduled for the future.

Response Action Cost Estimates and Budgetary Proposals

In FY 1991, the Congress appropriated $1.165 million for the DERP, of which $1.004 million was spent on the IRP. These funds were used primarily to expand and accelerate studies and remedial actions at more than 17,600 individual sites. The Program Funding section of this report provides additional funding information.

Response Action Progress at Non-NPL Facilities

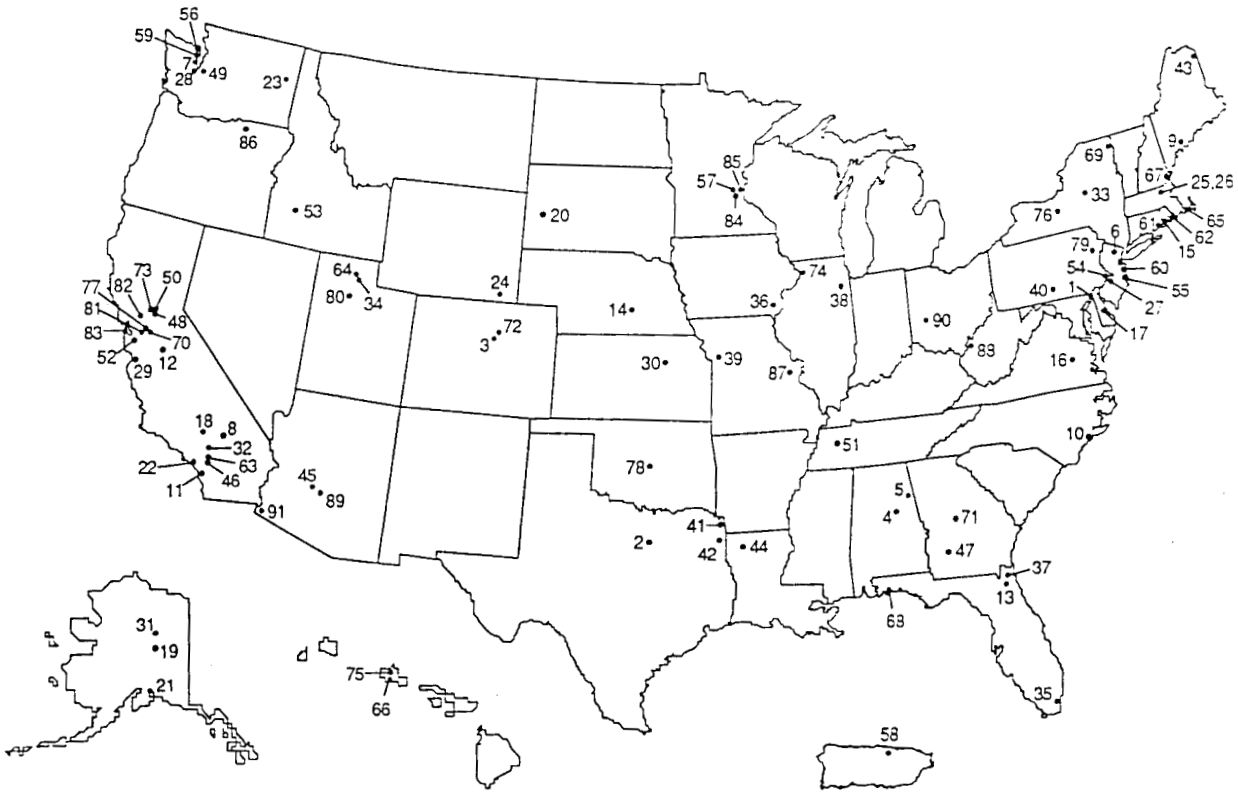
DoD has continued to make progress during FY 1991 in investigating all sites or facilities on DoD installations potentially contaminated with hazardous substances and cleaning up those sites that pose a threat to human health and the environment, regardless of whether they are on the NPL. A total of 17,660 sites on 1,877 military installations are currently included in the IRP. Of the total number of sites, 3,738 are sites associated with facilities listed on the NPL. Facilities not listed on the NPL have a total of 13,922 sites in various stages of the IRP. RAs are ongoing at 240 sites on non-NPL facilities.

Appendix B provides data regarding IRP response actions at DoD facilities on the NPL. The listing in Appendix C, in addition to providing additional information on NPL sites, provides the status of work at non-NPL facilities.

Appendix B
DoD NPL Installations

This Appendix to the Annual Report summarizes information for each DoD installation listed and proposed for listing on the NPL as of the end of FY 1991. Table B-1 provides key data for the facilities listed on the NPL. Narrative summaries for each DoD installation listed on the NPL begins on page B-8.

As of September 30, 1991, 89 DoD installations were listed and one (Pearl Harbor Naval Complex) proposed for listing on the NPL. Two separate areas of seven of these 89 installations are listed twice on the NPL, bringing the total number of DoD NPL listings to 96. In addition, West Virginia Ordnance Works, a former DoD-owned facility, has been included in this Appendix because the Army is remediating the facility as if it were an active Army site.



Location of DoD Installations on the NPL
(Narratives beginning on page B-8 are keyed to map numbers)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action: Year (Latest)	Removal Action/Interim Remedial Action: $(K) Thru FY 91	RI/FS: $(K) Thru FY 91	IAG: Status	IAG: Signing Year
ARMY							
Aberdeen PG (Edgewood Area)	MD	53.57	91	15,662	18,015	FIN	90
Aberdeen PG (Michaelsville Landfill)	MD	31.09	—	0	893	FIN	90
Alabama AAP	AL	36.83	91	8,443	10,944	FIN	90
Anniston AD (Southeast Industrial Area)	AL	51.91	91	1,201	8,671	FIN	90
ARDEC (Picatinny Arsenal)	NJ	42.92	91	6,385	7,551	FIN	91
Cornhusker AAP	NE	51.13	88	10,865	5,565	FIN	90
Fort Devens	MA	42.24	—	0	5,283	FIN	91
Fort Devens Sudbury Training Annex	MA	35.57	—	0	3,759	FIN	91
Fort Dix (Landfill Site)	NJ	37.40	91	1,497	2,277	FIN	91
Fort Lewis (Landfill No. 5)	WA	33.79	—	0	4,024	FIN	90
Fort Lewis Logistics Center	WA	35.48	91	2,188	1,190	FIN	90
Fort Ord	CA	42.24	90	1,223	8,924	FIN	90
Fort Riley	KS	33.79	90	775	3,327	FIN	90
Fort Wainwright	AK	42.40	91	550	6,317	IN	92(e)
Iowa AAP	IA	29.73	90	1,934	4,906	FIN	90
Joliet AAP (LAP Area)	IL	35.23	—	0	3,423	FIN	89
Joliet AAP (Mfg Area)	IL	32.08	85	1,496	1,503	FIN	89
Lake City AAP (Northwest Lagoon)	MO	33.62	90	12,628	14,734	FIN	89
Letterkenny AD (PDO Area)	PA	37.51	91	340	2,789	FIN	89

FIN = Finalized (signed) • IN = Initiated • NYI = Not yet initiated • (e) = Expected

(Continued)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 91	RI/FS $(K) Thru FY 91	IAG Status	IAG Signing Year
ARMY (Continued)							
Letterkenny AD (Southeast Area)	PA	34.21	91	1,953	10,497	FIN	89
Lone Star AAP	TX	31.85	91	440	3,954	FIN	90
Longhorn AAP	TX	39.83	—	0	1,578	IN	92 (e)
Louisiana AAP	LA	30.26	90	33,924	4,266	FIN	89
Milan AAP	TN	58.15	84	966	5,904	FIN	89
Riverbank AAP	CA	63.94	91	4,702	6,063	FIN	90
Rocky Mountain Arsenal	CO	58.15	91	273,111	92,832	FIN	89
Sacramento AAP	CA	44.46	91	17,358	8,136	FIN	88
Savanna ADA	IL	42.20	91	8,609	4,867	FIN	89
Schofield Barracks	HI	28.90	—	0	1,005	FIN	91
Seneca AD	NY	35.52	89	957	2,585	IN	92(e)
Tobyhanna AD	PA	37.93	91	1,625	3,293	FIN	90
Tooele AD (North Area)	UT	53.95	91	8,431	15,829	FIN	91
Twin Cities AAP*	MN	59.16	91	11,312	21,963	FIN	87
Umatilla DA (Lagoons)	OR	31.31	90	0	13,036	FIN	89
Weldon Spring**	MO	58.60	90	15,210	10,982	FIN	90
West VA Ordnance Works***	WV	35.72	91	15,883	1,738	FIN	89

(Continued)

*Listed as New Brighton/Arden Hills, not as a federal facility.
**Army funding of the chemical plant and active portion of the Ordnance Works.
***A former site, not listed as a federal facility, but funded by the Army.

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 91	RI/FS $(K) Thru FY 91	IAG Status	IAG Signing Year
DEPARTMENT OF NAVY							
Bangor NSB	WA	55.91	91	240	14,420	FIN	90
Bangor Ordnance Disposal	WA	30.42	91	included above		FIN	90
Barstow MCLB	CA	37.93	91	1,400	10,680	FIN	91
Brunswick NAS	ME	43.38	—	0	3,520	FIN	89
Camp Lejeune MCB	NC	33.13	90	1,390	2,590	FIN	91.
Camp Pendleton MCB	CA	33.79	86	7	740	FIN	91
Cecil Field NAS	FL	31.99	—	—	1,660	FIN	91
Davisville Naval CB Center	RI	34.52	91	340	1,310	IN	92(e)
El Toro MCAS	CA	40.83	—	—	1,510	FIN	91
Jacksonville NAS	FL	32.08	85	1,890	1,010	FIN	91
MCLB Albany	GA	44.65	91	1,290	320	FIN	91
Moffett NAS	CA	24.49	90	2,730	30,070	FIN	89
NADC Warminster (8 Waste Areas)	PA	57.93	90	70	800	FIN	90
NAEC Lakehurst	NJ	50.53	91	4,590	4,990	FIN	89
NAS Whidbey Island (Ault Field)	WA	47.58	91	180	11,610	FIN	90
NAS Whidbey Island (Seaplane Base)	WA	39.64	91	included above		FIN	90
NIROP Fridley	MN	30.83	91	3,520	2,550	FIN	91

(Continued)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action: Year (Latest)	Removal Action/Interim Remedial Action: $(K) Thru FY 91	RI/FS $(K) Thru FY 91	IAG: Status	IAG: Signing Year
DEPARTMENT OF NAVY (Continued)							
NSG Sabana Seca	PR	34.28	88	10	1,120	IN	92(e)
NUWES (4 Waste Areas) Keyport	WA	32.61	—	—	8,240	FIN	90
Naval Weapons Station Earle (Site A)	NJ	37.21	—	50	1,180	FIN	91
New London SB	CT	36.53	91	530	2,000	IN	92 (e)
Newport NETC	RI	32.25	91	20	2,100	IN	92 (e)
Pearl Harbor Naval Complex	HI	70.82	91	5,600	1,740	NYI	—
Pensacola NAS	FL	42.40	91	3,540	4,340	FIN	91
Treasure Island NS - Hunters Point Annex	CA	48.77	90	3,140	27,720	FIN	90
Yuma MCAS	AZ	32.24	—	—	340	IN	92 (e)
AIR FORCE							
AFP #4 (General Dynamics)	TX	39.92	86	4,630	7,315	FIN	90
AFP PJKS	CO	42.93	91	5,645	1,731	IN	92(e)
Castle AFB	CA	37.93	91	11,777	16,198	FIN	89
Dover AFB	DE	35.89	88	760	6,425	FIN	89
Edwards AFB	CA	33.62	91	6,778	26,689	FIN	90
Eielson AFB	AK	48.14	91	4,334	9,643	FIN	91
Ellsworth AFB	SD	33.62	91	16,890	4,655	IN	92(e)
Elmendorf AFB	AK	45.91	91	5,843	7,622	IN	92(e)

(Continued)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 91	RI/FS $(K) Thru FY 91	IAG Status	IAG Signing Year
AIR FORCE (Continued)							
Fairchild AFB (4 Waste Areas)	WA	31.98	90	7,439	11,777	FIN	90
F.E. Warren AFB	WY	39.23	90	7,180	3,483	FIN	91
George AFB	CA	33.62	91	8,203	4,167	FIN	90
Griffiss AFB	NY	34.20	91	10,478	26,097	FIN	90
Hill AFB	UT	49.94	91	4,404	16,480	FIN	91
Homestead AFB	FL	42.40	90	1,003	3,456	FIN	91
Loring AFB	ME	34.49	91	25,032	16,491	FIN	91
Luke AFB	AZ	37.93	90	1,617	5,716	FIN	90
March AFB	CA	31.94	91	16,687	8,826	FIN	90
Mather AFB	CA	28.90	91	4,980	28,416	FIN	89
McChord AFB (Wash Rack/ Treatment Area)	WA	42.24	88	2,789	11,524	FIN	89
McChord (American Lake Garden Tract)	WA	31.94	88	included above		FIN	90
McClellan AFB	CA	57.93	91	30,328	41,018	FIN	90
Mountain Home AFB	ID	57.80	88	200	2,866	IN	92(e)
Norton AFB	CA	39.65	90	4,284	12,261	FIN	89
Otis ANG Base/ Camp Edwards	MA	45.92	91	3,424	25,449	FIN	91
Pease AFB	NH	39.42	91	10,162	24,815	FIN	90
Plattsburgh AFB	NY	30.34	91	10,693	9,573	FIN	91

(Continued)

Table B-1
DoD Installations Proposed for or Listed on the National Priorities List (NPL)

Installation	State	HRS Score	Removal Action/Interim Remedial Action Year (Latest)	Removal Action/Interim Remedial Action $(K) Thru FY 91	RI/FS $(K) Thru FY 91	IAG Status	IAG Signing Year
AIR FORCE (Continued)							
Robins AFB (Landfill #4/Sludge Lagoon)	GA	51.66	91	4,436	10,918	FIN	89
Tinker AFB (Soldier Creek/Building 3001)	OK	42.24	91	23,894	16,654	FIN	88
Travis AFB	CA	29.49	91	1,860	7,270	FIN	90
Twin Cities AFRB (Small Arms Range Landfill)	MN	33.62	91	437	1,531	FIN	89
Williams AFB	AZ	37.93	91	6,132	4,078	FIN	90
Wright-Patterson AFB	OH	57.85	91	8,543	56,110	FIN	91
DEFENSE LOGISTICS AGENCY							
Defense General Supply Center Richmond	VA	33.85	85	150	5,524	FIN	90
Ogden Defense Depot	UT	45.10	88	646	4,028	FIN	89
Sharpe Site, DDRW	CA	42.24	91	4,074	10,298	FIN	89
Tracy Site, DDRW	CA	37.16	91	2,708	6,808	FIN	91

Aberdeen Proving Ground (1)
(Edgewood Area and Michaelsville Landfill)
Edgewood and Aberdeen, Maryland

Service: Army

Size: 72,518 Acres

HRS Score: 53.57 (Edgewood Area)
31.09 (Aberdeen Area)

Base Mission: Develop and test equipment; Provide training

IAG Status: Pre-ROD IAG signed March 1990

Action Dates: PA/SI completed 1976; Placed on NPL 1990

Contaminants: VOCs, arsenic, phosphates, napalm, UXO, nitrates, chemical agents

Funding to Date: $42.56 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA/SI identified eight areas of contamination and recommended three areas for preliminary survey and two for further monitoring. Large areas contaminated or potentially contaminated with UXO, chemical munitions, and manufacturing wastes were identified. RCRA Facility Assessments (RFAs) completed under the RCRA Corrective Actions Permits in 1990 refined PA/SI work and identified 319 Solid Waste Management Units (SWMUs). These SWMUs were combined into 13 study areas under an IAG that was signed by EPA on March 10, 1990. Substantial VOC contamination of surface and ground water was detected. As a result, four drinking water wells were removed from service. Contaminant migration through surface waters may occur at five sites.

Remedial Investigation/ Feasibility Study (RI/FS)

Recent environmental investigations initially pursued under RCRA Corrective Actions Permits have been submitted to EPA as initial documents under the IAG. The investigations showed that high levels of hydrocarbons have been found in the ground water in four study areas. White phosphorous has been detected in the sediment and surface waters in one study area. O Field, contaminated with large quantities of chemical and explosive materials, is a source of contaminant migration. Arsenic and trichloroaniline have been detected in surface waters. Ground water has been contaminated by VOCs. While no significant off-base migration has been reported from any study area, small amounts of surface water contamination (VOCs) has been identified in on-post portions of the Chesapeake Bay and on-post tributaries to the Chesapeake Bay. Resampling has confirmed original survey findings. The IAG requires that initial studies be revised into RI/FS efforts under CERCLA/ SARA. RI/FS workplans have been drafted and submitted for 10 study areas. Presence of explosives and chemical agents severely restricts RI/FS actions prolonging study time requirements.

Remedial Design/ Remedial Action (RD/RA)

Removal actions have been completed at 12 SWMUs (including eight underground storage tanks). A total of 1,200 tons of PCB and DDT contaminated soil and concrete was removed and incinerated during 1991. Twelve additional removal actions are scheduled for completion in 1992. RODs for O Field and the White Phosphorous Study Area were published in 1991.

Air Force Plant #4 (General Dynamics) (2)

Fort Worth, Texas

Service: Air Force

Size: 602 Acres

HRS Score: 39.92

Base Mission: Manufacture aircraft and associated equipment

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1984; Placed on NPL 1990; RI/FS scheduled for completion 1992

Contaminants: Solvents, paint residues, spent process chemicals, PCBs, waste oils and fuels, heavy metals, VOCs, cyanide

Funding to Date: $14.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

Air Force Plant #4, owned by the government, is operated by General Dynamics. Approximately 13,000 people in the city of White Settlement rely on the aquifer underlying the base for drinking water. Thirty sites were studied and identified as potentially contaminated. Ground and surface water contaminants include di-, tri-, and tetrachloroethylene, ethylbenzene, toluene, methylene chloride, heavy metals, cyanide, and petroleum products.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in August 1986. Confirmation/quantification studies examined 30 sites and confirmed contamination of soil, surface, and ground water. Twenty-three sites were recommended for additional RI/FS study, and one site will undergo additional sampling. No further action was recommended for seven sites. The RI/FS will be completed in 1992.

Remedial Design/ Remedial Action (RD/RA)

Contaminated soil was excavated at four sites in 1986. Wells for the city of White Settlement are sampled quarterly by the Air Force. An interim ground water treatment system will be installed in 1992 to address contamination that originated from two spill sites. Quarterly monitoring is ongoing. Long-term monitoring will begin in 1994.

Air Force Plant PJKS
Waterton, Colorado

(3)

Service:	Air Force
Size:	464 Acres
HRS Score:	42.93
Base Mission:	Research and development; Missile assembly; Engine testing
IAG Status:	Initiated and expected to be signed 1992
Action Dates:	PA/SI completed 1986; Draft Final RI/FS 1988; Placed on NPL 1989
Contaminants:	Chlorinated organic solvents, fuel, hydrazine
Funding to Date:	$9.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

The site is surrounded by approximately 5,200 acres of land owned by Martin Marietta (Denver Aerospace). Since 1956, Martin Marietta has developed missiles and missile components for the Air Force at this location. The production, testing, and storage facilities are located southeast of, and at a lower elevation than, the Air Force property. Chlorinated organic solvents frequently were used to clean equipment and piping. Fuels containing hydrazine were developed, purified, and tested in support of the Titan III missile program.

The Air Force PA/SI investigated potentially contaminated areas on the plant, including the Deluge Containment Pond, a two-million gallon, concrete-lined surface impoundment that receives water potentially contaminated with hydrazine from rocket engine testing; the D-1 landfill, which accepted construction debris, household wastes, and unspecified chemical wastes before its closure and cover in 1974; and three areas of a hydrazine-contaminated water and TCE spill.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in March 1986. Samples taken in 1988 from monitoring wells near the contaminated areas detected TCE, 1,1,1-trichloroethane, and Freon 113. Tests conducted in 1986 identified TCE and cis-1,2-dichloroethylene in Brush Creek, which flows from the plant 1.8 stream miles to the South Platte River. Hydrazine was also discovered in soils primarily around the systems and components areas. The Air Force published a draft RI/FS in December 1988. The U.S. Environmental Protection Agency (EPA) and the Colorado Department of Health (CDH) have contested the findings in the RI/FS. Negotiations to resolve the issues are presently in progress and nearing final resolution.

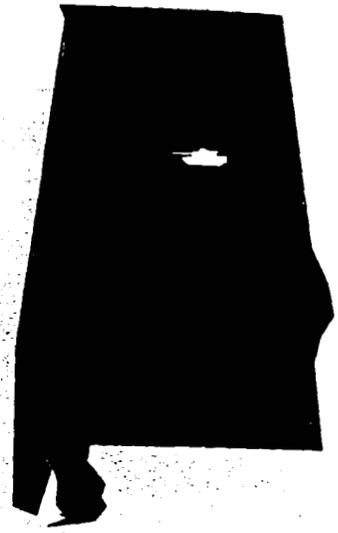
Remedial Design/ Remedial Action (RD/RA)

Seventeen draft-final No Further Action Decision Documents have been published and forwarded for EPA's and CDH's review and concurrence. These documents cover the removal and remediation of eleven USTs. A facility-wide ground water monitoring program began in May 1991. The program sampled 96 monitoring wells and eight surface water stations. A study has been initiated on background soil quality. A ground water extraction system is currently located on Martin Marietta property on the West Fork Brush Creek, near its confluence with the East Fork. This system intercepts contaminants migrating in the alluvial ground water system of the West Fork of Brush Creek. In addition, the Air Force has prepared an Interim Measures Investigation/FS draft work plan to provide a detailed operations and sampling plan for field data collection and management activities at four RCRA sites and one CERCLA site during 1992.

Alabama Army Ammunition Plant

(4)

Childersburg, Alabama



Service: Army

Size: 2,200 Acres

HRS Score: 36.83

Base Mission: Inactive; Former explosives manufacturing plant

IAG Status: Pre-ROD IAG signed December 1989; Became effective March 1990

Action Dates: PA/SI completed 1983; RI/FS initiated 1985; Placed on NPL 1987

Contaminants: Munition-related wastes, heavy metals, nitroaromatic compounds

Funding to Date: $19.39 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 21 sites as potential contaminant migration sources, with seven targeted for an RI/FS. The studies identified potential vertical contaminant migration within the aquifers and surface water contamination. A confirmation study delineated parameters and migration patterns for one aquifer and identified nitroaromatic compounds in onsite soils and in an aquifer beneath and downgradient from the manufacturing areas.

Additional sites were identified in subsequent studies; however, several of these sites have been determined to require no follow-on study.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS, begun in September 1985, is currently ongoing under the Federal Facilities Agreement (FFA). Investigations to date have determined that the ground water is contaminated with nitroaromatic compounds in concentrations above Federal Ambient Water Quality Criteria (AWQC). Onsite surface water is contaminated with nitroaromatic compounds and lead. Migration of contaminants at levels exceeding criteria is not expected.

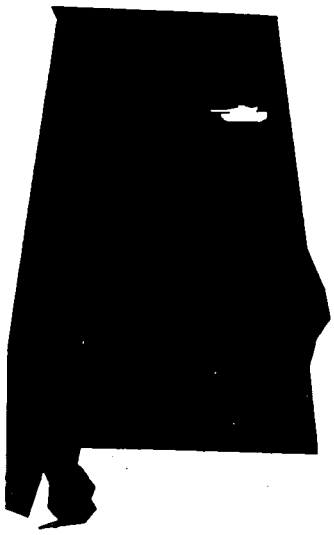
Remedial Design/ Remedial Action (RD/RA)

Cleanup of Area A, including soil excavation and decontamination of storage igloos and buildings, was completed in 1988. Additional sampling was conducted in 1991 to confirm completion of cleanup at Area A following EPA Region IV's request.

A determination has been made by the Army to address the stockpiled soils from the remediation of Area A that are now stored in Area B as a separate operable unit. An incineration contract was awarded in May 1991, allowing the option of incinerating the explosives-contaminated soils located in Area B. Approximately 25,000 cubic yards of soil will be incinerated. The Feasibility Study for the Operable Unit has been issued. A proposed plan for remediation has been prepared. A ROD for this OU was signed in late 1991.

Anniston Army Depot
(Southeast Industrial Area)
Anniston, Alabama

(5)



Service:	Army
Size:	15,245 Acres
HRS Score:	51.91
Base Mission:	Maintain combat vehicles and artillery equipment
IAG Status:	Pre-ROD IAG signed June 1990
Action Dates:	PA/SI completed 1983; RI/FS initiated 1983; Placed on NPL 1989
Contaminants:	VOCs, heavy metals, paints, acids, solvents, phenols, degreasers, ammunition wastes, oils and greases, fly ash
Funding to Date:	$12.40 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 15 past disposal or spill sites potentially contaminated with hazardous wastes. The PA/SI also determined that hazardous wastes from some sites had contaminated the surface water and were probably also contaminating the ground water.

Remedial Investigation/ Feasibility Study (RI/FS)

RI/FS work confirmed that the local ground water is contaminated. primarily with VOCs, phenols, and metals. Chrome at levels exceeding the National Pollutant Discharge Elimination System (NPDES) permit have been detected in ground water. Low levels of contaminants have migrated beyond the depot boundary. RIs since 1983 have indicated that contamination on the depot originates from four main sources: the residual Z-1 contamination, the Building 114 dewatering sump, the southern landfill area, and the northeast area near Building 130. Activities in 1991 included follow-on RI/FS work and monitoring.

Remedial Design/ Remedial Action (RD/RA)

Approximately 62,000 tons of contaminated materials at Site Z-1 were removed and excavated to a RCRA facility in 1983. An air stripper for removing volatiles from ground water has been operational since 1987. A stream of ground water tapped when building the basement at Building 114 currently is being treated for removal of VOCs. Expansion of the existing system to allow treatment of chrome currently is being contracted under USACE.

Interim ground water extraction and treatment systems were installed in areas of major contamination within the Southeast Industrial Area, including Site Z-1, the southern landfill, and the northeast area near Building 130. A Record of Decision (ROD) was signed in September 1991 to cover this interim remedial action.

ARDEC (Picatinny Arsenal)
Rockaway Township, New Jersey

(6)

Service:	Army
Size:	6,500 Acres
HRS Score:	42.92
Base Mission:	U.S. Army Armament Research, Development, and Engineering Center (ARDEC)
IAG Status:	Signed July 1991; Effective August 1991; Schedule approved October 1991
Action Dates:	PA/SI completed 1987; Placed on NPL 1990
Contaminants:	Heavy metals, VOCs, nitroaromatics and BNAs
Funding to Date:	$18.41 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA/SI determined that contamination in ground water, surface water, sediment, and soils is present.

Remedial Investigation/ Feasibility Study (RI/FS)

A contract has been awarded to prepare an RI/FS concept plan to review all existing environmental data and prioritize sites based on their potential impact on public health and the environment. A field report identifying 156 sites was finalized in March 1991. The Phase 1 RI addresses six areas which include 51 sites. Draft plans for the Phase 1 RI were provided to the regulatory agencies in December 1991. Plans for the RI of the Burning Ground were submitted to EPA Region II and the New Jersey Department of Environmental Protection in September 1991 and are currently being revised. Implementation of these activities is covered under the IAG with EPA.

Remedial Design/ Remedial Action (RD/RA)

RDX has been detected in off-post residential wells and bottled water is being supplied. An IRA to pump and treat TCE-contaminated ground water near Building 24, an inactive metal shop, is completed. The system will be turned on upon State approval.

Bangor Naval Submarine Base (7)
Silverdale, Washington

Service: Navy

Size: 6,692 Acres

HRS Score: 30.42 (Site A)
55.91 (Sub Base Bangor)

Base Mission: Support for Trident submarines

IAG Status: IAG signed January 1990

Action Dates: PA/SI completed 1983; Site A placed on NPL 1987; RI/FS initiated 1988; Subase Bangor and Site F placed on NPL 1990

Contaminants: Ordnance compounds, PCBs, waste oil and grease, spent solvents, waste battery acid, pesticides, paints/painting residues, photographic chemicals, metal plating wastes, dyes

Funding to Date: $14.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

During extensive base construction in 1977, significant site contamination was identified. A PA/SI identified 42 sites as potentially contaminated and 21 sites were targeted for RI/FS work. Site A, the Explosive Ordnance Disposal Site, and Site F, the Wastewater Disposal Area for Demilitarization Operations, were of primary concern. Ground water contamination of the uppermost aquifer has been identified at both sites. The primary contaminants of concern are typical constituents of military explosives: cyclonite (RDX) and TNT. The shallow aquifer, soil, and surface water have been contaminated by TNT, RDX, OTTO fuel, and ammonium picrate. The potential for contamination of nearby shoreline sediment from on-base surface water drainage also was evaluated.

Remedial Investigation/ Feasibility Study (RI/FS)

RI field work for Site A was initiated in May 1988, and an RI/FS was completed in August 1991. RI field work for Site F was initiated in November 1989, and an RI/FS will be completed in 1992. RI/FSs for the other eight sites will be completed in 1992 and 1993.

The Navy detected contamination in area surface waters and shellfish, but since the data are inconclusive, the risks may be very low. As part of an extensive community relations plan, the base has formed a Technical Review Committee (TRC) to allow the local community to review plans. Members include Bangor NSB; Naval Facilities Engineering Command; EPA Region X; State of Washington Department of Ecology; Bremerton/Kitsap County Health Department; Public Utility District #1 of Kitsap County; Hood Canal Coordinating Council; and community representatives from Bangor, Vinland and Olympic View, Washington.

Remedial Design/ Remedial Action (RD/RA)

The removal of underground storage tanks was conducted in 1991. Further, an IRA at Site F is being planned to reduce contaminated ground water migration.

Barstow Marine Corps Logistics Base (8)
Barstow, California

Service:	Navy
Size:	5,687 Acres
HRS Score:	37.93
Base Mission:	Store and distribute supplies and equipment
IAG Status:	Signed October 1990
Action Dates:	PA/SI completed 1986; Placed on NPL November 1989; RI/FS initiated in 1990
Contaminants:	Waste fuels, oils, degreasers, solvents, paints/paint residues, pesticides, PCBs
Funding to Date:	$14.15 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI was completed in 1986 and identified 36 potentially contaminated sites. The SI recommended that four sites progress into the RI/FS phase.

Ground water from the Mojave River Basin beneath the Nebo and Yermo areas used for both domestic and agricultural purposes is contaminated with VOCs. Laboratory analyses conducted in November 1988 indicated VOC contamination of the Yermo drinking and ground water, at concentrations exceeding California drinking water standards. An RFA was initiated in 1991 and is scheduled for completion in 1993.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS work plan and sampling and analysis plan were conditionally agreed to by FFA parties in May 1990. Plan finalization, subsequent to submittal of a series of amendments, is expected in early 1992. These documents address 38 potentially contaminated sites and include a solid waste water quality assessment test of the Yermo Landfill. The 38 sites are divided into six operable units. An FFA was signed in 1990 and establishes an RI/FS schedule for all 38 sites. An investigation of the water quality at 17 offsite drinking water wells in the adjacent community of Yermo was completed in May 1990. Two wells showed contamination at trace levels. The offsite wells are scheduled for continued monitoring during the RI. The first TRC meeting was held in November 1990. The TRC includes members from Southwest Division, Naval Facilities Engineering Command: EPA Region IX; California Department of Health Services; California Regional Water Quality Control Board, Lahontan Region; County of San Bernardino; City of Barstow, public representatives; Base Environmental Officer; Base legal counsel; and the Base Public Affairs Officer. RI/FS field work was initiated in 1991 with funding provided for the installation of monitoring wells, sampling and analysis of ground water and soil, and preparation of a RI/FS report addressing several Operable Units (OUs).

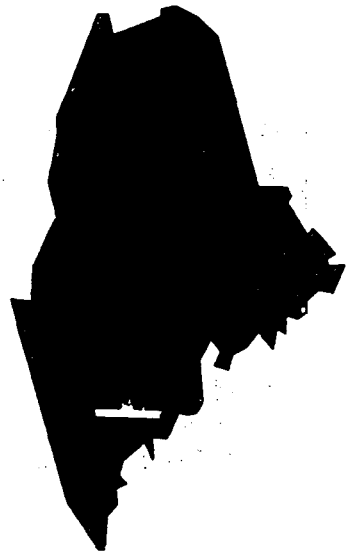
Remedial Design/ Remedial Action (RD/RA)

A time-critical action to purify the potable water at the Yermo Area was completed in 1989. The activated carbon water purification systems will continue treating and removing VOCs from ground water during 1992. In addition, the removal of old industrial waste sludge was funded in 1991 and will be conducted in 1992.

Brunswick Naval Air Station

(9)

Brunswick, Maine



Service: Navy

Size: 7,259 Acres

HRS Score: 43.38

Base Mission: Provide facilities, services, materials, and aircraft for anti-submarine warfare

IAG Status: Pre-ROD IAG signed 1989 between EPA and the Navy; Modified in 1990 to include the Maine Department of Environmental Protection

Action Dates: PA/SI completed 1983; RI/FS initiated 1986; Placed on NPL 1987

Contaminants: Waste oils, contaminated fuels, solvents, acids, paint residues, photographic chemicals, pesticides/herbicides, asbestos

Funding to Date: $3.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 10 past disposal or spill sites that could contain hazardous contaminants. Of these, seven were designated as having a high potential for environmental contamination, thus warranting further investigation. Ground water serving 18,000 people, as well as surface water and nearby wetlands, may be threatened by potential contaminant migration.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in April 1986 to confirm contamination, evaluate the potential for migration, and determine migration pathways. Exploration at two additional sites was initiated in 1991. A detailed FS for all sites was submitted to regulatory agencies in October 1991. Proposed plans for remedial actions have been submitted to the regulatory agencies for the complete remediation of Landfill Sites No. 1 and 3 and the containment of contaminated ground water known as the Eastern Plume. A TRC, established in December 1987, has held 10 meetings to date. TRC members include Northern Division, Naval Facilities Engineering Command; EPA Region I; Maine Department of Environmental Protection; Town of Brunswick; Brunswick-Topsham Water District; and community representatives. The three-party federal facilities agreement between the Navy, EPA and the State of Maine was signed in October 1990.

Remedial Design/ Remedial Action (RD/RA)

Initiation of RD/RA work is expected in 1992 for both sites 1 and 3 Landfill and the Eastern Plume Projects.

Camp Lejeune Marine Corps Base (10)
Jacksonville, North Carolina

Service: Navy

Size: 88,432 Acres

HRS Score: 33.13

Base Mission: Provide housing, training, logistical, and administrative support for Fleet Marine Force Units

IAG Status: Pre-ROD IAG signed February 1991

Action Dates: PA/SI completed 1983; RI/FS initiated 1984; Placed on NPL 1989

Contaminants: Waste oils, fuels, solvents, battery acid, lithium batteries, paints, thinners, pesticides/herbicides, PCBs

Funding to Date: $5.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 76 past spill and disposal sites as potentially contaminated with migrating contaminants. Thirty sites were targeted for further investigation. Two potentially new sites will undergo PA/SI in 1991. Wastes disposed of in landfills create a potential for soil, surface, and ground water contamination. Surface waters drain from the base to the Atlantic Ocean through the New River, both of which support recreational and commercial fishing. Several endangered species, including the American Alligator and the Red-Cockaded Woodpecker, inhabit protected areas on the base. Ground water is the sole source of potable water for the base and surrounding communities.

Remedial Investigation/ Feasibility Study (RI/FS)

An accelerated RI/FS for the Hadnot Point Industrial Area is expected to be completed in 1992. The RI/FS already has identified fuel and chlorinated solvents in the ground water and the contamination source is being investigated. Several on-base drinking water supply wells have been closed. The information available on the majority of the remaining 24 sites has been consolidated into an RI interim report focused on scoping the remainder of the RI/FS requirements.

A TRC held its third meeting in March 1991. The next meeting will be scheduled in 1992 as soon as RI/FS documentation for the Hadnot Point Industrial Area Interim Remedial Action is complete.

Remedial Design/ Remedial Action (RD/RA)

Initiation of RD/RA work is expected in 1992. A fence was installed around the Rifle Range Chemical Dump in 1990.

Camp Pendleton Marine Corps Base (11)

San Diego County, California

Service:	Navy
Size:	125,000 Acres
HRS Score:	33.79
Base Mission:	Provide housing, training, logistical, and administrative support for Fleet Marine Force Units
IAG Status:	Signed October 1990
Action Dates:	PA/SI completed 1988; RI/FS initiated 1989; Placed on NPL 1990
Contaminants:	VOCs, spent oils, fuels, PCBs, pesticides, solvents
Funding to Date:	$6.67 million

Preliminary Assessment/ Site Inspection (PA/SI)

Twenty subsurface soil borings and 18 ground water monitoring wells have been drilled, and more than 200 individual samples of surface soil, subsurface soil, surface water, and ground water have been analyzed. The 18 chemicals found all have the potential to cause toxic effects, and 12 are known carcinogens. Ground water is the potable water source for the installation. The SI indicated that the potable wells were not contaminated. An RFA is in progress to identify other potential sites for inclusion in the RI/FS. Field sampling is scheduled to begin in 1992.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in September 1989 to investigate the nine original sites. RI/FS scoping documents, including the RI/FS work plan, health and safety plan, community relations plan, and sampling and analysis plan have been developed. An FFA was signed by DoD, EPA, and the State of California in October 1990. A TRC has been formed and includes members from Camp Pendleton MCB; Southwest Division, Naval Facilities Engineering Command; California Regional Water Quality Control Board, San Diego Region 9; EPA Region IX; California Department of Health Services, Toxic Substances Control Division; and public representatives.

Remedial Design/ Remedial Action (RD/RA)

No RD/RA activities are currently planned, but removal actions will be considered if an imminent threat is identified. Interim remedial measures were taken in 1986 to secure contaminated sites from inadvertant entry.

Castle Air Force Base

(12)

Merced, California

Service: Air Force

Size: 2,777 Acres

HRS Score: 37.93

Base Mission: Train tanker crews; Service KC-135 stratotanker

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1983; RI/FS initiated 1986; RI/FS scheduled for completion 1995; Placed on NPL 1987

Contaminants: Spent solvents, fuels, waste oils, pesticides, cyanide, cadmium

Funding to Date: $29.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

This installation began as an Army base in 1941 and was used as an aircrew training facility. Strategic Air Command (SAC) assumed responsibility for the base in 1946. Mission-support operations have generated varying quantities of hazardous wastes.

PA/SI work was completed in October 1983. The PA/SI consolidated the investigation of 37 initially identified sites into 26 potential contamination source areas. These areas included landfills, discharge areas, chemical disposal pits, fire training areas, fuel spill areas, and PCB spill areas. The Air Force believes that five of the areas (PCB spill sites) require no further investigation because PCB contamination has been removed through appropriate response actions.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in September 1986 and grouped the remaining 21 areas into several investigative sites plus a TCE plume site. Results indicate the shallow ground water aquifer beneath and adjacent to the base is contaminated with nitrates, trace amounts of pesticides, and trichloroethylene at levels exceeding state and federal drinking water standards.

Ground water investigations conducted in 1991 focused on the main base sector of Castle. The Air Force signed a ROD with EPA and the State of California in August 1991 for the cleanup of TCE contaminated ground water in the main base area. Investigations under the pre-ROD IAG now include two additional ground water units scheduled for RODs in October 1992 and February 1994. Investigations scheduled for 1992 include a significant effort to characterize the extent of the TCE contamination outside the western perimeter of Castle AFB.

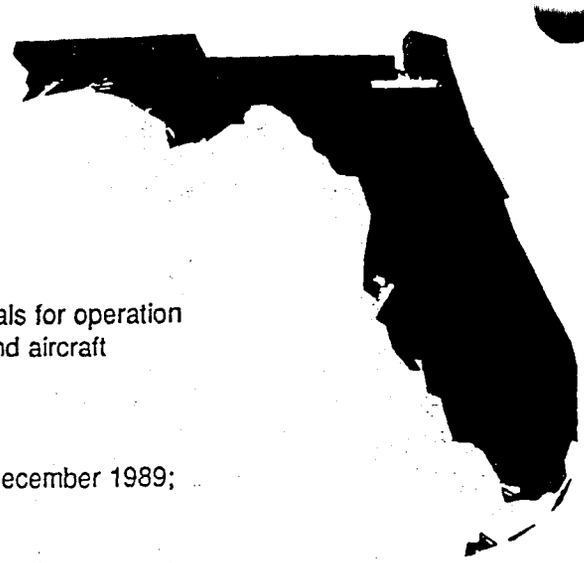
Remedial Design/ Remedial Action (RD/RA)

In 1986, the TCE-contaminated drinking water supply on-base was replaced with a potable water well drawing from deeper, uncontaminated aquifers. In 1987, filter systems were installed in off-base wells to remove TCE contamination. Bottled water was supplied to off-base users before filter installation. In 1988, two deep wells replaced TCE-contaminated water supplies: one for the city of Atwater (2,000 gpm) and one to meet on-base needs (2,100 gpm). These wells are 800 to 900 feet deep. In 1989, a 1,400-gpm granular activated carbon filtration system for TCE-contaminated ground water was constructed. Two RDs were initiated in 1991 for the remediation of ground water and fuel-contaminated soils. A design schedule for the main base ground water remediation scheme is being finalized under the pre-ROD IAG. RAs initiated in 1991 include ground water remediation, capping inactive production wells, and removing abandoned USTs.

Cecil Field Naval Air Station

(13)

Jacksonville, Florida



Service: Navy

Size: 30,000 Acres

HRS Score: 31.99

Base Mission: Provide facilities, services, and materials for operation and maintenance of naval weapons and aircraft

IAG Status: Signed October 1990

Action Dates: PA completed 1985; Placed on NPL December 1989; RI/FS field work began October 1991

Contaminants: Heavy metals, petroleum/oil/lubricants, paints, solvents, pesticides, fungicides, herbicides, acids, photographic chemicals, paint thinners, blasting grit

Funding to Date: $2.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 18 sites of potential contamination. Of these, 10 were recommended for further investigation. In 1986, the base was issued a Hazardous and Solid Waste Amendments (HSWA) permit, which identified 14 SWMUs. As required by the HSWA permit, a RCRA Facility Investigation (RFI) was performed on the 14 SWMUs. An additional site of potential contamination also was identified during this investigation.

Remedial Investigation/ Feasibility Study (RI/FS)

The Navy, EPA, and Florida Department of Environmental Resources (FDER) simultaneously negotiated FFAs for NAS Cecil Field, NAS Jacksonville, and NAS Pensacola. RI/FS work for six sites was approved by regulatory agencies in September 1991. A TRC meeting was last held on June 20, 1991. Six sites are undergoing a Phase I RI.

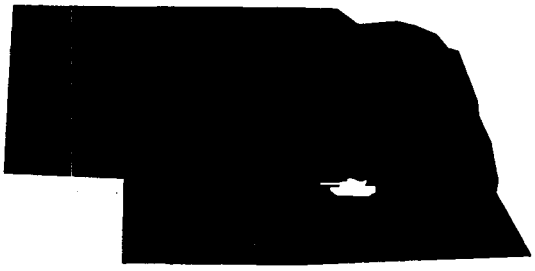
Field investigations at six sites began October 1991. A RCRA permit for site 16 has been applied for. The Navy held a Public Availability Session for the IR Program on October 2, 1991.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities.

Cornhusker Army Ammunition Plant (14)

Hall County, Nebraska



Service: Army

Size: 11,936 Acres

HRS Score: 51.13

Base Mission: Currently standby status

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1980; RI/FS initiated 1981; Placed on NPL 1987

Contaminants: Munitions-related wastes

Funding to Date: $16.43 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Installation Assessment Study (IAS) identified 58 sources of contamination and ground water contamination by explosive compounds. The plant is currently in standby status and the Army is planning to excess it following the completion of environmental studies required for real estate transactions. Preliminary findings from the excessing study indicated extensive asbestos (mostly non-friable) contained in the loading line buildings and UXO in the burning ground area.

Remedial Investigation/ Feasibility Study (RI/FS)

A contaminant plume affecting more than 500 private wells in Hall County and nearby Grand Island was detected 3 1/2 miles off-post. An RI/FS and a public health evaluation report were submitted to regulators in 1986. RD/RA activities consisting of an alternate water supply and contaminant source remediation were recommended. An IAG, effective September 4, 1990, has been negotiated with EPA and the state.

An RI/FS was initiated in 1991. Field investigations included geophysics of the burning grounds/ landfill and sampling of residential gardens near the installation. Three public meetings were conducted. Additional effort funded during 1991 will be completed in 1992 such as monitoring well installation and investigation of the 70 remaining cesspools/sumps, shop area, old laboratory, and ditches/creek area. All data will be used to evaluate the alternatives for soil and ground water remediation.

Remedial Design/ Remedial Action (RD/RA)

In 1986, the municipal water system was extended to 800 residences in Grand Island. A dewatering system also was completed to control the high water table. In addition, remediation was initiated on contaminated soil at 58 cesspools and leaching pits to destroy all explosive compounds. Incineration operations began in 1987 and ended in 1988. Approximately 40,000 tons of soil were incinerated. The incinerated soil was landfilled onsite in accordance with procedures agreed to by the Army and Nebraska.

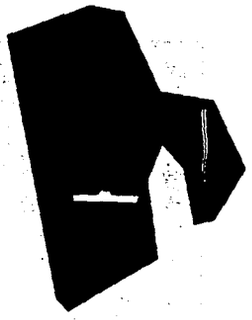
Based on the identification of additional residents affected by the off-post plume, an Engineering Cost Analysis was initiated and will be completed in 1992.

As a result of residential sampling conducted adjacent to the site, eight residents were provided bottled water as an emergency action.

Davisville Naval Construction Battalion Center

(15)

North Kingston, Rhode Island



Service:	Navy
Size:	1,284 Acres
HRS Score:	34.52
Base Mission:	Mobilize reserve naval construction battalions; Supply construction equipment; Base closure by September 1994
IAG Status:	Initiated and expected to be signed 1992
Action Dates:	PA/SI completed 1984; RI/FS initiated 1988; Placed on NPL November 1989
Contaminants:	PCBs, VOCs, petroleum oil/lubricants, pesticides, lead
Funding to Date:	$2.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

Davisville Naval Construction Battalion Center (NCBC) consists of the Main Center; the West Davisville Storage Area, located in the town of North Kingston, Rhode Island, approximately 10 miles south of Providence; and Camp Fogerty, a training facility located in the town of East Greenwich, Rhode Island, four miles west of the Main Center.

A PA/SI addressed 14 sites. A Confirmation Study/Verification Step on 13 sites was completed in February 1987. Three sites were recommended for further study by the PA/SI, seven were requested for further study by the Rhode Island Department of Environmental Management, and three were targeted for further study by the Navy. The results of the Verification Step indicated that the 13 sites posed no imminent health hazard.

Remedial Investigation/ Feasibility Study (RI/FS)

The Navy has completed a work plan for an RI/FS at 10 sites. Twenty TRC meetings have been held since April 1988. TRC members include Davisville NCBC; Northern Division, Naval Facilities Engineering Command; EPA Region I; Rhode Island Department of Environmental Management; town of North Kingstown; town of East Greenwich; USFDA; USEPA Engineering Research Laboratory, Narrangasett; Naval Ocean Systems Center, San Diego, California; and Narrangasett Bay Project.

In May 1989, the community relations plan was issued for NCBC. Field work for the RI/FS work plan was completed in the spring of 1990. The draft RI report was issued in May 1991. The Navy is currently in the process of finalizing this report.

RI/FS work will be initiated in 1992 for additional sites.

Remedial Design/ Remedial Action (RD/RA)

PCB-contaminated concrete was removed at two sites during 1991. Initiation of RD/RA work is expected in 1992.

Defense General Supply Center Richmond

(16)

Chesterfield County, Virginia

Service: Defense Logistics Agency

Size: 640 Acres

HRS Score: 33.85

Base Mission: Manage general supplies for Armed Forces

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1985; RI/FS initiated 1986; Placed on NPL 1987

Contaminants: Phenols, solvents, paints/paint residues, corrosives, pesticides/herbicides, refrigerants/antifreeze, photographic chemicals, oils

Funding to Date: $6.43 million

Preliminary Assessment/ Site Inspection (PA/SI)

PA/SI work revealed 30 potential past spill and/or disposal sites. Six sites were recommended for further study under an RI/FS. Three of the sites are contiguous, with a high potential for contaminant migration. Both on- and off-base water supplies have been contaminated with phenols, chloroform, methylene chloride, dichlorobenzene, di-, tri- and tetrachloroethylene, and chromium.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in September 1986, and to date two draft RIs for the Area 50/Open Storage Area/ National Guard Area and one draft RI for the Acid Neutralization Pits have been submitted to EPA and the Virginia Department of Waste Management (VDWM). The three remedial investigations have been subdivided into eight operable units. The operable units consist of five soil units and three ground and surface water units. Draft final focused feasibility studies (FFSs), draft records of decision and draft proposed plans have been issued for two of the five soil areas. FFSs are currently being prepared for two other soil areas. Area 50/Open Storage Area/National Guard Area was designated an accelerated operable unit and moved up in the schedule. The current project schedule has a FFS starting for an operable unit every month from September 16th through March 11, 1992. Under this schedule, issuance of the last draft final proposed plan and record of decision (ROD) will be April 16, 1993.

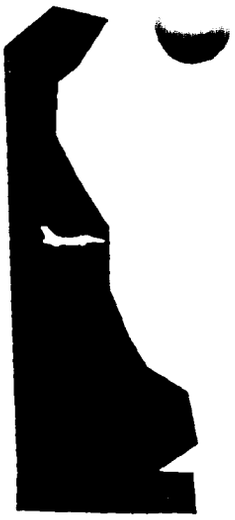
Remedial Design/ Remedial Action (RD/RA)

Two RODs will be issued during the first quarter of 1992. One draft ROD for the Open Storage Area OU recommends limited remedial action consisting of administrative controls. The second ROD for the soil at the Acid Neutralization Pit (NAP) OU recommends remediation using vacuum extraction techniques. These plans are subject to change pending receipt of public comments. A remedial action contract will be awarded during 1992 for the ANP soil contamination. An Interim Remedial Action contract for ground water at the Area 50/ Army National Guard OU will also be awarded during 1992.

Dover Air Force Base

Dover, Delaware

(17)



Service:	Air Force
Size:	3,740 Acres
HRS Score:	35.89
Base Mission:	Air lift services for troops, cargo, and equipment
IAG Status:	Pre-ROD IAG signed 1989
Action Dates:	PA/SI completed 1983; RI/FS initiated 1987; RI/FS scheduled completion 1993; Placed on NPL 1989
Contaminants:	Solvents, paints, waste fuel and oils, VOCs muriatic and nitric acids, caustic soda, cyanide, heavy metals, phenols
Funding to Date:	$8.97 million

Preliminary Assessment/ Site Inspection (PA/SI)

Some wastes were buried in drums and others were disposed of in various on-base locations covering 44 acres. The upper aquifer was contaminated with low levels of VOCs and heavy metals. The deeper aquifer provides drinking water to the base and is not contaminated. A total of 56 sites have been identified. After the PAs, no further action was recommended at one site. SIs of 32 sites were conducted in 1991. Decision Documents recommended no further action at 18 sites where the SIs revealed no contamination above risk-based action levels.

Remedial Investigation/ Feasibility Study (RI/FS)

A presurvey, completed in June 1986, investigated 12 sites and confirmed that the concentration of VOCs and metals in soils, sediments, and surface and ground water exceeded Delaware's drinking water standards at several sites. An additional eight sites have been identified since the 1986 presurvey was completed. Contaminant source areas and the extent of contaminant migration are being investigated in an RI/FS expected to be completed in 1993.

Remedial Design/ Remedial Action (RD/RA)

In 1985, a removal and closure action conducted at Site WP-21 cleaned up the old industrial waste basin, a major source of ground water contamination. Remedial actions were conducted to comply with state regulatory requirements. Solid Waste Disposal Area Site LP-24 was remediated and closed in 1988. A ROD was signed in late 1990 for RA at Site FT-03, a former fire training area. RD is now complete for this site, and remedial action will be performed in 1992.

Edwards Air Force Base

(18)

Kern County, California

Service:	Air Force
Size:	470 Square Miles
HRS Score:	33.62
Base Mission:	Aircraft research and development center
IAG Status:	Pre-ROD IAG signed 1990
Action Dates:	Initial PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1990; Final PA/SI initiated in 1990
Contaminants:	Waste oils, solvents, VOCs, petroleum hydrocarbons
Funding to Date:	$41 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Main/South Base, at the western edge of Rogers Dry Lake, is used primarily for maintaining and refueling aircraft. Large amounts of fuel have been spilled and poor disposal practices have resulted in the release of organic solvents to the ground in this area. Other sites in the area include an abandoned sanitary landfill, an area where electroplating wastes were dumped, and the storm water retention pond. The North Base, located five miles to the northeast of the Main Base area, has a drum storage site at the north end of Rogers Dry Lake, and three unlined surface impoundments where wastes were poured during the 1960s and 1970s. Contaminants include waste oils, solvents, and nitric acid generated primarily by the Air Force Rocket Propulsion Laboratory. According to a 1987 IRP report, trichloroethylene; trans-1,2-dichloroethylene, 1,2-dichloroethylene; tetrachloroethylene; and methylene chloride are present in the shallower ground water aquifer underlying the Main/South Base. Edwards AFB's 13,800 employees obtain drinking water from deep aquifer water wells within three miles of the Main/South Base.

Additional sites are being assessed to confirm the presence of contaminants and assess the need to make these areas formal IRP sites.

Remedial Investigation/ Feasibility Study (RI/FS)

A site-specific RI/FS began in August 1986 to determine the type and extent of contamination in local areas and to identify alternatives for remedial action. The sites identified at Edwards AFB include drum disposal areas, waste disposal pits, USTs, a leaking jet fuel pipeline, rocket test stands, oxidation/evaporation ponds, landfills, fire protection training areas, TCE sites, and other spill sites.

Review of the RI/FS is underway. The majority of work conducted in 1991 was RI/FS work driven by requirements for additional study.

Remedial Design/ Remedial Action (RD/RA)

In 1984, drums and contaminated soil in a drum disposal area (Site 1) were removed and the site was capped. The Main Base toxic waste disposal area (Site 2) was regraded and long-term monitoring was initiated. In the South Base POL storage area (Site 5), tanks were excavated or filled with clean sand and the area was regraded.

In 1989, a ground water treatment system was installed at Site 16 and placed in operation. In 1990, USTs were removed. Ground water monitoring will continue through 1992.

In 1991, through a joint effort with the EPA, heavy metals and dioxins (Site 3) underwent soil stabilization and polymer sealing.

The FFA signed in 1990 calls for acceleration of the schedule for RD/RA.

Eielson Air Force Base

(19)

Fairbanks North Star Borough, Alaska

Service:	Air Force
Size:	19,790 Acres
HRS Score:	48.14
Base Mission:	Tactical air support to Pacific Air Forces
IAG Status:	Pre-ROD IAG signed May 1991
Action Dates:	PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1989
Contaminants:	Heavy metals, petroleum/oil/lubricants, VOCs, solvents
Funding to Date:	$16.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

Eielson AFB contains an active asbestos landfill and closed, unlined landfills that extend into ground water, shallow trenches where weathered tank sludge was buried, drum storage areas, and other disposal/spill areas.

Lead, arsenic, chromium, copper, nickel, and zinc have been found in the soil at the drum storage area; trans-1,2-dichloroethylene and lead have been found in shallow onsite monitoring wells. An estimated 9,000 people obtain drinking water within three miles of the base.

A number of new sites have entered the PA/SI phase under the IAG in 1991.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in August 1986. Ongoing RI/FS work is planned for IRP sites during 1992 to determine the extent of contamination on base and to identify alternatives for remedial action under the IAG.

Remedial Design/ Remedial Action (RD/RA)

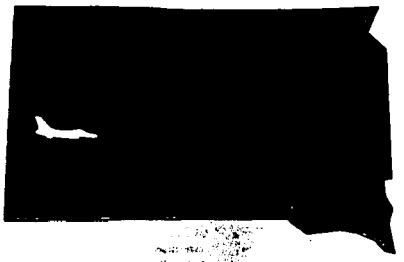
Several monitoring wells have been converted into static recovery wells to remove floating petroleum product from ground water. Small quantities have been recovered. Four USTs were removed in 1990.

During 1991, IRAs included removal and incineration of 10,000 cubic yards of petroleum, oil, and lubricant (POL)-contaminated soils spilled from a UST. RD activities in 1992 will include designs for floating product recovery using vacuum extraction; static recovery of floating product; in-situ bioremediation of POL-contaminated soils; and excavation to support IRAs at 13 sites.

Ellsworth Air Force Base

(20)

Rapid City, South Dakota



Service: Air Force

Size: 4,858 Acres

HRS Score: 33.62

Base Mission: Long-range bombardment missiles and air refueling

IAG Status: Initiated and expected to be signed 1992

Action Dates: PA/SI completed 1985; RI/FS initiated 1987; Placed on NPL 1990

Contaminants: VOCs, metals, solvents, jet fuel

Funding to Date: $22.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

The base is bordered by open land on the north, west, and south and by commercial-residential areas to the east.

The September 1985 PA/SI report identified 18 sites with potential hazardous waste disposal. These sites included six landfills, five spill sites, four fuel sites, the Badlands Bombing Range, a water contamination site, and a ground contamination site.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI was initiated in 1987 and completed in 1989. Four of the sites (the fire training area, an auto shop, a fuel hydrant, and a landfill) required an FS in 1991. Further remedial investigations/feasibility studies are planned for 1992.

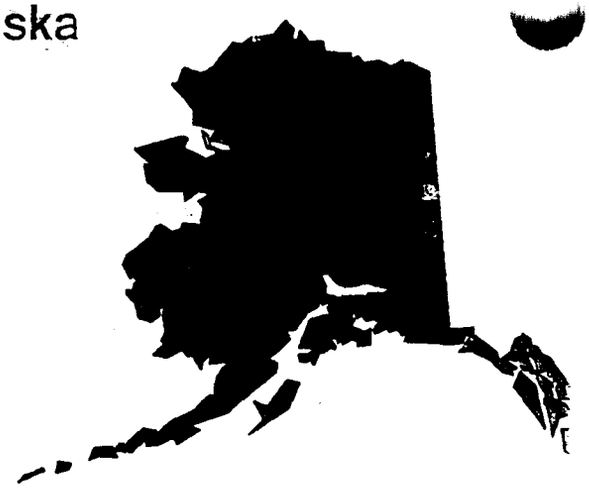
Remedial Design/ Remedial Action (RD/RA)

Various USTs have been removed to date and additional UST removals are scheduled for 1992. During 1991, the Badlands Bombing Range was fenced and properly labelled with warning signs. In addition, a temporary water supply line was constructed to supply an adjoining landowner with an alternative drinking water supply. Also, the RA for the 70 Hangar Complex was finished.

Elmendorf Air Force Base

(21)

Greater Anchorage Borough, Alaska



Service: Air Force

Size: 13,100 Acres

HRS Score: 45.91

Base Mission: Headquarters to Alaskan NORAD Region; F-15 Fighter Wing; NORAD Region Operations Control Center; Rescue Coordination Center; Military Airlift Group flying transports

IAG Status: Initiated and expected to be signed in 1992

Action Dates: Original PA/SI completed 1983; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: VOCs, heavy metals, petroleum/oil/lubricants, solvents, paints

Funding to Date: $15.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

An estimated 121,000 individuals reside within three miles of the installation, but drinking water for these residents is obtained from surface supplies located 12 to 30 miles north of the base. Emergency backup water supply wells for Elmendorf AFB are located within three miles of identified contamination.

The original PA/SI identified a number of areas which had received hazardous wastes, including lead, acid batteries, and waste solvents. Unlined and unbermed landfills are located in sandy and gravelly soils. Shop wastes, including solvents and paint thinners, were disposed of in a naturally occurring unlined trench. At some locations, fuel or solvents spilled onto floor drains that feed into dry wells. The last area investigated was a JP-4 spill site.

Remedial Investigation/ Feasibility Study (RI/FS)

Continued RI/FSs are planned for 1992. Additional field work will be conducted at former landfills, hazardous waste disposal locations, and spill sites. Studies will be done in areas where shop wastes, including solvents and paint thinners, have reportedly been discharged through building drains emptying into dry wells. The current RI/FS will be conducted in conformance with the Federal Facilities Agreement for 32 sites. Additional studies will be conducted for the remaining sites.

Remedial Design/ Remedial Action (RD/RA)

Removal actions planned for 1992 include remediation of an abandoned asphalt staging area containing 4,700 drums of asphalt and other debris. A second project involves the removal of an abandoned underground 50,000-gallon JP-4 tanks.

An interim remedial action will be designed in 1992 to remove spilled fuel from soil at a four million gallon underground storage facility taken out of service in 1991.

El Toro Marine Corps Air Station

(22)

Irvine, California

Service: Navy

Size: 4,700 Acres

HRS Score: 40.83

Base Mission: Major west coast jet fighter facility

IAG Status: Pre-ROD signed October 1990

Action Dates: PA completed 1987; RI/FS initiated 1989; Placed on NPL 1990

Contaminants: Waste fuels and oils, organic solvents, degreasers, paints, photographic chemicals, PCBs, corrosives, refrigerants, pesticides, herbicides, VOCs

Funding to Date: $2.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Initial Assessment Study (IAS) completed in May 1986 recommended an SI be performed for nine of 17 sites. In response to regulatory agency comments during September 1986, four sites were added to the SI. An SI work plan was finalized in August 1988, but funding restrictions prevented implementation.

In 1985, the Orange County Water District (OCWD) discovered TCE in two off-station wells during 1985. A perimeter investigation was conducted and documented TCE contamination up to 90 ppb in shallow ground water at the base boundary, and limited migration of contamination off station. OCWD completed an off-station ground water investigation in 1989 and documented the existence of a large TCE plume in deep ground water over a 3-mile radius off base. Their results have generated controversy regarding base responsibility for the contamination. As an initial remedial measure, existing monitoring wells were retrofitted with pumps and a small activated carbon treatment plant was constructed. The Orange County Water District (OCWD) is designing a desalter facility for removal of total dissolved solids (TDS), nitrates, and the TCE from the ground water in the vicinity of MCAS El Toro.

The California Water Quality Control Board requested that approximately 30 additional sites be investigated. In response to this request and to comply with RCRA requirements, the Navy is conducting an RFA.

Remedial Investigation/ Feasibility Study (RI/FS)

Development of an RI/FS work plan began in December 1989 and includes 22 sites. An additional RI/FS work plan will be generated in 1992 to incorporate one more site and any additional sites identified for the RI/FS process through an RFA.

An FFA between the Department of the Navy, EPA, and the State of California was signed in October 1990. The TRC members include El Toro MCAS; Southwest Division, Naval Facilities Engineering Command; EPA Region IX; State of California Department of Health Services; California Regional Water Quality Control Board; Orange County; Orange County Water District; Irvine Water District; and public representatives.

Remedial Design/ Remedial Action (RD/RA)

A treatability study was implemented in 1989 to test the feasibility of using activated carbon to remove contaminants from ground water. Ground water is being pumped continuously from three existing monitoring wells and treated using this system. RD/RA activities are expected to be initiated in 1995.

Fairchild Air Force Base (4 Waste Areas) (23)
Spokane County, Washington

Service: Air Force

Size: 4,300 Acres

HRS Score: 31.98

Base Mission: Strategic Air Command operations

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1985; RI/FS initiated 1988; Placed on NPL 1989

Contaminants: Solvents, fuels, oils, electroplating chemicals, cleaning solutions, corrosives, photographic chemicals, paints, thinners, pesticide residues, PCBs, low-level radioactive wastes

Funding to Date: $20 million

Preliminary Assessment/ Site Inspection (PA/SI)

A well within base boundaries is a standby water supply for the base's 5,200 employees. Approximately 250 private wells serving about 12,000 people are within three miles of the facility. West Medical Lake, Medical Lake, and Silver Lake, located within three miles downstream of the base, support wildlife and are used for recreational activities.

A PA/SI identified several waste disposal sites at Fairchild AFB and one site at the USAF/FAA operations at Mical Peak. Land-use restrictions due to hazardous waste contamination are in effect. Four waste areas covering 85 acres comprise the NPL site and include Building 1034 French drain and dry well system; two landfills, one northeast of Taxiway 8 and one at Craig Road; and the industrial waste lagoons. More than 4,000 drum-equivalents of carbon tetrachloride and other solvents, paint wastes, plating sludges containing cadmium and lead, and related industrial wastes have been disposed of in the four areas.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in 1988 and will be completed in 1992. An RI/FS for additional sites began in 1991 and is expected to be completed by the end of 1994. The industrial waste lagoons, a fire training area, and two base landfills lead the list of sites being assessed under the RI/FS.

Remedial Design/ Remedial Action (RD/RA)

USTs were removed during 1990 and 1991. Soils contaminated with fuels and oils were also removed in 1991. Construction of extraction wells downgradient of the Craig Road Landfill began in 1991. Craig Road landfill and a sewer connection linking the Fairchild sewage system to the Spokane system are scheduled for completion in 1992.

F.E. Warren Air Force Base

Cheyenne, Wyoming

(24)

Service: Air Force

Size: 5,866 Acres

HRS Score: 39.23

Base Mission: Strategic Air Command operations; Strategic Missile Wing; Aerospace Rescue and Recovery Squadron

IAG Status: Signed September 1991

Action Dates: PA/SI completed 1985; RI/FS initiated 1991; Placed on NPL 1990

Contaminants: Lubricating oils, solvents, paints, coal and fly ash, batteries/battery acid

Funding to Date: $11.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

Agricultural lands and industrial developments surround F.E. Warren AFB. According to tests conducted in May and June 1987 by the U. S. Geological Survey (USGS), TCE and chloroform are present in monitoring wells on base. An estimated 2,400 people obtain drinking water from private deep aquifer wells upgradient and within three miles of hazardous substances on base. USGS also detected lead in soil at the firing range, and TCE in Crow and Diamond Creeks on base downgradient of spill areas. The Air Force has identified areas involving spills or leaks, six landfills, two fire training areas, a battery acid disposal pit, the firing range, and a contaminated surface water area.

Remedial Investigation/ Feasibility Study (RI/FS)

RI/FS work began in April 1987 and will continue until 1996. The eight decision documents produced in 1990 specifying no further action were rejected by EPA.

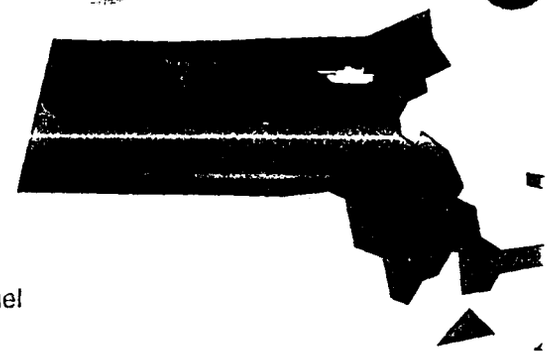
Remedial Design/ Remedial Action (RD/RA)

Water wells have been installed to monitor ground water contamination. During 1990, soils and TCE were removed from Spill Site No. 7, a major contaminant source for both ground water and Diamond Creek. Ground water recovery and treatment will begin in the spring of 1992. Remedial actions are scheduled for two spill sites and two fire training areas in 1992.

Fort Devens

(25)

Fort Devens, Massachusetts



Service:	Army
Size:	9,416 Acres
HRS Score:	42.24
Base Mission:	Army Reserve and National Guard personnel training; Army Security Agency Training Center and School support
IAG Status:	Pre-ROD IAG signed June 1991
Action Dates:	PA/SI completed 1982; RI/FS initiated 1989; Placed on NPL 1989
Contaminants:	VOCs, petroleum products, battery acid, PCBs, pesticides, herbicides, photographic chemicals, medical wastes
Funding to Date:	$5.28 million

Preliminary Assessment/ Site Inspection (PA/SI)

The initial assessment recommended that no follow-up studies are required and that the Fort Devens Sanitary Landfill facility Closure Plan should be coordinated with the Commonwealth of Massachusetts. In 1985, Fort Devens applied for a RCRA Part B permit for its hazardous waste storage facility. In the permit process, Fort Devens identified 40 SWMUs. A detailed SI of the six highest priority sites was initiated in September 1990 and field work was completed in August 1991. A draft SI report is due in January 1992. Another detailed SI for the next highest priority sites was initiated in September 1991.

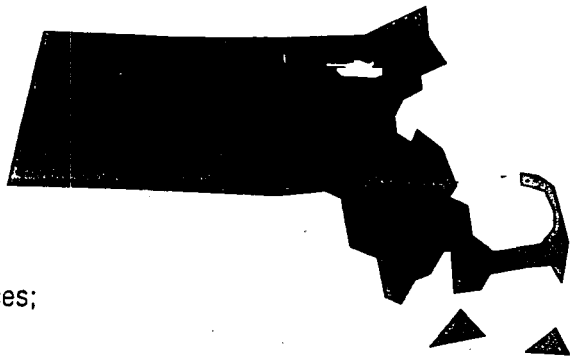
Remedial Investigation/ Feasibility Study (RI/FS)

A master environmental plan was prepared in 1989. This plan identifies and prioritizes all potential hazardous waste sites and proposes appropriate investigative and corrective action efforts for each site. An RI of two landfills was initiated in September 1990 and the field effort was completed in August 1991. A draft RI report is due in March 1992. A follow-on RI and FS project was initiated in September 1991.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities.

Fort Devens--Sudbury Training Annex (26)
Middlesex County, Massachusetts



Service: Army

Size: 2,301 Acres

HRS Score: 35.57

Base Mission: Troop training; Geophysics laboratory services; Fish and wildlife management

IAG Status: Signed June 1991

Action Dates: PA/SI completed 1980; Placed on NPL 1990; RI/FS completion expected 1993

Contaminants: VOCs, petroleum products, PCBs, pesticides, herbicides

Funding to Date: $3.76 million

Preliminary Assessment/ Site Inspection (PA/SI)

Sudbury Annex is managed by Fort Devens Army Installation, located approximately 12 miles to the northwest. Prior to 1982, Sudbury Annex was part of the Natick Research Development and Engineering Center (NRDEC). In 1982, all but a small housing area was excessed to Fort Devens. The PA/SI recommended a follow-on survey of Sudbury Annex to confirm the presence or absence of contamination, and to determine the extent of contaminant migration. In 1991, a Master Environmental Plan (MEP) was developed which identified 68 potentially contaminated sites. Follow-on SI work is required for 11 sites, with completion of all SI work scheduled for 1993.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI was initiated in November 1986. Three sites were identified as contributing to the HRS score. Currently, an RI/FS is being performed at 13 sites identified during the MEP investigations.

RI work for the remaining sites is scheduled for completion in 1993.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities. A removal action was conducted in 1985 for the PCB Spill Area. Further study is required for this location.

Fort Dix (Landfill Site)
Pemberton Township, New Jersey

(27

Service:	Army
Size:	32,600 Acres
HRS Score:	37.40
Base Mission:	Army Reserve and National Guard training and combat support
IAG Status:	Effective date September 27, 1991
Action Dates:	RI/FS initiated 1985; Placed on NPL 1987; PA/SI completed 1989
Contaminants:	VOCs, heavy metals, petroleum/oil/lubricants, solvents, photographic chemicals, pesticides, herbicides, medical wastes
Funding to Date:	$3.77 million

Preliminary Assessment/ Site Inspection (PA/SI)

During the PA, the Army identified past disposal and/or spill sites potentially contaminated with hazardous waste. The sites were investigated further during the SI. Ground water was found to be contaminated with lead, nickel, cadmium, petroleum hydrocarbons and VOCs (1,1,1-trichloroethane, 1,1,2-TCE, and chloroform). Further investigation is recommended to determine the presence, magnitude, and extent of contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1985 and indicated that a plume of contaminated ground water was emanating from the southwestern portion of the Fort Dix Sanitary Landfill. The contaminants do not appear to be highly concentrated. A geophysical field investigation suggested that the stream and associated surface water bodies act as a hydraulic barrier to suspected contaminant migration. The recommended course of action is to cover the lower 50 acres of the landfill with a low-permeability cap, and to add two feet of final cover to the remaining uncapped portion. A long-term (30-year) monitoring program has been implemented. A phased installation-wide RI is currently underway for the remaining sites.

Remedial Design/ Remedial Action (RD/RA)

A ROD was signed for the landfill site. RD is underway for Phase I. Cap construction is scheduled for FY 1992.

Fort Lewis

(28)

(Landfill #5 and Logistics Center)
Tacoma and Tillicum, Washington

Service: Army

Size: 86,541 Acres

HRS Score: 33.79 (Landfill)
35.48 (Logistics Center)

Base Mission: I Corps Headquarters - plans and executes Pacific, NATO, or other contingencies; Troop training; Airfield; Medical Center; Logistics for supplies and maintenance.

IAG Status: Pre-ROD IAG signed January 1990

Action Dates: PA completed 1984; Landfill 5 placed on NPL 1987; RI/FS initiated 1988; Logistics Center placed on NPL 1989; RI/FS completed in May 1990; ROD signed September 1990

Contaminants: Spent solvents, metal plating wastes, pesticides, PCBs, waste oils and fuels, VOCs, asbestos, coal liquefication wastes, polycyclic aromatic hydrocarbons, paint, battery electrolytes, metals, paint strippers and thinners

Funding to Date: $11.17 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA investigation revealed several potentially contaminated areas. SIs have been completed at Park Marsh Landfill (used previously by the Veterans Administration), Landfill 5, and the Logistics Center. Preliminary results at Park Marsh Landfill detected PCBs and pesticides in the sediments. Landfill 5 and the Logistics Center showed ground water contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

A RI/FS for the Logistics Center was completed in May 1990. The primary ground water contaminants at the Logistics Center are solvents, trichloroethylene (TCE) and cis-1,2-dichloroethylene (DCE). In general, the ground water contamination moves off-post from the Logistics Center toward the town of Tillicum.

An RI/FS began at Landfill 5 in 1988. The primary ground water contaminants at Landfill 5 are iron, manganese, benzene, TCE and vinyl chloride. The RI and the human health and ecological risk assessments will be completed in December 1991. The contaminant levels have been decreasing since the installation of the landfill cap and are predicted to continue to decrease to levels that do not suggest risks to human health and the environment. A ROD is scheduled for Spring 1992.

Remedial Design/ Remedial Action (RD/RA)

Based on the ROD, the cleanup plan for the Logistics Center is to pump and treat the ground water. The RD is conducted in two phases. Phase I includes the installation of the well fields. Phase II includes the design and installation of the treatment plant, pumps, piping and other associated equipment. Phase I pilot wells were installed, and pumping tests were completed in the summer of 1991. Installation of the Phase I well field is scheduled for early 1992. Phase II design will follow quickly behind with RA scheduled for late 1992.

The ROD also includes monitoring and soil sampling to ensure that all remaining sources of soil contamination have been identified and characterized.

Fort Ord
Marina, California

(29)

Service:	Army
Size:	29,598 Acres
HRS Score:	42.24
Base Mission:	Home of the 7th Infantry Division (Light)
IAG Status:	Pre-ROD IAG signed July 1990
Action Dates:	PA/SI completed 1990; RI/FS for landfills initiated 1989; Installation-wide RI/FS initiated 1990; RD/RA initiated 1988; Placed on NPL 1990
Contaminants:	Petroleum wastes, VOAs
Funding to Date:	$14.12 million

Preliminary Assessment/ Site Inspection (PA/SI)

A preliminary hydrogeological investigation (PHI) completed in 1987 identified the sanitary landfills as a possible source of contamination for the City of Marina's backup supply well. This investigation determined also that other installation supply wells were a potential conduit for contamination between aquifers.

PA/SIs completed in 1990 identified contaminants including petroleum wastes and VOAs. These sites include sewage treatment plants, motor pools, AAFES Dry Cleaner and Gas Station, old DRMO and DEH yards, a practice fire drill pit, and EOD range areas. In addition, the location of numerous underground storage tanks have been identified.

Remedial Investigation/ Feasibility Study (RI/FS)

The landfills' RI/FS was initiated in 1989. Eleven monitoring wells were installed to supplement the 13 PHI wells, and four sets of samples have been taken. This site is one of two operable units in the IAG.

During the literature search and interview process conducted as part of the base-wide RI/FS, several new sites were identified. Further investigation of these sites was initiated in September 1991.

Remedial Design/ Remedial Action (RD/RA)

A ground water/soil treatment system at the Fritzche Army Air Field has been operating since 1988. One hundred percent of the contaminated soil has been cleaned and removed. Ground water at this site should be cleaned by 1995. An interim remedial action project to close the 10 installation wells identified as conduits for contamination was completed in 1990.

Fort Riley
Junction City, Kansas

(30)

Service: Army

Size: 150 Square Miles

HRS Score: 33.79

Base Mission: Develop, train and maintain the 1st Infantry Division (Mechanized)

IAG Status: Docket No. VII-90-F-0015, signed 28 February 1991

Action Dates: Placed on NPL 28 June 1991

Contaminants: Tetrachloroethane, mercury waste, pesticides wastewaters, acetone, methylene chloride, carbon tetrachloride

Funding to Date: $4.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI focused on past and current usage of toxic and hazardous materials, and their potential to migrate off the installation. The PA/SI determined that toxic and hazardous wastes (primarily waste oils and degreasing solvents) were formerly (mid-1960s to 1970) disposed of in the landfill southwest of Camp Funston. The landfill has been investigated and was closed in accordance with the State of Kansas regulations. Limited hydrogeological and water quality data indicate that contaminants are not migrating at significant rates from the landfill. The area around Fort Riley is predominantly rural and agricultural. The Fort incorporates seven landfills, numerous motor pools, burn and firefighting pit areas, hospitals, dry cleaning shops, and pesticide storage and mixing areas. The sanitary landfills at Camp Funston and the Main Post (cleaning solvents and pesticide residues) are suspected potential sources of contamination at Fort Riley. A PA/SI will be conducted to determine the presence or absence of contamination associated with operating practices at the former Dry Cleaning Facility (Bldg. 180).

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in 1991 to determine the nature and extent of contamination caused by the discharge of waste and rinsewater from mixing operations at the Pesticide Storage and Preparation Facility and at the Southwest Funston Landfill.

The object of this project is to investigate and determine the nature and extent of environmental contamination at the Southwest Funston Landfill.

The findings and recommendations associated with these investigations will be incorporated in a Remedial Investigation report prepared for each site. Completion is expected in 1993.

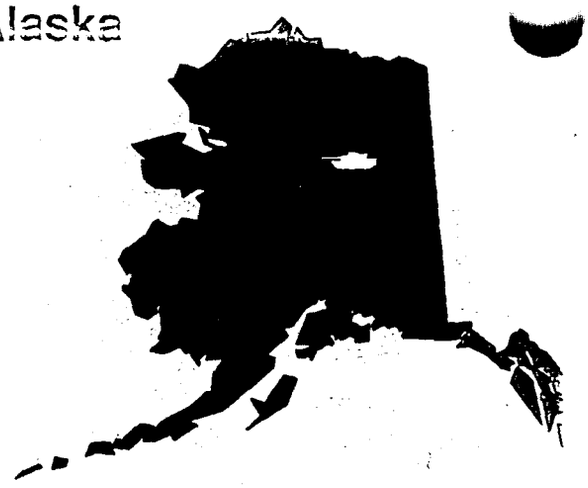
Remedial Design/ Remedial Action (RD/RA)

Thirty-eight abandoned USTs and ancillary equipment were removed in 1990. Additional UST assessment/remediation projects are currently underway. Final remedial actions will begin after completion of the RI/FS.

Fort Wainwright

(31)

Fairbanks North Star Borough, Alaska



Service: Army

Size: 917,993 Acres

HRS Score: 42.4

Base Mission: Headquarters of the 6th Infantry Division (Light)

IAG Status: Initiated and expected to be signed November 1991

Action Dates: PA/SI completed 1983; Placed on NPL 1990; RI/FS initiated 1989

Contaminants: Petroleum/oil/lubricants, heavy metals, solvents, pesticides, paints

Funding to Date: $4.15 million

Preliminary Assessment/ Site Inspection (PA/SI)

An Army assessment completed in 1981 and subsequent facility assessments have identified 41 potential source areas in addition to numerous potential POL sources at Fort Wainwright. Most sites were used for past disposal of waste oils and solvents. These sites include a 40-acre landfill where POL, solvents and paints were disposed; Fire Training pits with POL and solvent contamination; drum burial sites, a chemical agent burial site, leaking underground storage tanks that have affected the water table; and motorpools.

Remedial Investigation/ Feasibility Study (RI/FS)

Environmental investigation activities including field work and compilation of existing data have occurred at various sites. These sites include the North Post Site, the landfill, Nike Sites B and C, and an abandoned tank farm.

A Draft Federal Facility Agreement (FFA) has divided Fort Wainwright into five operable units. Each operable unit will have an RI/FS. The first RI/FS operable unit will include the Landfill, Power Plant Coal Storage Yard, and Fire Training Pits. It is scheduled to begin in 1992 with a draft ROD scheduled in FY 1995. Other activities planned in 1992 include a comprehensive ground water investigation.

Remedial Design/ Remedial Action (RD/RA)

Forty-eight leaking or abandoned underground storage tanks have been removed since 1988. Contaminated soil around these tanks has been removed and stockpiled awaiting disposal. An abandoned pesticide hut was removed in 1991. Soil removal around a petroleum pipeline break is anticipated to begin in the spring of 1992.

Additional RD/RA work will begin after completion of RI/FS activities.

George Air Force Base

(32)

Victorville, California

Service: Air Force

Size: 5,347 Acres

HRS Score: 33.62

Base Mission: Tactical fighter operations; Train aircraft and maintenance personnel; Maintain aircraft and ground support

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1986; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: Petroleum/oil/lubricants, VOCs, heavy metals

Funding to Date: $13.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

During a PA/SI, the Air Force identified several potentially contaminated areas. These sites include the Waste POL Leach Field, the Fire Training Area, the Hazardous Waste Storage Yard, the STP Percolation Ponds, the Abandoned Waste Fuel Dry Well, the Southeast Disposal Area, the Northeast Disposal Area, and the Industrial/Storm Drain. These sites were investigated further in 1986 and 1988 under the IRP.

Remedial Investigation/ Feasibility Study (RI/FS)

RI field studies were conducted in 1986 and 1988. Results indicate POL, VOC, and heavy metal contamination of soils in several areas, and TCE and radionuclide contamination of ground water. The radioactive materials are believed to be naturally occurring within the region. Ground water monitoring is being conducted to confirm previous findings.

The sites at George AFB have been combined into three operable units (OU). RIs and FSs for these OUs are continuing and are planned for completion in mid 1993.

Remedial Design/ Remedial Action (RD/RA)

The treatment system for the Northeast Disposal Area was constructed in 1990. The RA consists of extracting the TCE-contaminated ground water and treating it by using air stripping. The industrial storm drain was cleaned and removed in 1991. Removal of JP-4 pure product from ground water at several locations near the flightline will commence in March 1992. Removal of underground storage tanks and surrounding contaminated soils is ongoing.

Griffiss Air Force Base
Rome, New York

(33)

Service:	Air Force
Size:	5,836 Acres
HRS Score:	34.20
Base Mission:	Air refueling operations; Long-range bombardment
IAG Status:	Pre-ROD IAG signed 1990
Action Dates:	PA/SI completed 1981; Placed on NPL 1987; RI/FS scheduled for initiation 1991
Contaminants:	VOCs, heavy metals, greases, degreasers/caustic cleaners, dyes, penetrants, solvents
Funding to Date:	$37.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Mohawk River borders the base on the west and south. A PA/SI identified sites containing hazardous materials from past disposal activities. Studies detected surface contamination at the Tank Farm and potential ground water contamination from dry wells and a lindane spill.

Remedial Investigation/ Feasibility Study (RI/FS)

Confirmation studies began in October 1987. Initial studies detected contaminated ground water in a limited area near Landfill 1; PCB-contaminated soils at Building 112; fuel product contamination of soils and ground water at the Tank Farm; heavy metal contamination of soils in the Battery Disposal Pits; and VOC contamination of ground water at Landfill 7.

The RI/FS work plan was submitted to EPA and the State of New York in 1991. The RI/FS began in 1991 and is scheduled for completion in late 1992. All off-base areas containing wells that have been contaminated with glycols are proposed for inclusion in the RI/FS.

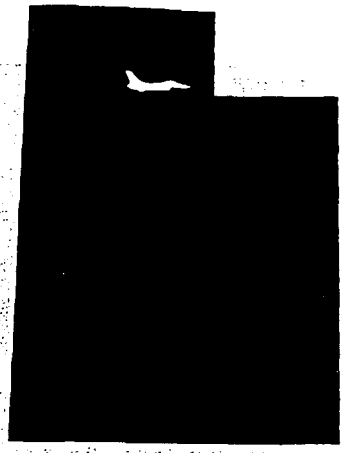
Remedial Design/ Remedial Action (RD/RA)

Several interim remedial actions have been taken on base. In 1985-86, contaminated soil was removed from several IRP sites. Several USTs were removed from the Tank Farm and contaminated soil was removed from the Battery Acid Disposal Pits in 1987. Additional USTs were removed in 1988. RAs in 1989 included modifications to a landfill cap and the removal of several USTs. Contaminated soil from an area adjacent to an aircraft nosedock was removed in late 1990.

Construction on an off-base water distribution to replace the impacted private domestic wells was completed in 1991. Remedial actions planned for 1992 include building 110 USTs, removing contaminated soil, and designing landfills #2 and #9.

Hill Air Force Base
Ogden, Utah

(34)



Service:	Air Force
Size:	6,666 Acres
HRS Score:	49.94
Base Mission:	Logistics for weapons systems
IAG Status:	Pre-ROD IAG signed April 1991
Action Dates:	RI/FS initiated 1985; Placed on NPL 1987; PA/SI ongoing
Contaminants:	VOCs, sulfuric and chromic acids, solvents, petroleum wastes
Funding to Date:	$22.63 million

Preliminary Assessment/ Site Inspection (PA/SI)

The IRP includes investigation and cleanup activity at 36 sites on base, seven Air Force sites off-base, and two private off-base sites. Of the 36 on-base sites, 29 are grouped into seven geographic areas (operable units).

Operable Unit 1 contains Landfills #3 and #4 and the fire training area. Pollutants in these sites include industrial waste water treatment plant sludges, liquid chemicals (primarily hydrocarbons and chlorinated solvents), and other hazardous and municipal wastes. Operable Unit 2 includes chemical disposal pit #3, which received TCE and other solvents and sludges and ranks as one of the most highly contaminated sites in the Air Force. Operable Unit 3 comprises Berman Pond, several USTs that leaked solvents and sodium hydroxide, and drying beds for industrial wastewater treatment plant sludges. Operable Unit 4 consists of Landfills #1 and #2. Although no hazardous waste has been detected, TCE was dumped along a road near these sites. Operable Unit 5 is the Tooele Army Rail Shop area and is contaminated by paint stripping and other industrial activities. Operable Unit 6 includes Building 1915, the site of missile fuel pack maintenance, suspected as a source of TCE. No contamination has been detected at the waste asphalt dump. Operable Unit 7 includes three sites of chromium contamination, two at Building 225 and one at Building 220.

The Air Force sites off-base include two landfills, Chemical Disposal Pit #4, an herbicide orange test-site, the Utah Test and Training Range (UTTR), and the Little Mountain Test Annex industrial sludge disposal site. Landfill #5 received hazardous waste, while the other landfill received municipal trash. Chemical Disposal Pit #4 primarily received petroleum hydrocarbons. The herbicide-orange test-site was found to be uncontaminated. The UTTR site received wastes from burning ordnance and rocket motors. The Little Mountain site holds a concrete-lined sludge bed containing wastewater treatment plant sludges.

A private site off-base on Layton Ranch received chromium-contaminated soil from Hill AFB. The contamination has been removed and the site is undergoing RCRA clean closure. A second private off-base site contains agricultural field drains contaminated with low levels of TCE (20 ppb), possibly from Hill AFB. Assessment of the health risks is being planned.

The initial PA for Hill AFB was completed in 1982. Subsequent SIs were conducted in 1984 and 1986-87. Fourteen sites at Hill AFB, two UTTR sites, and one site at Little Mountain were evaluated. As a result, Hill AFB was placed on the NPL in July 1987 with 12 sites grouped into 5 operable units. The UTTR and Little Mountain sites were not placed on the NPL.

Since NPL placement, additional Hill AFB and UTTR sites have been identified. Currently, 21 Hill AFB and three UTTR sites are in various stages of RI/FS studies.

Hill Air Force Base
Ogden, Utah

(Continued)

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS was initiated in March 1985. The five operable units at Hill AFB are in various stages of RI/FS study. All operable units experience contaminant migrating off-base through the shallow ground water. The deeper drinking water aquifer does not seem to be affected. Two stormwater retention ponds and the Little Mountain sludge drying bed also are being studied.

The RI/FS for Operable Unit 1 has identified chromium and at least 14 VOCs in ground water, including chlorinated-ethenes, ethanes, benzene, methyl ethyl ketone, toluene and vinyl chloride. Low levels of these contaminants are migrating off-base.

The RI/FS for Operable Unit 2 has detected nine dense non-aqueous phase liquid (DNAPL) contaminants, of which TCE is the most prevalent at 1,700,000 ppb. Off-base contamination was discovered in the shallow aquifer. RI/FS studies have included pump tests and treatability analysis. An interim remedial action ROD for source recovery of the DNAPL has been signed.

The RI/FS for Operable Unit 3 found five VOCs, cadmium and lead in shallow ground water. The contaminants may have migrated off-base to the Layton Ranch field drains.

The RI/FS for Operable Unit 4 found four VOCs in shallow ground water. Contaminant distribution patterns indicate roadside dumping was responsible rather than landfill deposits.

The RI/FS for Operable Unit 5 began in the summer of 1989. No contamination was found in on-base shallow ground water, but five VOCs were detected in soil gas. Four of these five chemicals have been detected off-base in a spring, but concentrations are within or just above drinking water standards. Hill AFB is monitoring the spring water.

Operable Unit 6 has completed its site evaluation. The report is due in January 1992.

Operable Unit 7 will begin a RCRA monitoring program on the Building 220 site. The site evaluation for the Building 225 chromium site is currently under regulatory review. The other Building 225 site has had some contamination removed. The results have been submitted to the EPA's PCB office. Chromium-contaminated soil from Building 225 accidentally dumped on a ranch in Layton has been removed and the site declared clean.

The RI is complete for the Little Mountain sludge beds. Contaminants, predominantly phenol and heavy metals, have not migrated beyond the ditch behind the beds. An RD/RA is planned to remove the contaminated soils to a RCRA TSD facility in FY 1992.

RODs should be signed in 1993, completing the RI/FS process. A pre-ROD IAG was signed in April 1991.

Remedial Design/ Remedial Action (RD/RA)

On-base, Hill AFB has initiated remedial actions at Operable Units 1, 2, and 3, as well as at three other sites.

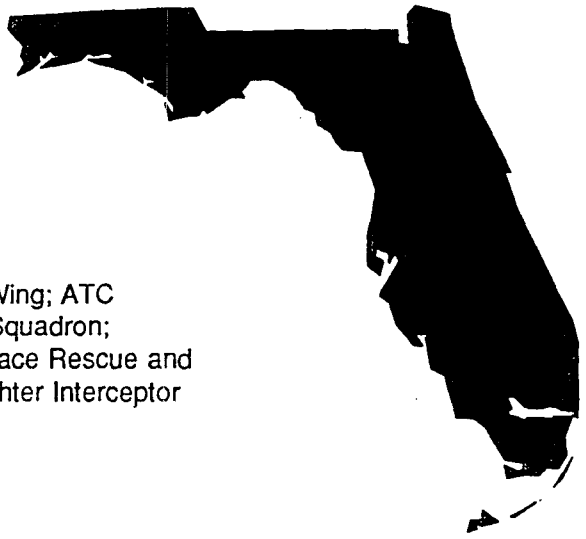
IRAs at Operable Unit 1 were performed to lessen off-base contaminant migration. Hill AFB capped 70 acres of landfill, extracted and treated contaminated ground water from seven wells and two infiltration galleries, and installed a mile-long bentonite slurry wall. More than 50 million gallons of contaminated ground water have been treated. As a result of these actions, VOC concentrations in off-base seeps decreased 99 percent since 1984.

Off-base, contaminated ground water from Operable Unit 2 has been treated by activated carbon since 1987. Two property owners have been hooked up to municipal wells and supplied with irrigation water. The ROD for interim remedial action was approved in late FY 1991 and remediation will begin in FY 1992. At Operable Unit 3, Berman Pond was capped. In 1989-90, at a JP-4 spill site, soil venting removed 190,000 pounds of fuel. Two old PCB spill sites were excavated and disposed of in 1990.

Homestead Air Force Base

(35)

Homestead, Florida



Service: Air Force

Size: 2,916 Acres

HRS Score: 42.40

Base Mission: Tactical Air Command; F-16 Fighter Wing; ATC sea-survival school; Tactical Control Squadron; Naval Security Group Activity; Aerospace Rescue and Recovery Squadron (AFRES) and Fighter Interceptor Group operations

IAG Status: Pre-ROD IAG signed March 1991

Action Dates: PA/SI completed 1986; RI/FS initiated 1987; Placed on NPL 1990

Contaminants: Metal plating wastes, VOCs, cyanide

Funding to Date: $4.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

The area around Homestead AFB is mostly agricultural. Wastes have been disposed of onsite since the facility opened in 1942. Electroplating operations were conducted onsite, and plating wastes containing heavy metals and cyanides were allegedly disposed of directly on the ground.

The PA/SI identified three major areas of concern: the Fire Protection Training Area, the Residual Pesticide Disposal Area, and the Electroplating Disposal Area.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS was initiated in August 1987 at the Fire Protection Training Area (FPTA), Electroplating Waste Disposal Area, and Residual Pesticide Disposal Area. IRP studies have detected elevated levels of VOCs at FPTA-3. Analytical results from the RI showed ground water contaminant levels of 26 ug/l benzene, 25 ug/l chlorobenzene, and 52 ug/l ethylbenzene. A monitoring well was installed and benzene was detected in the ground water at concentrations which exceed the Florida Primary Drinking Water Standard. Ethyl ether was detected in high concentrations in the shallow and intermediate ground water. Its presence is attributed to the disposal of approximately 5,500 gallons of ethyl ether in January 1984 by the Federal Drug Enforcement Agency and Dade County.

At the Electroplating Waste Disposal Area, additional analysis showed heavy metals in the ground water at concentrations below allowable maximum levels. Cyanide was detected at 24 ug/L in one monitoring well. Concentrations of sealant metal and cyanide were found in soil and sediment samples. The metal concentrations were comparable to those commonly found in the background soils.

From 1977 to 1982, pesticides were sprayed or dumped onto the Residual Pesticide Disposal Area, and chlorine bleach and ammonia were applied to accelerate the decomposition of the pesticide compounds. Analytical results showed low levels of organochlorine insecticides in surface soil samples. No organochlorine pesticides or chlorinated herbicides were detected in the ground water samples.

Additional RI/FS investigations to determine the extent of contamination should begin in 1993.

Remedial Design/ Remedial Action (RD/RA)

An IRA was conducted in 1987 to remove approximately 25 USTs from various IRP sites. Construction of a remedial system for Pumphouse 9 was completed in 1991. The system is currently operating at that site to remove free product contamination.

RD/RA work is expected to begin in 1993.

Iowa Army Ammunition Plant (36)
Middletown, Iowa

Service: Army

Size: 19,127 Acres

HRS Score: 29.73

Base Mission: Load-assemble-pack a variety of conventional munitions and fusing systems

IAG Status: Pre-ROD IAG signed 1990 with EPA

Action Dates: First PA/SI completed 1980; Second PA/SI initiated 1991; RI/FS initiated 1981; Placed on NPL 1990

Contaminants: VOCs, heavy metals, waste solvents, explosives containing sludges

Funding to Date: $6.84 million

Preliminary Assessment/ Site Inspection (PA/SI)

Iowa Army Ammunition Plant (IAAP) is a government-owned/ contractor-operated (GOCO) facility. Although a PA/SI was completed in 1980, an update was initiated in January 1991 to further assess the impact on the environment of the use, storage, treatment, and disposal of toxic and hazardous materials and to define conditions that may adversely affect health and welfare or result in environmental degradation. Forty-three sites were addressed as defined by the IAG. Final results are expected in January 1992.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in February 1981, and a contamination survey was completed in October 1982. Explosives contamination was found in surface and ground waters within the Brush Creek drainage system. The former Line 1 Impoundment and the Pinkwater Lagoon adjacent to Line 800 were identified as sources of contamination. It was determined that RDX was migrating off-site through Brush and Spring Creeks. A follow-on environmental survey completed in August 1984 assessed further the contamination in the Line 1 and Line 800 areas. The endangerment assessment and FS for Lines 1 and 800 were completed in July and August 1989, respectively. A Federal Facilities Compliance Agreement (FFA) between the Army and EPA was signed in April 1988. An RI/FS is scheduled to begin in March 1992.

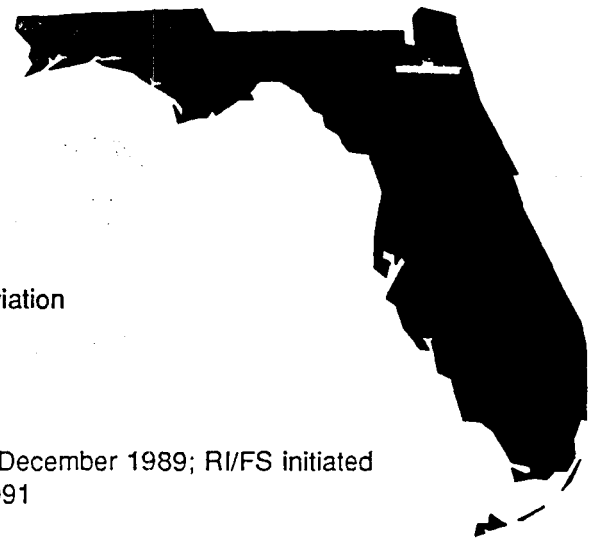
Remedial Design/ Remedial Action (RD/RA)

Closure of the inert landfill Trench 5 was completed in November 1989. Closure of the Line 6 gravel filter bed and the drainage ditch was completed in August 1990.

Jacksonville Naval Air Station

(37)

Jacksonville, Florida



Service: Navy

Size: 3,820 Acres

HRS Score: 32.08

Base Mission: Provide services and materials for aviation activities and aircraft overhaul

IAG Status: Signed October 1990

Action Dates: PA completed 1985; Placed on NPL December 1989; RI/FS initiated 1989; SI scheduled completion for 1991

Contaminants: Heavy metals, petroleum/oil/lubricants, paints, acids and caustic, phenols, waste solvents, radioisotopes and low-level radioactive radium paint wastes, cyanide

Funding to Date: $4.0 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA identified 38 sites on NAS Jacksonville. Four additional sites have been identified and added. The SI investigated 19 sites. A TRC has been organized and held its first meeting in May 1989.

Remedial Investigation/ Feasibility Study (RI/FS)

The Navy projects that a minimum of 13 of the 42 sites will be investigated under an RI/FS. An FFA was signed in October 1990. An RI/FS work plan and project management plan were submitted for review in September 1990. NAS is currently a test site for the development and use of the Tri-service Cone Penetrometer project.

Remedial Design/ Remedial Action (RD/RA)

A Removal Action was completed at Site 27, the PCB Transformer Pad, and another at Site 26, the oil/solvent pits.

Joliet Army Ammunition Plant (38)
(LAP Area and Manufacturing Area)
Joliet, Illinois

Service: Army

Size: 36 Square Miles

HRS Score: 35.23 (LAP area)
32.08 (manufacturing area)

Base Mission: Manufacture and load-assemble-pack (LAP) explosives and explosive-filled munitions

IAG Status: Pre-ROD IAG signed June 1989 with EPA and State of Illinois

Action Dates: PA/SI completed 1978; RI/FS initiated 1981; Manufacturing Area placed on NPL 1987; LAP Area placed on NPL 1989

Contaminants: Munitions-related wastes, VOCs, heavy metals

Funding to Date: $11.63 million

Preliminary Assessment/ Site Inspection (PA/SI)

Joliet Army Ammunition Plant (JAAP), consisting of a Manufacturing Area and a Load-Assemble-Pack (LAP) Area, is a government-owned/contractor-operated (GOCO) facility. Since 1977, the facility has been maintained in standby condition.

The PA/SI identified the potential presence of TNT, DNT, RDS, and tetryl, as well as nitric and sulfuric acids, toluene, and various heavy metals. Past practices may have contaminated ground and surface waters, sediment, and soil.

Remedial Investigation/ Feasibility Study (RI/FS)

Investigative studies have centered mainly on 10 areas within the Manufacturing Area and identified various contaminants in the ground and surface water, sediment, and soil. Additional RI/FS activities under the IAG will address 35 potentially contaminated locales in the LAP Area and eight additional locales in the Manufacturing Area. Contaminants from past operations may have migrated offsite through surface water. No indication of contamination of off-post potable water supplies currently exist at this time. Field work for both the Phase 1 LAP Area and Phase 2 Manufacturing Area is scheduled for completion in November 1991. A final report of these activities is due in May 1992.

Remedial Design/ Remedial Action (RD/RA)

In 1985, more than seven million gallons of explosives-contaminated red water were removed from the Red Water Lagoon and transported offsite for disposal. Explosives-contaminated sludge and the lagoon liner also were removed, and the area was capped with clay.

Two surface impoundments in the Manufacturing Area containing ash from past incineration of explosives were recapped in 1985.

No RD/RA for the LAP Area has been developed to date.

Lake City Army Ammunition Plant (39)
(Northwest Lagoon)
Independence, Missouri

Service:	Army
Size:	3,955 Acres
HRS Score:	33.62
Base Mission:	Manufacture, store, and test small arms ammunition
IAG Status:	Pre-ROD IAG signed September 1989
Action Dates:	PA/SI completed 1979; Placed on NPL 1987; RI/FS initiated 1987
Contaminants:	Oils/greases, heavy metals, solvents, explosives
Funding to Date:	$28.58 million

Preliminary Assessment/ Site Inspection (PA/SI)

Lake City Army Ammunition Plant (LCAAP) has manufactured, stored, and tested small arms ammunition continuously since 1941, except for a 5-year period following World War II. Virtually all waste treatment and disposal has been onsite. LCAAP has relied heavily on lagoons, landfills, and burn pits for waste disposal. Industrial operations have generated large quantities of potentially hazardous waste, including oils/greases, solvents, explosives, and metals.

The Installation Assessment identified numerous waste areas on base, but because of a clay layer in the soil, no testing was recommended. However, a PA/SI identified 73 waste sites containing more than 100 individual units. These units were later consolidated into 34 sites. Field testing was conducted at seven representative areas and ground water contamination (volatile organics, explosives, and heavy metals) was detected at all seven areas. An RI/FS was recommended for the entire site.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1987, and the study confirmed contamination of the ground water above federal and state criteria beneath the entire site. Approximately eight water wells of private residents immediately north of LCAAP have been monitored quarterly since 1987. Low level explosive and volatile organic contamination have been sporadically detected, but levels remain below applicable criteria. Ten additional off-post wells are scheduled to be installed. A Phase 2 RI/FS was initiated in 1989 to determine the extent of ground water contamination and to investigate source locations. A final RI effort is scheduled in 1992 to fill in data gaps from the previous efforts.

Remedial Design/ Remedial Action (RD/RA)

Numerous explosive waste lagoons at LCAAP have been closed since 1986. Air strippers for the drinking water supply wells at the plant were installed in January 1990. Permit applications have been submitted for the other production wells.

Letterkenny Army Depot (40)
(PDO Area and Southeast Area)
Franklin County and Chambersburg, Pennsylvania

Service: Army

Size: 19,511 Acres

HRS Score: 37.51 (PDO Area)
34.21 (SE Area)

Base Mission: Maintain and test tracked vehicles and missiles; Issue chemicals and petroleum; Store, demilitarize, and modify ammunition

IAG Status: Pre-ROD IAG signed February 1989 with EPA and State of Pennsylvania

Action Dates: RI/FS initiated 1982; PA/SI completed 1983; Southeast area placed on NPL 1987; Property Disposal Office Area placed on NPL 1989

Contaminants: Petroleum/oil/lubricants, pesticides, solvents, cleaning agents, metal plating wastes, phenolics, VOCs, painting residues and thinners, explosives

Funding to Date: $16.93 million

Preliminary Assessment/ Site Inspection (PA/SI)

The initial PA/SI included identification of 14 potentially contaminated sites, all targeted for an RI/FS. Significant contamination of ground water by aromatic hydrocarbons and volatile chlorinated hydrocarbons has been found. Elevated levels of contaminants have migrated off-base. An SI was updated for 18 SWMUs during May-July 1990. The SI report was submitted to the EPA and Pennsylvania in March 1991 and is currently being finalized. The SI report recommends further investigation of eight sites.

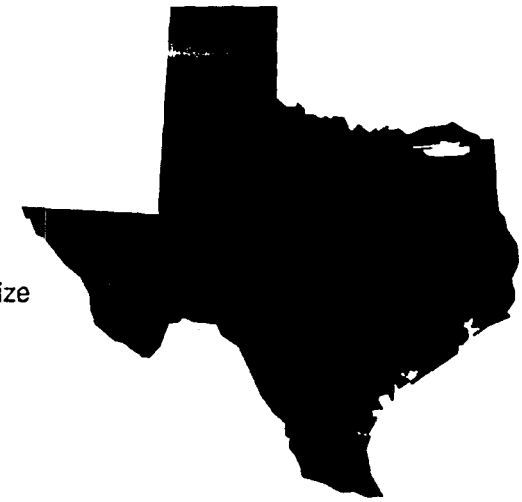
Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS was initiated in June 1982, and confirmed contamination of 11 areas. Ground and surface waters have been contaminated with chlorinated hydrocarbons, chlorinated organic solvents, toluene, and chloroform. Soils have been contaminated by xylene, heavy metals, chloroform, aromatic and chlorinated hydrocarbons, and chlorinated organic solvents. Organic contaminants have migrated beyond depot boundaries in the southeastern area. Additional field work for the RI/FS is currently being conducted to satisfy regulatory requirements noted during review of pre-IAG RI/FS efforts. A dye study is underway to define contaminant flow. The quality of the ground water at the IWTP lagoon is being assessed under RCRA requirements.

Remedial Design/ Remedial Action (RD/RA)

An alternate water system was provided in September 1987. An ISV system was used to determine the ability of the vacuum system to treat soils. This testing indicated limited potential for the ISV unit because of the site characteristics. Low-temperature thermal stripping is being considered for soil remediation. Ground water treatment also will be considered at both NPL sites. Ground water treatment at the former IWTP lagoon area was initiated in June 1989. The interim ground water treatment system was expanded to nine extraction wells in December 1990. The contract for closure of the lagoon has been awarded, and the closure plan has been approved. Remediation is planned to begin in December 1991. In 1990, approximately 25,00 cubic feet of soils were removed from the Old Fire Training Area. Records of Decision (ROD) were signed in June 1991 for the SE Area, K-Areas, the PPO Area Drum Revetments, and the oil burn pit.

Lone Star Army Ammunition Plant (41)
Texarkana, Texas



Service: Army

Size: 15,546 Acres

HRS Score: 31.85

Base Mission: Load-Assemble-Pack, renovate, and demilitarize ammunition and explosives

IAG Status: Pre-ROD IAG signed June 1990

Action Dates: PA/SI completed 1978; Placed on NPL 1987; RI/FS initiated 1987

Contaminants: Munitions-related wastes, heavy metals, petroleum/oil/lubricants

Funding to Date: $4.39 million

Preliminary Assessment/ Site Inspection (PA/SI)

Lone Star AAP is a GOCO plant that employs approximately 2,000 people. Past disposal practices included burial of drummed and undrummed wastes in landfills, wells, and cisterns; disposal of explosives in a demolition area, black powder dump, and burning ground; and the discharge of wastes to chemical sludge ponds, settling pits, unlined pinkwater lagoons, and neutralization ponds. Potential ground water contaminant migration off post could affect approximately 200 private wells located within two miles of the post and used for potable water purposes.

The PA/SI found nitrobodies and heavy metals in manufacturing, disposal, demolition, and lagoon areas and determined the contaminants could migrate beyond plant boundaries through surface and subsurface waters. A follow-on indepth investigation was recommended to determine if contaminants are migrating off-post.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1987. A contamination survey investigated 17 areas of potential contamination. Heavy metals and/or explosives were discovered in the ground and surface water and surface soils at several sites. Small concentrations of sulfates, chlorides and dieldrin were also detected in the ground water. Additional investigations conducted in 1990 and 1991 have discovered the potential for off-site contaminant migration. New studies to include off site investigation are planned for 1992 as part of RCRA Facility Investigation (RFI).

The pre-ROD IAG was signed in September 1990. Only the NPL site, the Old Demolition Area (ODA), is covered by this agreement. The remaining sites have been listed as SWMUs. There are 145 SWMUs under investigation.

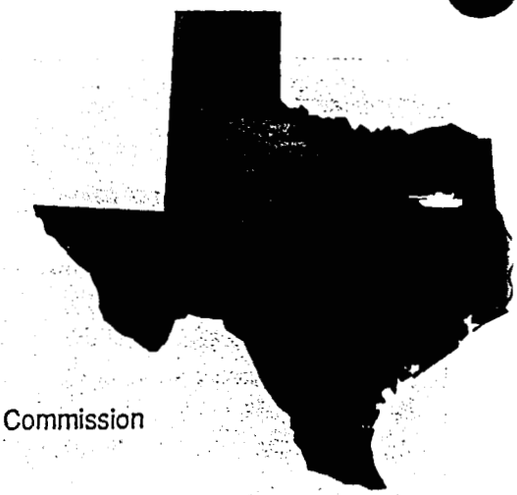
The Federal and state regulators have completed reviewing the RI/FS for the ODA. Additional investigation was recommended. This investigation is scheduled for completion by July 1992.

Remedial Design/ Remedial Action (RD/RA)

Both Chromic Acid (North G Area) and O-Line (South O Area) ponds have been closed and are being monitored. Leaking underground fuel tanks at the installation gas station have been drained and fueling operations have been moved to another location. Tank removal and soil remediation are scheduled to begin in early 1992.

Longhorn Army Ammunition Plant (42)

Karnack, Texas



Service: Army

Size: 8,493 Acres

HRS Score: 39.83

Base Mission: Load-Assemble-Pack pyrotechnic and illuminating/signal munitions and solid propellant rocket motors

IAG Status: Signed by the Army, EPA, and Texas Water Commission in October 1991

Action Dates: PA/SI completed 1980; Placed on NPL 1990; RI/FS initiation 1991; RFA performed 1988; RCRA permit final 1992

Contaminants: Heavy metals, VOCs, munitions-related wastes, petroleum/oil/lubricants

Funding to Date: $1.58 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Longhorn AAP primarily produced 246-TNT flake and acid for munition production during World War II. Flake production ceased and the current mission commenced in 1945.

A PA/SI recommended conducting an environmental survey. A contamination survey and follow-up studies identified contamination of onsite surface and ground water and soils emanating from the Active Burning Ground/Rocket Motor Washout Pond Area, the TNT Production Area, the Flashing Area, the Landfill (old), TNT burial sites, and old Burning Grounds.

An RFA in 1988 identified many of the same sites as SWMUs with a potential for release.

Remedial Investigation/ Feasibility Study (RI/FS)

A preliminary survey confirmed two sources for VOC ground water contamination beneath the Active Burning Ground and identified a third potential source that will require further investigation. The contaminant plume has neither moved significantly in the last 30 years, nor migrated off-post.

The IAG lists 13 areas that will be included in the RI/FS. Investigations at the site will follow CERCLA procedures, but will also incorporate RCRA requirements.

Remedial Design/ Remedial Action (RD/RA)

Capping of the Rocket Motor Washout Pond Area was initiated in 1984. The Texas Water Commission certified the pond clean-closed in 1986.

Loring Air Force Base
Limestone, Maine

(43)

Service:	Air Force
Size:	9,000 Acres
HRS Score:	34.49
Base Mission:	Headquarters to Strategic Air Command's 42nd Bombardment Wing
IAG Status:	Pre-ROD IAG signed January 1991
Action Dates:	PA/SI completed 1984; RI/FS initiated 1986; Placed on NPL 1990
Contaminants:	Waste oils, fuels, spent solvents, PCBs, pesticides, heavy metals
Funding to Date:	$41.95 million

Preliminary Assessment/ Site Inspection (PA/SI)

Historically, wastes have been burned or buried in landfills. Surface water less than three miles downstream is used for recreational activities and a fresh water wetland is 500 feet from Landfill 3.

Remedial Investigation/ Feasibility Study (RI/FS)

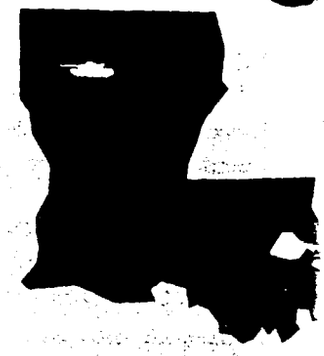
An RI/FS was initiated in October 1986 disclosed that monitoring wells on-base were contaminated with methylene chloride, TCE, carbon tetrachloride, and barium. The wells are on or downgradient from several widely scattered disposal areas. Two areas are old, adjacent gravel pits that were used for landfill and cover 190 acres. Landfill 2 was used for disposal of hazardous wastes from 1956 to 1974, and Landfill 3 saw similar use from 1974 to the early 1980s. In the 0.5-acre Fire Department Training Area, large quantities of hazardous materials were disposed of through landfilling until 1968. From 1968 to 1974, these materials were disposed of by burning. The 600-acre flightline area, with its industrial shops and maintenance hangars, was a primary generator of hazardous waste on-base. While some generated wastes were disposed of on the ground or in storm and sewer drains in the area, most wastes were disposed of elsewhere. Soils in the flightline area also contain significant amounts of fuel, oil, and various VOCs. An estimated 1,200 people obtain drinking water from wells within three miles of hazardous substances on-base. The nearest (non-potable) well is less than 500 feet from the location of buried transformers. According to the 1986 IRP report, water in the flightline drainage ditch, a 2,500-foot portion of a tributary to Greenlaw Creek, is contaminated with methylene chloride, tetrachloroethylene, 1,1-TCA, TCE, and iron. The ditch receives storm water discharges from several sewers draining the flightline area and the nose dock area, both locations where fuels were handled.

Remedial Design/ Remedial Action (RD/RA)

An RA was initiated in 1989. Remedial actions in 1990 included contaminated soil and UST removals. Remedial actions in 1991 included contaminated soil treatment, UST removals, and landfill capping. Remedial Actions for 1992 will involve further contaminated soil treatment and free product removal.

Louisiana Army Ammunition Plant (44)

Doyline, Louisiana



Service: Army

Size: 14,974 Acres

HRS Score: 30.26

Base Mission: Load-Assemble-Pack operations; Manufacture shell metal parts

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1978; RI/FS initiated 1985; Placed on NPL 1989

Contaminants: Oils, grease, degreasers, phosphates, solvents, metal plating sludges, acids, flyash, TNT and RDX explosives

Funding to Date: $38.19 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Louisiana Army Ammunition Plant (LAAP) is owned by the government and is operated by the Thiokol Corporation. LAAP currently employs 1,680 people.

The PA/SI concluded that the explosive loading and disposal areas of the plant were heavily contaminated with explosive wastes, primarily TNT, RDX, and tetryl. In addition, sumps and unlined ponds in the metal parts production area were contaminated with waste from plating and fabrication operations. No explosives were found in the surface water leaving the installation. In addition, no indication of contaminant migration off the installation through ground or surface waters was found. The high potential for future migration of the explosive contamination, however, resulted in a recommendation for a water quality monitoring program.

Remedial Investigation/ Feasibility Study (RI/FS)

The first stage of the RI/FS work consisted of a preliminary contamination survey completed in 1982. The actual RI/FS began 1985 with a follow-on RI completed in 1987. The investigations indicated that no off-post migration had occurred. On-post wells, however, were contaminated with explosives, including TNT, RDX, and HMX. The contaminated ground water had reached the southern boundary, so as part of a follow-on RI, four wells were installed off the southern boundary of the installation in 1988.

Remedial Design/ Remedial Action (RD/RA)

Incineration of explosives-contaminated soil and treatment of contaminated surface water in Area P began in 1987. The incineration of 102,000 tons of soils and the treatment of 50 million gallons of pinkwater was completed in March 1990. Closure activities and revegetation of the site were completed during the fourth quarter of 1990.

A 1989 analysis indicated that the explosives-contaminated ground water had migrated off the southern boundary. Consequently, two 6-month ground water monitoring programs were completed between 1989 and 1991; no contamination was found. Monitoring of these 16 drinking water wells will continue.

Luke Air Force Base
Glendale, Arizona

(45)

Service: Air Force

Size: 4,198 Acres

HRS Score: 37.93

Base Mission: Advanced fighter training

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1985; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: Petroleum/oil/lubricants, VOCs

Funding to Date: $9 million

Preliminary Assessment/ Site Inspection (PA/SI)

Luke AFB is located in the Sonoran Desert and rests on a broad alluvium-filled valley within the western portion of the Phoenix Basin. The PA/SI conducted in 1982 identified a number of potentially contaminated areas, including five sites where hazardous wastes were disposed of. These five sites were subsequently investigated in 1983 and 1986 as part of the IRP. Additional sites were later identified for investigation.

Remedial Investigation/ Feasibility Study (RI/FS)

Two old fire training sites in bermed areas were used to simulate aircraft fire by burning POL wastes. Below surface, soil borings contained elevated levels of oil and grease, and low levels of volatile organics. These findings prompted a pre-design study to determine the extent of contamination and gather the requisite information for conducting a soil vapor extraction pilot study and the subsequent removal action. Three ground water monitoring wells were installed, one presumed to be upgradient and two downgradient. The water table was measured at 360 feet below ground surface. No significant contaminants were detected. In addition, the waste treatment annex landfill was discovered eroding from the banks. An inspection was conducted and stabilization action was executed in March 1991.

Remedial Design/ Remedial Action (RD/RA)

RAs to date include closing a former waste oil and contaminated JP-4 fuel storage site. The subject tanks were removed and the area was capped with concrete. Monitoring wells are in place. In addition, the leaking UST at the base service station was removed. Soil vapor extraction is planned for the North Fire Training Area. A treatability study was completed in January 1991. A bank stabilization project to prevent further erosion of a landfill into the Aqua Fria River was completed in early 1991.

March Air Force Base
Riverside, California

(46)

Service:	Air Force
Size:	7,000 Acres
HRS Score:	31.94
Base Mission:	Aircraft maintenance and repair; Refueling operations; Training activities
IAG Status:	Pre-ROD IAG signed 1990
Action Dates:	PA/SI completed 1984; RI/FS initiated 1986; Placed on NPL 1990
Contaminants:	VOCs, heavy metals
Funding to Date:	$26.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

Soils on March AFB are contaminated with organics and metals and primary ground water contaminants are TCE and perchloroethylene (PCE). An estimated 11,600 people obtain drinking water from municipal wells within three miles of hazardous substances on March AFB. The base also is adjacent to light industrial, agricultural, and residential areas.

As part of the PA/SI, the Air Force investigated 42 potentially contaminated sites. The sites included three fire training areas, seven inactive landfills, underground solvent storage tanks, an engine test cell, and spills. Significant contamination was found at seven sites. Three regions of ground water contamination beneath the base also were identified.

Remedial Investigation/ Feasibility Study (RI/FS)

RI/FS efforts are currently underway. On-base Well No. 1 was contaminated with TCE, tetrachloroethylene, and cis-1,2dichloroethylene at levels that exceed state drinking water standards. Therefore, Well No. 1 was taken out of service. Ground water concentrations range from 170 ppb PCE and 110 ppb TCE on base, to 15 ppb TCE in one off-base private well. The private well owner has been provided with bottled drinking water. An RI/FS status report, completed in 1991, divided March's IRP sites into three operable units (OU) for better tracking and grouping of contaminants. It also provided suggestions and recommendations for ground water monitoring well locations, contaminant tests required and types of treatment procedures and processes to be used for specific contaminants based on site characteristics. Activities will continue in the three operable units according to the basewide work plan developed under the requirements of the pre-ROD IAG.

Remedial Design/ Remedial Action (RD/RA)

Activities supporting system design for removing TCE from ground water at six sites began in 1989. RD/RA activities in 1990 included the removal of the Panero hydrant fueling system, contaminated soil treatment, and pumping and treating free product beneath the removed hydrant fueling system. During 1990 and 1991, activities continued for free product removal and soil treatment at the Panero site. The installation of a ground water treatment system began at Landfill No. 6. Planned RD/RA activities for 1992 include further contaminated soil treatment and free product removal at the Panero site, Swimming Pool Fill (Site 17) and Engine Test Cell (Site 18) RD and RA, and the removal Hawes UST.

Marine Corps Logistic Base
Albany, Georgia

(47)

Service: Navy

Size: 3,327 Acres

HRS Score: 44.65

Base Mission: Supply center; Training center

IAG Status: Signed July 2, 1991

Action Dates: PA/SI completed 1985; Placed on NPL 1989; RI/FS initiated 1989

Contaminants: Waste oil and fuels, solvents, mineral spirits, PCBs, paints and thinners, stripping compounds, DDT, cleaning solutions

Funding to Date: $2.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified eight potential contamination sites, six of which were recommended for confirmation studies. Sites included landfills, a storm sewer and canal, and a leaking drum storage area. Nine sites are being addressed under the SI.

Ten sites have been added following the RFI. Twenty-one sites are being addressed under an RI/FS.

Remedial Investigation/ Feasibility Study (RI/FS)

Phase I of the corrective action RFI was completed for nine sites during 1989. The RFI results will be used for the RI. Old sludge drying beds are currently being corrected under RCRA. A drawdown test was performed on the recovery well that extracts water from the contaminated Upper Ocala Aquifer. A conceptual design was then completed for the recovery system. At the Industrial Waste Treatment Plant (IWTP), quarterly ground water monitoring continues as part of the RCRA corrective action.

The fourth meeting of the TRC was held on October 31, 1991. The Department of the Navy, EPA, and Georgia Environmental Protection Division negotiated and signed an FFA in 1991.

Remedial Design/ Remedial Action (RD/RA)

Five recovery wells have been installed at the IWTP and the old sludge drying beds were capped.

Mather Air Force Base
Sacramento, California

(48)

Service:	Air Force
Size:	5,934 Acres
HRS Score:	28.90
Base Mission:	Electronic Warfare Officer Training; Navigator Training
IAG Status:	Pre-ROD IAG signed 1989 with EPA and State of California
Action Dates:	PA completed 1982; RI/FS initiated 1984; Placed on NPL 1989; SI completed 1990
Contaminants:	Solvents, cleaners, VOCs, plating wastes
Funding to Date:	$33.86 million

Preliminary Assessment/ Site Inspection (PA/SI)

Water quality analyses of drinking water in wells on and near the base indicate the presence of TCE and other solvents in the shallow ground water system. In 1979, drinking water contamination was first discovered when sampling from the production well at the Aircraft Control and Warning (AC&W) area confirmed the presence of TCE. To date, ground water contamination has been confirmed at the AC&W Site, the 7100 Area (southwestern corner of the base), and the West Ditch (western border of the base). Both the 7100 Area and West Ditch are suspected of causing off-base contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

The IRP at Mather AFB is currently being conducted at the AC&W Sites, the Group 2 Sites and the Group 3 Sites. The RI at the AC&W Sites was completed in March 1991, with the FS completed in July 1991. The FS report recommended ground water remediation at the site. A draft Record of Decision (ROD) for the AC&W Sites is due in December 1991.

The RI and the FS included in the Group 2 Sites is underway, with the draft reports due in 1992. It is anticipated many of these sites will not require remediation, but extensive ground water contamination in three areas of the base will likely require ground water removal and treatment.

The RI at the Group 3 Sites has begun, with a draft report due in November 1992. The sites consist mainly of oil/water separators and are expected to require limited if any remediation.

Remedial Design/ Remedial Action (RD/RA)

Bottled water was provided to off-base residents in 1986 while construction of a water line could be completed from the base water supply to the affected residents. In 1989, six residences and a 33-unit trailer park were connected to a local municipal water main.

Remedial Design at the AC&W Site is in progress. Once the ROD is signed, a site remediation schedule will be negotiated and included in the Federal Facility Agreement (FFA). It is expected that construction at the site will be complete in 1993, with treatment of the ground water continuing for at least seven years.

Remedial actions will be required at several other sites. Schedules for remediation will be negotiated after the RODs are signed.

McChord Air Force Base

(49)

(Wash Rack/Treatment Area—WTA)
(American Lake Garden Tract—ALGT)
Tacoma, Washington

Service:	Air Force
Size:	4,616 Acres
HRS Score:	WTA – 42.24 ALGT – 31.94
Base Mission:	Airlift services to troops, cargo, equipment, passengers, and mail
IAG Status:	Pre-ROD IAG signed 1989
Action Dates:	PA/SI completed 1986; RI/FS in ALGT completed 1991; RI/FS in WTA initiated 1990 and ongoing; Agreement with State signed in July 91 for 29 non-NPL sites
Contaminants:	ALGT – Chlorinated solvents; WTA – Fuel constituents; Non-NPL – Fuel, hydraulic fluid, oils, solvents, paints, acids, pesticides, metals
Funding to Date:	$15.4 million

Preliminary Assessment/ Site Inspection (PA/SI)

Almost 500,000 gallons of hazardous substances have been used and disposed of on-base.

The PA identified 62 sites and recommended further action at 34 of them. SIs identified shallow aquifer contamination. The base, and over 10,000 people within three miles of the base, depend upon the aquifers for their drinking water.

The current number of sites is 64 and includes sites with no further action needed, non-NPL sites, sites within two NPL locations, and one "site" to track UST removals.

Remedial Investigation/ Feasibility Study (RI/FS)

The ALGT RI/FS was initiated in May 1987 and completed in March 1991. Low-level concentrations of trichloroethylene migrated in the shallow aquifer to the north and west into the off-base ALGT.

Further RI/FS work was initiated in 1991 for 38 sites.

Remedial Design/ Remedial Action (RD/RA)

RAs were initiated in 1988 to cleanup POL-contaminated soil at Site 63. The ALGT ROD specifies hookups to the new potable water system the Air Force installed in the ALGT in 1986. RD work for a ground water pump and treat system at this site is scheduled to begin in 1992. The RA should begin in 1993 and continue for at least 30 years.

McClellan Air Force Base
Sacramento, California

(50)

Service: Air Force

Size: 2,950 Acres

HRS Score: 57.93

Base Mission: Logistics for aircraft, missile, space, and electronics programs

IAG Status: Pre-ROD IAG signed 1990 with EPA and State of California

Action Dates: RI/FS initiated 1984; Placed on NPL 1987

Contaminants: Organic solvents, metal plating wastes, caustic cleaners/degreasers, paints, waste lubricants, photochemicals, phenols, chloroform, spent acids and bases, PCB-contaminated oils

Funding to Date: $72.78 million

Preliminary Assessment/ Site Inspection (PA/SI)

Since a 1979 Air Force study first detected ground water contamination, several on-base and off-base wells have been closed. Approximately 23,000 people in the area depend on the ground water for domestic and agricultural use. PA/SIs conducted since 1981 have identified a total of 177 sites. The soil and ground water contamination at McClellan AFB are primarily the result of chemical releases from land disposal facilities used for disposal of liquid, sludges, and solid wastes; discharges and accidental spills at various industrial activities and storage areas; and leakage from sumps, underground storage tanks, and industrial waste lines.

Remedial Investigation/ Feasibility Study (RI/FS)

As a management solution for the efficient implementation of the RI/FS, the sites were grouped into eight operable units (OU). A CERCLA work plan was developed to implement the RI/FS at each operable unit. The RI/FS for the entire base is expected to be completed by the year 2002. RI work is underway in Operable Unit B, located in the southwest section of the base. Basewide investigation to define the extent of ground water contamination is also underway. Ground water contamination is primarily in the shallow aquifer 120 feet below ground surface, but has migrated to 390 feet in depth at some locations.

Remedial Design/ Remedial Action (RD/RA)

Several cleanup actions have been completed. The Air Force provided approximately 348 residents with hookups to an alternate water source at a cost of $3.5 million, and a carbon filtration system has been installed for base well #16. Eleven sites have been capped, and ground water extraction systems have been installed at two operable units. The extraction systems are connected to a $3.8 million ground water treatment plant. A contaminated building (Building 666) was dismantled and removed for a cost of $3 million.

In FY 1991, an expedited action was completed near the old Building Site 666 to contain a ground water plume and prevent future degradation of a base water supply well located on the southwest edge of the base. An additional ground water extraction system is planned for installation on the southwest edge of the base during 1992.

Milan Army Ammunition Plant (51)

Milan, Tennessee

Service: Army

Size: 22,544 Acres

HRS Score: 58.15

Base Mission: Load-Assemble-Pack, ship, and demilitarize explosive ordnance

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1978; Placed on NPL 1987; RI/FS initiated 1987

Contaminants: Munitions-related wastes, heavy metals, organic solvents, paints, thinners, acids

Funding to Date: $6.87 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Milan Army Ammunition Plant (MAAP) is a GOCO facility owned by the government and operated by Martin Marietta. MAAP presently employs 1,600 people.

A PA/SI concluded that the demolition areas, wastewater lagoons, burning grounds, draining ditches, and streams were contaminated with explosive wastes in addition to zinc, chromium, iron, sulfates, and phosphates. Of 11 MAAP water supply wells sampled in November 1978, explosive contaminants were found in three wells near the O-Line Lagoon area. These three wells subsequently were taken out of service.

Remedial Investigation/ Feasibility Study (RI/FS)

A two-phase survey completed in 1983 concluded that MAAP ground and surface waters were contaminated with TNT, DNT, and RDX. Contamination was moving toward the plant boundaries; ground and surface waters at the installation boundaries contained mercury at levels exceeding Federal EPA water quality criteria. Ground and surface waters within MAAP contained lead and chromium, but migration studies were inconclusive. The major sources of contamination identified were the O-Line Lagoons, the explosives-burning ground, the ammunition destruction area, and drainage ditches associated with these areas. Regular sampling and analysis of existing wells continue. A formal RI/FS process for the O-Line Lagoons was initiated in 1988. A contract to perform an RI at the O-Line Lagoons, the open burning grounds, and 17 other SWMUs was awarded in April 1989 and completed in July 1991. RDX was detected in the Milan City wells in May 1991 at levels below 2 ppb. Follow-on RI work will be conducted to determine the source and nature of the ground water contamination.

Remedial Design/ Remedial Action (RD/RA)

The O-Line Lagoons were capped and seeded with grass in December 1984. Areas of suspected residual explosive contamination of surface soils were excavated. Additional wells to monitor leaching of contaminants into ground water have been installed. Post-closure maintenance of grounds and fences continues. If necessary, further RD/RA activities will be initiated after the completion of the RI/FS.

Moffett Naval Air Station

Sunnyvale, California

(52)

Service: Navy

Size: 3,919 Acres

HRS Score: 24.49

Base Mission: Training for air/patrol squadrons and antisubmarine warfare; Headquarters for Commander Patrol Wings of Pacific Fleet

IAG Status: Pre-ROD IAG signed as amended in 1990 with EPA and State of California

Action Dates: PA completed 1984; Placed on NPL 1987; RI/FS initiated 1988; SI completed 1989; RI scheduled for completion 1992

Contaminants: Metal plating wastes, PCBs, waste oil and fuels, painting residues, organic solvents, caustics, coolants, pesticides, asbestos, freon, dyes

Funding to Date: $33.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

Approximately 272,000 people depend on wells located within three miles of Moffett Field as sources of drinking water. The estuarine wetlands of San Francisco Bay are adjacent to the base.

A PA/SI identified nine sites as potential contaminant migration sources and eight sites were targeted for an RI/FS. The potential effect of contaminant migration on the regional aquifer system was documented, as was the chlorinated hydrocarbon contamination of a shallow onsite aquifer.

Remedial Investigation/ Feasibility Study (RI/FS)

Nineteen sites currently are being investigated under an RI/FS, including nine identified in the PA/SI and 10 additional sites incorporated as a result of a Cease and Desist Order to Moffett Field by the California Regional Water Quality Control Board. RI/FS work plans were finalized in March and April 1988. The RI has been conducted in two phases. Phase I of the RI started in May 1988 and Phase II began in November 1989. Upon completion of Phase I, sites that have been sufficiently characterized and require no additional Phase II work will be evaluated so that Operable Unit RAs can be conducted.

Remedial Design/ Remedial Action (RD/RA)

A removal action to address leaking tanks and sumps was initiated in 1990. The evaluation and closure of abandoned wells that may be potential conduits for subsurface cross-contamination also were initiated in 1990. A pump-and-treat system design was completed for Site 14 in October 1991 and construction of the system is scheduled for completion in 1992.

Mountain Home Air Force Base

(53)

Mountain Home, Idaho

Service:	Air Force
Size:	9 Square Miles
HRS Score:	57.80
Base Mission:	Tactical Air Command; Tactical Fighter Wing, with F-111A fighter and EF-111A electronic countermeasure operations
IAG Status:	Initiated and expected to be signed 1992
Action Dates:	PA/SI completed 1986; RI/FS initiated 1985; Placed on NPL 1990
Contaminants:	VOCs, petroleum/oil/lubricants, heavy metals
Funding to Date:	$3.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

Mountain Home AFB has been controlled by the Tactical Air Command since 1965. Hazardous materials and wastes have been used and generated at Mountain Home for aircraft maintenance and industrial operations. Prior to 1969, base wastes were disposed of by several then-accepted methods, including incineration and landfilling of solid wastes, discharge of liquid wastes to sanitary sewers, and the use of waste oil for road oiling. The area around the base is primarily agricultural, and wells supporting 6,000 people and land irrigation are three miles from hazardous substances on base.

During the PA/SI, the Air Force identified potentially contaminated areas where POL products, solvents, and pesticides were disposed of. These sites subsequently were investigated in 1985 and 1988 as part of the IRP.

Remedial Investigation/ Feasibility Study (RI/FS)

RI field studies were conducted in 1985 and 1988. The lagoon landfill, where general refuse and POL products were disposed of between 1952 and 1956, is currently the site for the base wastewater lagoon. Monitoring wells installed near the center of the landfill detected lead and cadmium in the ground water. In 1988, soil, surface, and ground water samples were collected and analyzed for metals, volatile and semi-volatile organics, and total petroleum hydrocarbons. Any compounds detected within these media were within MCLs for drinking water. To determine whether any contaminants have reached the interlayers between the lagoon and the water table, monitoring wells have been installed and sampled.

Waste oils, fly ash, solvents, jet fuel, tank cleaning sludge, and possibly 20 drums of DDT were placed in trenches and burned or covered with fill. Soil and ground water samples were analyzed for metals, organics, and petroleum hydrocarbons. Organics and petroleum hydrocarbons were detected in shallow soil samples, but no vertical migration was evident in soils or ground water. Additional efforts have been made to locate and sample additional disposal trenches, including DDT drums. An FS to evaluate remedial action alternatives for the fire training area will be finalized. The USGS is conducting a ground water study in support of the RI/FS to assist with the characterization of the complex ground water system.

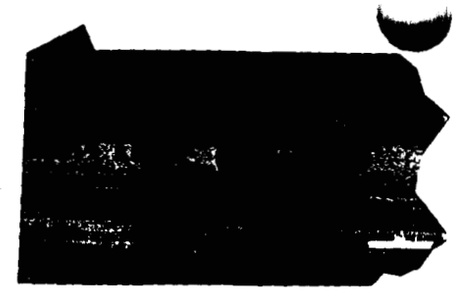
Remedial Design/ Remedial Action (RD/RA)

RD/RA work is planned for 1992 at the fire training area. An IRA is planned at the low-level radioactive waste disposal site to reduce the threat of contaminant migration.

Naval Air Development Center

(54)

Warminster Township, Pennsylvania



Service: Navy

Size: 921 Acres

HRS Score: 57.93

Base Mission: Research and development for naval aircraft systems, antisubmarine warfare systems, and software

IAG Status: Pre-ROD IAG signed 1990

Action Dates: PA/SI completed 1981; Proposed for NPL 1986; RI/FS initiated 1988

Contaminants: VOCs, metal plating wastes, painting residues, PCB-contaminated waste oils, fuels, solvents, asphalt, coolants

Funding to Date: $942,000

Preliminary Assessment/ Site Inspection (PA/SI)

Numerous private and public wells are located within three miles of the installation and provide drinking water for more than 100,000 people. Local surface water is used for recreational and industrial purposes. A PA/SI identified eight sites as potential contaminant migration sources recommended for an RI/FS. Chromium and lead were found in surface waters. Chromium, DCE, and TCE were discovered in onsite wells at levels above EPA water-quality standards. Ground water monitoring continues.

Remedial Investigation/ Feasibility Study (RI/FS)

A TRC has been formed. Eleven TRC meetings have been held since January 1989. The community relations plan was completed and forwarded to EPA in June 1990. The RI/FS work plan was completed in June 1990. Implementation of the work plan began with the collection of first round of samples in October 1990.

Twenty-nine new ground water monitoring wells were installed in November 1990. Ground water sampling from a total of 46 wells at the site was completed in December 1990.

A second round of samples will begin in early FY 1992. A Remedial Investigation (RI) report and Risk Assessment will be developed based on both sets of sampling data. A list of alternative solutions, ending with a feasibility study (FS) is expected by September 1992.

Remedial Design/ Remedial Action (RD/RA)

Remediation of underground storage tanks was conducted during 1989 and 1990. Initiation of RD/RA work is expected in 1993.

Naval Air Engineering Center
Lakehurst, New Jersey

(55)

Service: Navy

Size: 7,382 Acres

HRS Score: 50.53

Base Mission: Develop and test weapons systems

IAG Status: Pre-ROD IAG signed 1989 with EPA

Action Dates: PA/SI completed 1983; Placed on NPL 1987; RI/FS initiated 1987; RI Phase II completed 1990

Contaminants: Waste oils and fuels, solvents, degreasers, paints, paint residues, photographic chemicals, acids, PCBs, pesticides, herbicides, refrigerants

Funding to Date: $10.4 million

Preliminary Assessment/ Site Inspection (PA/SI)

An extensive, environmentally sensitive pineland preservation that supports recreational, wildlife, and agricultural uses surrounds Lakehurst Naval Air Engineering Center (NAEC). Nearby communities use a shallow aquifer adjacent to the base for drinking water.

A PA/SI identified 45 potentially contaminated sites, and an RI/FS is considering 43 of these sites.

Remedial Investigation/ Feasibility Study (RI/FS)

Completed RI/FS field work confirmed contamination at several sites, although analysis of potable well water showed no evidence of contamination. A final report was completed in July 1990. In addition, initial screening under the FS for 16 priority sites continues. Aquifer characterization was conducted in 1990.

Sites were grouped into six "categories" to expedite remediation. Several categories are in the "Interim Remedial Action" (IRA) phase, consisting of pump and treat systems, while others have had Records of Decision (RODs) signed, indicating no further action. These IRA sites, as well as the remaining sites, will continue through Phase III field investigations and reports starting October 1991. Completion of this phase of the work is scheduled for February 1992.

A TRC has been formed. Members include EPA Region II; New Jersey Department of Environmental Protection; New Jersey Pineland Commission; Ocean County Health Department; Town of Manchester; Town of Jackson; Township of Plumstead; Borough of Lakehurst; NAEC Lakehurst; and Northern Division, Naval Facilities Engineering Command.

Remedial Design/ Remedial Action (RD/RA)

Ground water treatment has been initiated in 1990 and is expected to continue in 1992. Additional RD/RA work is expected over the next several years. A ROD covering all sites is scheduled for completion in January 1993.

Naval Air Station, Whidbey Island (56)

(Ault Field & Sea Plane Base)
Whidbey Island, Washington

Service:	Navy
Size:	7,000 Acres
HRS Score:	47.58 (Ault Field) 39.64 (Sea Plane Base)
Base Mission:	Provide services and materials for aviation operations
IAG Status:	Pre-ROD IAG signed September 1990
Action Dates:	PA/SI completed 1984; Placed on NPL 1990; RI/FS initiated 1988
Contaminants:	VOCs, petroleum/oil/lubricants
Funding to Date:	$14.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

Ground water is used extensively for water supply throughout much of Whidbey Island. Contaminant migration could occur through ground and surface waters.

A PA/SI identified 51 past spill and/or disposal sites, with 39 sites targeted for an RI/FS. A Current Situation Report completed in January 1988 determined that surface water runoff may have contaminated sediment and biota in near-shore areas around the island, and that contaminants from several sites could migrate in ground water. An accelerated initial investigation completed in September 1989 at the Site 6 Landfill found chlorinated solvents in the shallow aquifer. The contaminants appear to have migrated just beyond the edge of government property. Private wells tested around the property in 1989 were unaffected by the landfill contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

The FFA signed September 17, 1990, groups the 39 RI/FS sites into five operable units to be investigated and remediated in phases. A TRC has been formed with representatives of NAS, Whidbey Island; Engineering Field Activity Northwest, Naval Facilities Engineering Command; EPA Region X; ATSDR; State of Washington Department of Ecology; Island County Emergency Services; Citizens Ground Water Advisory Committee; Oak Harbor Citizens; and Navy contractors.

RI/FS work at three of the operable units was funded in 1991. It will involve well installation, sample collection and analysis, and completion of the RI/FS report for these operable units.

Remedial Design/ Remedial Action (RD/RA)

Remediation of underground storage tanks was conducted during 1990 and 1991. An IRA at the Site 6 landfill is being planned. Initiation of RD/RA work is expected in 1993.

Naval Industrial Reserve Ordnance Plant

(57)

Fridley, Minnesota

Service:	Navy
Size:	83 Acres
HRS Score:	30.83
Base Mission:	Design and manufacture advanced weapons systems
IAG Status:	Signed March 1991
Action Dates:	PA/SI completed 1988; RI/FS initiated 1988; Placed on NPL November 1989; Record of Decision for ground water remediation September 1990
Contaminants:	Heavy metals, VOCs, petroleum/oil/lubricants
Funding to Date:	$6.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

The northern portion of the Naval Industrial Reserve Ordnance Plant (NIROP) is government-owned, but operated by a private contractor (FMC). The remainder of the facility is owned independently by FMC. Highly permeable sands, conducive to the downward migration of contaminants, lie below the facility. Underlying these sands, the potable water in aquifers is susceptible to contamination. These aquifers, in turn, discharge into the Mississippi River, which supplies the potable water for Minneapolis. The water supply intake for Minneapolis is located approximately one mile downstream from the NIROP.

Three sites identified as potential contaminant migration sources were recommended for an RI/FS. A series of investigations performed between November 1983 and June 1988 identified TCE in the ground water. The plant discontinued using TCE during the first quarter of 1987. NIROP was listed on the NPL in November 1987.

Remedial Investigation/ Feasibility Study (RI/FS)

A TRC has been formed. Members include EPA Region V; Northern Division, Naval Facilities Engineering Command; Minnesota Pollution Control Agency; USACE, Omaha District; County of Anoke; City of Fridley; FMC, Inc.; MWCC; and NIROP Fridley. A three-party Federal Facilities Agreement between the Navy, EPA and the State of Minnesota was signed in March 1991.

Remedial Design/ Remedial Action (RD/RA)

Interim Removal Action involved removal and disposal of 1,200 cubic yards of soil and 43 drums containing PCB wastes, flammable solids, and base solids. This effort, initiated in 1983, was completed in 1984 at a cost of $733,000.

The Navy recommended and EPA and the Minnesota Pollution Control Agency approved, installation of a treatment and disposal system for ground water. A ROD for ground water remediation was issued in September 1990.

The RD for the first phase of cleanup was completed in 1991. The RA is scheduled to begin in early 1992 with the construction of drawdown wells and piping to remove contamination from the ground water.

Naval Security Group Activity (58)
Sabana Seca, Puerto Rico

Service: Navy

Size: 2,252 Acres

HRS Score: 34.28

Base Mission: Operation of High Frequency Direction Finding Facility

IAG Status: Negotiated and expected to be signed early 1992

Action Dates: PA/SI completed 1988 for Sites 4, 6 and 7; PA/SI initiated 1991 for sites 1, 2 and 3; RI/FS initiated 1988 for sites 4, 6 and 7; Placed on NPL 1990

Contaminants: Pesticides, herbicides, paints, oils, solvents

Funding to Date: $1.2 million

Preliminary Assessment/ Site Inspection (PA/SI)

Past disposal methods in landfills created the potential for soil and ground water contamination. Ground water is the potable water supply for the base. Spillage of herbicides and pesticides, and the rinsing of application equipment, have contaminated the areas adjacent to the pesticide shop. Sightings of endangered wildlife have been reported in numerous locations.

A PA identified seven potentially contaminated sites. Originally, only two sites, the former pesticide shop (Site 6) and the leachate ponding area (Site 7), were recommended for an SI. The source of the leachate at Site 7 is the municipal landfill adjacent to the Station boundary. The pistol range disposal area's (Site 4) proximity to Site 7, and recent information on Bunker 607 disposal area (Site 2) mandated that an SI be conducted. As a precautionary measure, SIs shall be conducted at the South and North Stone Road Disposal Areas (Sites 1 and 3). Since Wenger Road Disposal Area (Site 5) was cleaned up in 1984, no further studies will be required. The PA/SI has been completed for Sites 4, 6, and 7. The PA/SI for Sites 1, 2 and 3 is expected to be completed in 1992.

Remedial Investigation/ Feasibility Study (RI/FS)

Sample analyses indicate that soils are contaminated at Site 6, the Former Pest Control Shop, but no ground water contamination has been detected at this site. The leachate contamination at Site 7 originates at an offsite source (the municipal landfill). However, its inclusion in the scope of the RI/FS is a precautionary measure to protect the base water supply. The Navy will continue to pursue legal avenues with regard to the migration of contamination onto the Station. Additional rounds of sampling for Sites 4, 6, and 7 are expected to be conducted during 1991-2 to complete the RI and begin the FS. Depending upon the results from the SI at Sites 1, 2 and 3, any one or all sites may be recommended for RI/FS work efforts.

A TRC held its first meeting in January 1989. Several meetings were held during 1990 when the documentation for Site 6 had been completed. Several meetings will be held throughout the life of this project.

Remedial Design/ Remedial Action (RD/RA)

In 1988, the Navy installed a fence around the Former Pest Control Shop (Site 6) and covered the site with 6 inches of soil to prevent human exposure to spilled pesticides. RD/RA work will begin after completion of RI/FS activities.

Naval Undersea Warfare Engineering Station (59)

Keyport, Washington

Service: Navy

Size: 4,959 Acres

HRS Score: 32.61

Base Mission: Prove, overhaul, and issue torpedoes

IAG Status: Pre-ROD IAG signed July 1990

Action Dates: PA/SI completed 1984; RI/FS initiated 1985; Placed on NPL October 1989

Contaminants: Metal plating wastes, solvents, cleaners/degreasers, paint residues, thinners, strippers, waste oils and fuels, acids and caustics, dyes, contaminated fuel solids and rinsewaters, pesticides

Funding to Date: $8.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified nine sites as potential contaminant migration sources. Six sites were identified for further study. The study concluded that past disposal practices may have contaminated portions of a shallow aquifer and adjacent marsh. Potential offsite contamination of bay and marsh sediments may impact the marine environment.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS currently underway should be completed in 1992. Marine sampling of water, sediment, and shellfish tissue was completed in 1989. Land-based sampling consisting of soil, gas, air, surface, and ground water began in April 1990.

Remedial Design/ Remedial Action (RD/RA)

Initiation of RD/RA work is expected to begin in 1992.

Naval Weapons Station, Earle (Site A) (60)

Colts Neck, New Jersey

Service:	Navy
Size:	11,134 Acres
HRS Score:	37.21
Base Mission:	Ammunition, logistics and administrative support for home-ported ships
IAG Status:	Signed February 16, 1991; Effective May 16, 1991
Action Dates:	Placed on NPL August 1990; PA/SI completed 1986; RI/FS initiated 1988
Contaminants:	Heavy metals, petroleum/oils/lubricants, organic solvents, degreasers, paint residues, corrosive acids
Funding to Date:	$1.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

Both the ground water system beneath the Colts Neck facility and the surrounding surface waters are used extensively by public and private interests. Runoff from any on-base contamination threatens public health and the environment.

A PA identified 29 potentially contaminated sites, and an SI was completed in 1986 for two explosive ordnance disposal sites, five landfills, two paint chip disposal sites, an air pollution control residue spill site, and an explosive washout area. An SI for 16 of the remaining 18 sites is expected to begin in 1992. The other two remaining sites are a demilitarization furnace and a cyclone dust storage area. These are addressed as current operations under RCRA corrective actions and are not included in the IR Program.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI work plan for 11 sites has been prepared. The RI field work began in January 1991. In October 1988, the Navy held the first TRC meeting. Members include NWS Earle; Northern Division, Naval Facilities Engineering Command; EPA Region II; State of New Jersey Department of Environmental Protection; Monmouth County Health Department; and Howell and Middletown Townships.

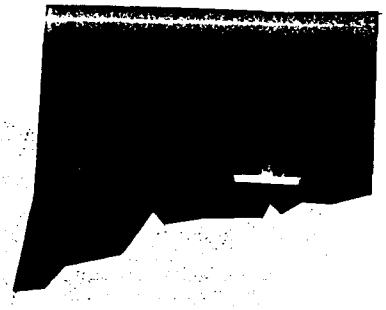
Remedial Design/ Remedial Action (RD/RA)

Initiation of RD/RA work is expected in 1994.

New London Submarine Base

(61)

Groton, Connecticut



Service: Navy

Size: 547 Acres

HRS Score: 36.53

Base Mission: Homeporting submarines; Submarine intermediate maintenance and repairs; Submarine training; Submarine medical research

IAG Status: Initiated and expected to be signed in 1992

Action Dates: IAS completed 1983; RI/FS field plan completed 1990; Placed on NPL August 1990

Contaminants: Pesticides, fuel oil, construction rubble, spent acids, incinerator ash, solvents, paints, PCBs

Funding to Date: $2.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Initial Assessment Study (IAS) identified 16 potentially contaminated sites and recommended further investigation at four sites. Potential contaminant migration represents a threat to the Thames River, a fishing source and recreational area.

Remedial Investigation/ Feasibility Study (RI/FS)

The field work began in July 1990. The work plan includes five RI sites and six SI sites. A TRC was formed in 1989 and members include the Navy, Connecticut Department of Environmental Protection, EPA Region I, Town of Groton, City of Groton, Town of Waterford, City of New London, the Town of Ledyard, and interested citizens of those communities. The combined SI and RI draft report was submitted to the TRC in August 1991. This report recommended three of the six SI sites for no further action. The remaining three will proceed to RI. The five RI sites are recommended for FS. Two additional sites have been discovered and added to the program.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities. Hazardous wastes were removed from the area in 1991.

Newport Naval Education & Training Center
Newport, Rhode Island

(62)

Service:	Navy
Size:	1,400 Acres
HRS Score:	32.25
Base Mission:	Logistics support; Training center
IAG Status:	Initiated and expected to be signed in 1992
Action Dates:	PA/SI completed 1984; RI/FS initiated 1988; Placed on NPL November 1989
Contaminants:	Paints, oils, spent acids, solvents, PCB-contaminated soil
Funding to Date:	$2.3 million

Preliminary Assessment/ Site Inspection (PA/SI)

Migration of contaminants pose a potential threat to the underlying aquifer. Surface drainage and ground water from potentially contaminated sites flow directly into the Narragansett Bay. Such potential contamination could adversely affect shellfish harvested for human consumption.

A PA/SI identified 18 potentially contaminated sites. Nine sites exhibited sufficient evidence to warrant further studies.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS work plan was completed for five sites in March 1989. A TRC has been formed and meetings have been held since April 1988. TRC members include NewPort NETC; Northern Division, Naval Facilities Engineering Command; Rhode Island Department of Environmental Management; EPA Region I; Cities of Portsmouth, Middletown, and Newport; Narragansett Bay project representatives; and Melville Marine Industries. In July 1990, the community relations plan was issued for NETC Newport. Field work for the RI/FS work plan was completed in November 1990. The draft RI report was completed in November 1991 and is undergoing TRC review. The Federal Facility Agreement between the Navy, EPA and RIDEM is in the draft final stage.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities. Hazardous materials were removed from the area during 1989 and 1991.

Norton Air Force Base
San Bernardino, California

(63)

Service: Air Force

Size: 2,003 Acres

HRS Score: 39.65

Base Mission: Military Airlift Command Base

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1987

Contaminants: Waste oils and fuels, solvents, paint strippers and residues, refrigerants, acidic plating solutions, metal plating residue

Funding to Date: $18.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified several sites of potential contaminant migration. Sites targeted for an RI/FS included two landfills, six discharge areas, four chemical pits, a fire training area, a fuel spill area, a PCB spill area, a chemical spill area, two waste storage areas, an UST area, and a low-level radioactive waste burial site. After additional study, two more sites were identified in 1987.

Remedial Investigation/ Feasibility Study (RI/FS)

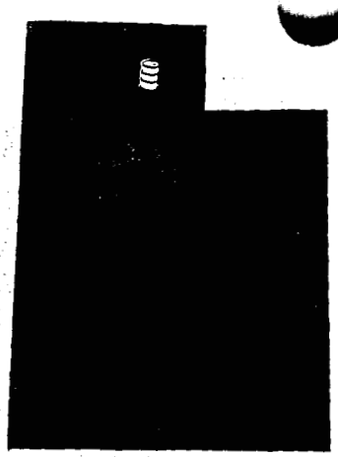
Initial investigations found that soils at several sites were contaminated with solvents, fuel derivatives, and metals. An IAG between the installation and the regulatory community was signed as required by CERCLA. Deadlines for meeting critical milestones toward final remediation have been established and coordinated with EPA and the state. The final ROD is due in September 1993. An RI/FS effort is underway to characterize all sites, with drafts expected in 1992. In addition, a comprehensive RI/FS work plan (strategy plan) has been developed. A draft RI/FS work plan was submitted to EPA and the state for review prior to finalization in 1990. A comprehensive ground water plan also was provided.

Remedial Design/ Remedial Action (RD/RA)

A removal action was taken in 1985-86 to clean up the on-base IWTP sludge drying beds. A ground water pump-and-treat system is being installed to remediate TCE contamination in the central portion of Norton AFB and prevent further TCE migration. In 1989, a total of 26 USTs were removed. Removal of underground storage tanks and surrounding contaminated soils continues.

Ogden Defense Depot
Ogden, Utah

(64)



Service: Defense Logistics Agency

Size: 1,139 Acres

HRS Score: 45.10

Base Mission: Electronic equipment, industrial construction equipment, textiles, package petroleum, and industrial/commercial chemicals distribution

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1980; Placed on NPL 1987; RI/FS initiated 1987; ROD OU #1 signed 1990; RD/RA OU #1 initiated 1991

Contaminants: Solvents, paint/paint residues, petroleum/oil/lubricants, insecticides, chemical warfare agents (mustard and phosgene gas training kits), methyl bromide, metal plating wastes/sludges, PCB-transformer oils, degreasers, acids and bases, sand-blast residues

Funding to Date: $7.32 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 44 sites as potential contaminant migration sources. The PA/SI has been completed for all 44 sites. Twenty-two were studied further under the RI/FS. These 22 sites were divided into four Operable Units (OUs) and nine contamination study areas.

Remedial Investigation/ Feasibility Study (RI/FS)

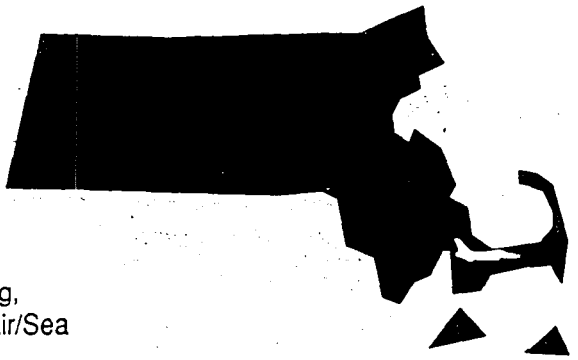
An RI/FS was initiated in September 1987 when ground water monitoring wells were installed and soil borings were taken at 17 locations. Sampling of soil and ground water has confirmed concentrations of benzene, TCE, vinyl chloride, trans-1,2-DCE, cis-1,2-DCE, methylene chloride, chlordane, zinc, cadmium, barium, toluene, tetrachloroethene, and chromium above the established federal MCLs. Ground water contamination has been limited to the shallow aquifer because of the current geological conditions at the site. The FFA identifies four OUs. A ROD will be developed for each unit. The first DLA ROD was signed in September 1990 to allow official startup of cleanup activities at OU #2. RI/FS reports were completed for all OUs during 1991 and contamination site study areas. All 22 sites have completed the RI/FS phase.

Remedial Design/ Remedial Action (RD/RA)

Vials of mustard agents and irritant grenades were removed from disposal pits in June 1988. Remedial design was completed at OU #1 and OU #2 during 1991. RD/RA activities were initiated at OU #1 during 1991.

Otis Air National Guard Base/ Camp Edwards Falmouth, Massachusetts

(65)



Service:	Air Force
Size:	22,000 Acres
HRS Score:	45.92
Base Mission:	Provide Army and Air National Guard training, East Coast Air Defense, and Coast Guard Air/Sea Rescue
IAG Status:	Pre-ROD IAG signed July 1991
Action Dates:	Placed on NPL 1989
Contaminants:	Waste solvents, emulsifiers, penetrants, photographic chemicals, VOCs
Funding to Date:	$21.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

Otis Air National Guard Base (ANGB), Camp Edwards (ARNGB), U.S. Air Force, U.S. Coast Guard and Veteran's Administration cover approximately 22,000 acres of what is known as the Massachusetts Military Reservation (MMR) in Falmouth, Barnstable County, Massachusetts. The area is not heavily populated. Although the occupants and property boundaries have changed since the facility was established in 1935, the primary mission has been to provide training and housing for air and ground military units. In 1982, the Air National Guard (ANG) conducted an initial PA at Otis ANGB and identified seven sites requiring further study.

In 1984, the USGS detected a plume of contaminated ground water which extended two miles to the south of the treatment plant. In 1983 and 1984, volatile organic compounds (VOCs) were detected in on-site IRP monitoring wells near the Base landfill and current fire training area. In 1986, a PA was performed on the entire installation. Forty-two potential hazardous waste sites were recommended for further study. This includes 21 sites on ANG facilities, 15 sites on ARNG facilities and six sites on USCG facilities. The sites include fire training areas, coal storage areas and motor pool areas. The waste products associated with the identified areas include waste solvents, waste fuels, and chlorinated solvents. SIs have been completed on 19 sites.

Remedial Investigation/ Feasibility Study (RI/FS)

In FY 1991, the sites were prioritized and RIs were initiated at priority sites. Wells have been installed along the southern border of the base to detect any contamination possibly migrating off-base from the sites into the towns of Falmouth and Mashpee. Ground water contamination from the landfill has been detected flowing toward the town of Bourne. No contamination has been detected flowing toward the town of Sandwich on the northern border of the base.

Remedial Design/ Remedial Action (RD/RA)

The ANG reimbursed the City of Falmouth for installing new water lines in 1986-87 to the affected residences and replacing a city well. In 1989, additional water lines were installed in three affected areas in the Ashument Valley. Falmouth, MA was compensated for installation of water lines in Ashument Valley because a plume from Otis Sewage Treatment Plant caused the closure of private wells. Mashpee, MA will be compensated for water lines installed in the Briarwood area because of contamination from MMR. During 1991, removal of contaminated liquids and sediments began on two projects to prevent further ground water contamination.

Pearl Harbor Naval Complex

(66)

(Proposed for Listing on the NPL)
Pearl Harbor, HI

Service: Navy

Size: 6,300 Acres

HRS Score: 70.82

Base Mission: Serve as area commander in coordinating resources to provide facilities, services, and materials in support of the U.S. Pacific Fleet

IAG Status: IAG not yet initiated

Action Dates: PA completed 1983; RI/FS initiated 1991; Proposed for NPL July 1991

Contaminants: Waste oils, pesticides, heavy metals, PCBs, solvents

Funding to Date: $10.7 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA conducted in 1983 identified 31 potential sources of hazardous substances. Since then, additional sources have been identified. The Complex currently has 22 sites requiring further action. Most sites are located close to Pearl Harbor shoreline waters. Some sites are located near drinking water wells and wetlands. The potential exists for migration of contaminants to receptors or resources of concern.

Remedial Investigation/ Feasibility Study (RI/FS)

The proposed listing of Pearl Harbor Naval Complex on the NPL was based on the aggregate scoring of six sites within the area: Pearl City Peninsula Landfill, Former Gyro Shop, PCB Disposal Storm Drain at Building 68, Pickling Shop Waste Disposal, Makalapa Pesticide Rinseate Pit, and Aiea Laundry Shop. All sites are not contiguous. The activities affected by the proposed NPL action include Shipyard Pearl Harbor, Public Works Center Pearl Harbor, Submarine Base Pearl Harbor, Naval Station Pearl Harbor, Naval Supply Center Pearl Harbor, and Inactive Ships Detachment Pearl Harbor.

A RI/FS was initiated in September 1991 at some of the higher priority sites. Other sites will be investigated as funds become available and requirements are negotiated with EPA and the State. Integration of RCRA and underground storage tank requirements with the NPL action is anticipated. Operable units will probably be established to manage the investigation and cleanups. A Technical Review Committee has been established and convened to review actions at the sites. A community relations plan is currently being developed. The Navy anticipates that an FFA will be initiated in 1992. More details concerning the implications of the NPL action will be established during FFA negotiations.

Remedial Design/ Remedial Action (RD/RA)

While the RI/FS is in progress, removal actions will be undertaken when appropriate to expedite the cleanups. Removal actions will include the excavation and disposal of solvent-contaminated soil and the recovery of fuel products from the brackish ground water. During 1991, over 100 cubic yards of PCB-contaminated soil were removed from a transformer site near a school playground. Initiation of RD/RA at some sites is expected in 1994.

Pease Air Force Base

(67)

Portsmouth/Newington, New Hampshire

Service:	Air Force
Size:	4,365 Acres
HRS Score:	39.42
Base Mission:	Aircraft maintenance
IAG Status:	Pre-ROD IAG signed 1991
Action Dates:	PA/SI completed 1986; RI/FS initiated 1987; Placed on NPL 1990
Contaminants:	Organic solvents, pesticides, paint strippers, petroleum products
Funding to Date:	$35.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

The area around Pease AFB is commercial-residential. The base abuts a tidal estuary called Great Bay that leads to Little Bay three miles downstream, which is used for both shellfishing and recreational activities. Both coastal and fresh water wetlands are along surface water migration pathways from the base.

An estimated 9,000 people obtain drinking water from public and private wells within three miles of the base.

Sites identified during a 1986 study included seven landfills, two areas where waste oil and solvents were burned for fire training exercises, and four areas where solvents and other liquid wastes were discharged on the ground. All hazardous wastes generated on-base currently are disposed of offsite at EPA-regulated facilities.

A second PA was conducted in 1990 to satisfy IAG requirements. A total of 35 sites have been identified.

Remedial Investigation/ Feasibility Study (RI/FS)

Tests conducted in 1977 determined that a well supplying drinking water to 8,700 people on-base was contaminated with TCE. An RI/FS was initiated in September 1987. According to a 1988 IRP report, traces of heptachlor and lindane were found contaminating surface water along the surface runoff pathway from one of the landfills. Lead and zinc were found in sediments of three major drainage ditches on-base. The base holds an NPDES permit for the discharge of treated wastewater into the Piscataqua River.

Additional RI/FS work is currently underway. The RI for all sites is scheduled to be completed by 1993.

Remedial Design/ Remedial Action (RD/RA)

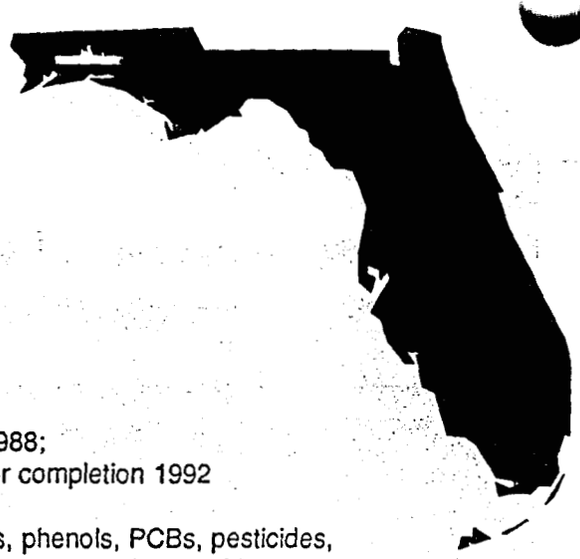
In 1984, an aeration system was installed to remove TCE from all base water supply wells. The TCE levels are no longer detectable, so the system has been discontinued.

Removal of EOD items such as spout flares and starter cartridges was completed in 1991. Removal of most underground storage tanks and contaminated soils have been completed. An interim remedial action involving the installation of a ground water pump-and-treat system is also scheduled to be installed in early 1992 to facilitate lease and/or transfer of flightline properties.

Pensacola Naval Air Station

(68)

Pensacola, Florida



Service:	Navy
Size:	5,969 Acres
HRS Score:	42.40
Base Mission:	Flight training; Naval Air Depot
IAG Status:	Pre-ROD IAG signed October 1990
Action Dates:	PA completed 1983; RI/FS initiated 1988; Placed on NPL 1990; SI scheduled for completion 1992
Contaminants:	Paints, metal plating wastes, asbestos, phenols, PCBs, pesticides, chlorinated and non-chlorinated solvents, ammonia, cyanide
Funding to Date:	$10.1 million

Preliminary Assessment/ Site Inspection (PA/SI)

Past disposal practices included burning in unlined pits; depositing in disposal areas; storing aviation gas in fuel tanks; and discharging liquid wastes to industrial sewers, sanitary sewers, and surface impoundments.

The PA was completed in 1983 by the Naval Energy and Environmental Support Activity. An initial SI was conducted in 1984 followed by an extended SI completed in 1986.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS began in December 1988 in conjunction with the RFI. A contract was awarded for the development of SI work plans for all sites (SWMU and IRP sites) at Pensacola NAS. Draft work plans were submitted to EPA Region IV in May 1989.

Eleven work plans were finalized in 1990 for Phase I field work. Five Phase II work plans were submitted for review and comment by the regulatory agencies.

The first meeting of the TRC was held in January 1989. Navy, EPA, and Florida Department of Environmental Regulation drafted an FFA. Signatures occurred in October 1990. The FFA identifies 37 potential sources of contamination for further investigation and appropriate corrective action. The last TRC was held in July 1991 to discuss the interim data reports on the first 10 sites' Phase II reports. The next TRC meeting is scheduled for January 1992 to discuss the remaining Phase I draft work plans.

Remedial Design/ Remedial Action (RD/RA)

A ground water recovery system has been operating since January 1987 at the IWTP complex. The recovery system will replace the existing centrifugal pumps with submersible pumps and drawdown protectors as required by the new Hazardous Waste Facility Permit received in September 1991. Impoundments at Site 33 underwent formal closure under RCRA in 1989.

Plattsburgh Air Force Base

(69)

Plattsburgh, New York

Service: Air Force

Size: 3,440 Acres

HRS Score: 30.34

Base Mission: Tactical Wing of Strategic Air Command; Provide Combat Crew training and NCO Leadership School

IAG Status: Signed 1991

Action Dates: PA/SI completed 1986; RI/FS initiated 1987; Placed on NPL 1990

Contaminants: Organic solvents, PCBs

Funding to Date: $20.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

Toluene, TCE, 1,1,1-TCA, methylene chloride, and 1,2-dichloroethane are present in drainage ditches in areas where solvents and jet fuels were spilled. Tests conducted in 1987 found MEK, TCE, and trans-1,2-dichloroethylene in two shallow monitoring wells downgradient from a drum storage area. An estimated 2,000 people obtain drinking water from wells within three miles of the base.

EPA evaluated eight hazardous waste accumulation or disposal sites and four spill areas to develop the HRS score for Plattsburgh AFB.

An additional PA/SI will be conducted in 1992 as required by the IAG.

Remedial Investigation/ Feasibility Study (RI/FS)

Plattsburgh AFB prepared and is implementing a basewide RI/FS work plan.

Remedial Design/ Remedial Action (RD/RA)

RD/RA activities for 1991 included remedial actions for the DDT spill site located at the DRMO facility, and for the fire training area. Two landfill closure actions will be awarded in 1992, with construction beginning shortly afterward. Also, a removal action at Building 1034 is planned for 1992. Incineration will be used to dispose of the waste after removal. Additional RAs may be implemented based on the results of the RI/FS.

Riverbank Army Ammunition Plant (70)

Riverbank, California

Service:	Army
Size:	172 Acres
HRS Score:	63.94
Base Mission:	Grenade and projectile steel cartridge casings manufacture
IAG Status:	Pre-ROD IAG signed April 1990
Action Dates:	PA/SI completed 1980; RI/FS initiated 1981; Placed on NPL 1990
Contaminants:	Cyanide, zinc, chromium wastes
Funding to Date:	$10.77 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Riverbank Army Ammunition Plant (RBAAP) is a GOCO facility currently employing approximately 150 persons. Past operations have contaminated the ground water beneath the plant with cyanide and chromium wastes and the off-post potable water supply used by approximately 70 residents.

A PA/SI identified potentially contaminated sites, including the IWTP, an abandoned landfill, and four evaporation/percolation (E/P) ponds located 1.5 miles north of the plant near the Stanislaus River.

Remedial Investigation/ Feasibility Study (RI/FS)

Chromium contamination has been traced to past operation of the IWTP. The abandoned landfill is the source of cyanide contaminants. Both chromium and cyanide have entered the ground water aquifers beneath the plant. Their migration off-post affects the potable domestic water supply. Sampling domestic supply wells off-post is conducted quarterly. The E/P ponds contain zinc concentrations above California limits for surface impoundments. The RI report was conditionally approved in August 1991 pending completion of additional sampling at the landfill and IWTP off-load area. FS efforts were initiated in November 1991.

Remedial Design/ Remedial Action (RD/RA)

In response to finding chromium contamination above state limits, off-post domestic supply wells at five residences were replaced with deeper wells. Construction of an interim ground water treatment system was completed in December 1990 and was placed under 24-hour operation in September 1991. The system is achieving a 99 percent removal of hexavalent chromium and cyanide.

Remedial measures initially scheduled for 1991 to reduce the zinc concentrations in the E/P ponds have been delayed. The recommended alternative use of the zinc-rich sediments as an agricultural soil amendment was determined to be nonexecutable because the sediments would have to be regulated as a hazardous waste. Other alternatives are being evaluated for implementation in 1992. An Action Memorandum for installation of a waterline to off-post residences was approved in September 1991. The waterline will be installed in 1992.

Robins Air Force Base

(71)

(Landfill #4/Sludge Lagoon)
Houston County, Georgia

Service: Air Force

Size: 8,855 Acres

HRS Score: 51.66

Base Mission: Aircraft logistics

IAG Status: Pre-ROD IAG signed 1989

Action Dates: PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1987

Contaminants: VOCs, paint strippers and thinners, paints, solvents, phosphoric and chromic acids, oils, cyanide, carbon remover

Funding to Date: $18.9 million

Preliminary Assessment/ Site Inspection (PA/SI)

Robins AFB is located in the Coastal Plain of Georgia and includes a 1,200-acre wetland. Units of the highly permeable Cretaceous Aquifer lie beneath the base. Although the water supplies for the Base and City of Warner Robins are derived from this aquifer, the ground water flow and contaminant migration appear to be in an easterly direction, away from all wells and the city. Trichloroethylene and tetrachloroethylene have been detected in ground water. Thirty-three sites on base may contain hazardous waste from past disposal activities.

Ground water contamination with a high potential for contaminant migration was detected at three sites. Two areas covering 465 acres comprise the NPL site: Landfill #4, and an adjacent sludge lagoon, which contains phenols and metal plating wastes. Additional sites have been added since 1986 through identification by the Base and the Georgia EPD during survey work for the Part B Permit.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS was initiated in September 1986. The sites have been grouped into eight zones. In Zone 1, contamination of ground and surface water and sediments by organic solvents and metals was confirmed. In Zone 2, ground and surface water contamination was detected. In Zone 3, high levels of petroleum products, TOX, and BTEX were found. In Zone 4, ground water contamination by TOX and BTEX was detected. In Zone 5, solvents were found. No significant contamination was detected in Zone 6. In Zone 7, TCE, petroleum hydrocarbons, and lead were found. Zone 8 had one soil sample test positive for PCBs.

Another RI/FS began in 1988 to address sites which include construction debris landfills, ground water contamination areas, and several disposal areas.

Remedial Design/ Remedial Action (RD/RA)

Several USTs were removed and water supply wells were replaced in 1987. Removal of pesticide contaminated soil in Zone 2 will begin in 1992. The remedial designs for Zones 3 and 5 are being accomplished with corrective actions scheduled to begin in 1992. The RD for the NPL site Zone 1 began in June 1991. A total of 16 sites are to be closed during 1991.

An IRP master plan has been approved for Robins AFB for 1988 through 1992. The plan is a work document to consider contaminant sources, migration, and the development of remedial alternatives.

Rocky Mountain Arsenal

Adams County, Colorado

(72)

Service: Army

Size: 17,228 Acres

HRS Score: 58.15

Base Mission: Decontamination and cleanup of real estate, facilities, and equipment

IAG Status: Pre-ROD IAG Federal Facilities Agreement established 1989

Action Dates: RI/FS initiated 1984; PA/SI completed 1985; Placed on NPL 1987

Contaminants: Pesticides; mustard gas and nerve agents; mercury; lead; arsenic; organic and inorganic chlorides; hydroxides and fluorides; diisopropylmethylphosphonate dichloropentadiene; dibromochloropropane; solvents; acids; methyl isobutylketone; sulfur bearing organic and inorganic compounds

Funding to Date: $414.69 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Army completed a material contamination survey in August 1973 and an installation assessment in March 1977. These studies identified 19 areas potentially contaminated with heavy metals, chemical agents, incendiaries, and industrial wastes.

Remedial Investigation/ Feasibility Study (RI/FS)

The cleanup program at Rocky Mountain Arsenal (RMA) is divided into two operable units (OUs), on-post and off-post. RMA completed the final off-post RI Report in 1989 and the final on-post RI report in 1990. An RI Addendum to the off-post OU was completed in 1991. Both on-post and off-post Human Health Exposure Assessments, which represent the second of four key steps in the Integrated Endangerment Assessment (EA) for RMA, were completed in 1991. The FS for the on-post OU is underway and scheduled for completion in 1993. It involves the review of more than 200 technologies in preparation for the detailed analysis of remedial alternatives.

Remedial Design/ Remedial Action (RD/RA)

The FFA calls for 13 IRAs to contain contamination sources, reduce the extent of contaminant migration, and decrease the cost of the final remediation. All IRAs have been initiated, with many completed. Recharge trenches have been installed at the North Boundary System and short-term improvements have been made to the Northwest Boundary System. Two new intercept and treatment systems located north of Basin F and in the Basin A neck area have been completed. Engineering design for a new intercept and treatment system located off-post, north of RMA has also been completed. Approximately 10.5 million gallons of liquid and 500,000 yards of contaminated soil were removed at Basin F with the liquids placed in tanks and ponds, and the soil placed in a waste pile. The Decision Document for destruction of the 10.5 million gallons of Basin F liquids has been finalized.

In FY 1991, a contract was awarded for the cleanup and dismantling of the Hydrazene Blending and Storage Facility, closing of over 350 abandoned wells, closing old and deteriorating sections of the sanitary sewer, and removal or encapsulation of asbestos, and the assessment of "other contamination source" IRAs. Completed actions include interception and treatment of TCE and Dibromochloropropane contaminated ground water at the Motor Pool and Rail Classification Yard Areas, construction of a slurry wall around and capping over disposal trenches, soil vapor extraction of TCE in the Motor Pool area, and monitoring of complex disposal trenches. Additional actions are planned for the future.

Sacramento Army Depot

(73)

Sacramento, California

Service:	Army
Size:	485 Acres
HRS Score:	44.46
Base Mission:	Depot for electronics materials; Manufacture parts
FFA Status:	Pre-ROD FFA signed 1988 with EPA and State of California
Action Dates:	PA/SI completed 1979; OU/RI/FS initiated 1984; Placed on NPL 1987
Contaminants:	Waste oil and grease, solvents; metal plating wastes; wastewaters containing caustics, cyanide, metals
Funding to Date:	$25.49 million

Preliminary Assessment/ Site Inspection (PA/SI)

The 1979 PA/SI identified several industrial areas and spill/disposal sites as potential sources of contaminant migration. A follow-on investigation conducted under the operable unit (OU) RI/FS addressed these potential sources of contamination.

An enhanced PA was subsequently conducted to determine all environmental issues that need to be addressed for Base Realignment and Closure (BRAC) 1991. The assessment included records reviews, evaluation of ongoing environmental studies, and a site visit.

Remedial Investigation/ Feasibility Study (RI/FS)

Several OUs at SAAD have been identified that may require response actions. Four of the OUs were recommended for Feasibility Studies with the other OUs to be addressed in an overall site FS. The on-going ground water monitoring program has detected contamination both on and off site, primarily low levels of TCE. Metals have also been found in the Old Morrison Creek sediments near the Oxidation Lagoons. Sampling and analysis of soil under a 1,000-gallon UST, known as Tank 2 OU, indicate that VOCs, PAHs and pesticides exist in the area. There are also several areas that were identified in the original PA/SI that do not warrant further action. A No-Action ROD is being prepared for these areas.

Remedial Design/ Remedial Action (RD/RA)

The SAAD ROD for the south post ground water contamination was signed in September 1989 by the Army, the Sate of California, and the EPA IX Regional Administrator. SAAD constructed a ground water well extraction system and an ultra-violet light hydrogen peroxide (UV/Peroxidation) treatment plant which began operations in November 1989. The IRA is intended to prevent ground water contamination from migrating beyond SAAD boundaries and to treat organic solvent contaminated ground water under the former burn pits. The plant has successfully treated over 110 million gallons to date.

The ROD addressing soil contamination for the Tank 2 OU was signed by the Army in October 1991 and is being reviewed by EPA IX and California. SAAD has awarded a contract to design and construct a soil vapor extraction treatment system equipped with air pollution controls to remediate organic solvent soil contamination.

A remedial action removal contract was awarded September 1991 to design and construct a treatment system to remove heavy metals contamination from the former oxidation lagoons. SAAD has awarded a soil washing treatment system to extract the inorganics from the soil. A Record of Decision is currently being prepared for the soil washing unit.

Savanna Army Depot Activity

(74)

Savanna, Illinois

Service:	Army
Size:	13,062 Acres
HRS Score:	42.20
Base Mission:	Depot for munitions and explosives; Manufacture and store chemicals
IAG Status:	Pre-ROD IAG signed 1989 with EPA and State of Illinois
Action Dates:	PA/SI completed 1979; RI/FS initiated 1980; Placed on NPL 1989
Contaminants:	Munitions-related wastes
Funding to Date:	$13.51 million

Preliminary Assessment/ Site Inspection (PA/SI)

Three potable water sources near Savanna Army Depot and the shallow aquifer five meters below may be contaminated. Lagoons adjacent to the Mississippi River also could contaminate these drinking water sources. Surface contamination could affect the large wintering population of bald eagles. The PA/SI initially identified 59 potentially contaminated sites and these sites later were consolidated into 45 sites. Local munitions-related contamination was detected in sediments of the TNT washout-area leaching-pond, and in ground water on base.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS, initiated in September 1980, identified and confirmed the extent and concentration of ground water and soil contamination in the lagoon sediment. The lagoons leached TNT and other chemicals to the ground water. Sampling of selected ground and surface water sites in 1988 determined the extent of contaminant migration. The IAG-mandated RI commenced in October 1989. The May 1990 site characterization summary increased the number of potentially contaminated sites to 72. Environmental sampling at 26 sites recommended by EPA and Illinois EPA commenced in 1990.

Additional investigatory effort was required under the RI in 1991 by the regulatory agencies.

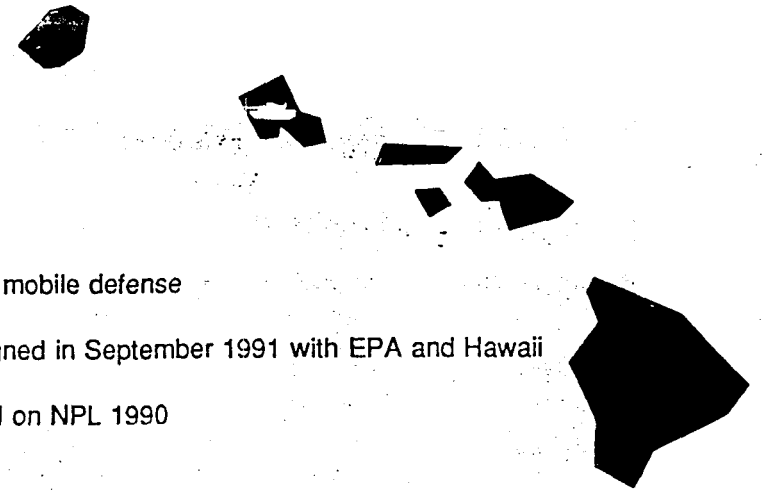
Remedial Design/ Remedial Action (RD/RA)

Incineration of TNT-contaminated soils at the lagoons are scheduled for 1992. The incineration remedial action is expected to proceed as an operable unit.

Schofield Barracks

(75)

Oahu, Hawaii



Service: Army

Size: 17,725 Acres

HRS Score: 28.90

Base Mission: Home for Army's Oahu Island mobile defense

IAG Status: Federal Facility Agreement signed in September 1991 with EPA and Hawaii

Action Dates: PA/SI completed 1984; Placed on NPL 1990

Contaminants: Organic solvents

Funding to Date: $1.01 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA was conducted in 1984. Pesticide storage, burning ground, washrack activities, and paint filter disposal activities were cited as possible sources that could contaminate the municipal landfill. No evidence of ground water contamination was found at the time of the PA.

In April 1985, the Army informed the Hawaii Department of Health that high levels (30 ppb) of TCE contaminated wells supplying drinking water to 25,000 people at Schofield Barracks. The federal MCL for TCE is 5 ppb.

A PA/SI and initial RI scoping effort was initiated in 1991 for operable units (OU) 1, 2 and 4 to detail efforts required to locate the TCE source and to gather data needed to support remedial actions at the installation.

Additional PA/SI efforts are planned in 1992 for OU 3.

Remedial Investigation/ Feasibility Study (RI/FS)

In September 1986, the Army began removing TCE from contaminated wells on base to ensure safe drinking water. This interim response action will be modified as required, based upon findings of the upcoming RI/FS. RI/FS activities for OU #1, #2 and #4 will be initiated following completion of the RI scoping effort initiated in 1991. All RI/FS efforts will be conducted under the FFA between the Army, EPA and Hawaii. RI efforts will be planned as warranted for OU #3 upon completion of the PA/SI efforts.

Remedial Design/ Remedial Action (RD/RA)

RD/RA work will begin after completion of RI/FS activities.

Currently, ground water treatment is performed in place with granulated activated carbon (GAC) for removal of TCE from ground water for the drinking water supply at Schofield Barracks.

Seneca Army Depot
Romulus, New York

(76)

Service: Army

Size: 10,600 Acres

HRS Score: 35.52

Base Mission: Receive, store, distribute, maintain, and demilitarize conventional ammunition, explosives, and special weapons

IAG Status: Initiated and expected to be signed in 1992

Action Dates: PA/SI completed 1989; RI/FS scoping initiated 1990; Placed on NPL 1990

Contaminants: Chlorinated organic solvents, heavy metals

Funding to Date: $3.59 million

Preliminary Assessment/ Site Inspection (PA/SI)

Seneca Army Depot employs approximately 700 civilian and 300 to 400 military employees. Chlorinated organic solvents from the incinerator ash landfill have been detected in ground water on post and in seasonal surface seeps off post. Occupants of a farmhouse near the field where the seeps occur may be receptors. No private wells are affected. Soils in the open burning/open detonation (OB/OD) ground are contaminated with heavy metals that apparently do not migrate.

The PA/SI identified the potential for ground water contamination at the incinerator ash landfill and recommended an SI. The SI confirmed off-post migration of contaminated ground water and identified several source areas within the landfill.

Remedial Investigation/ Feasibility Study (RI/FS)

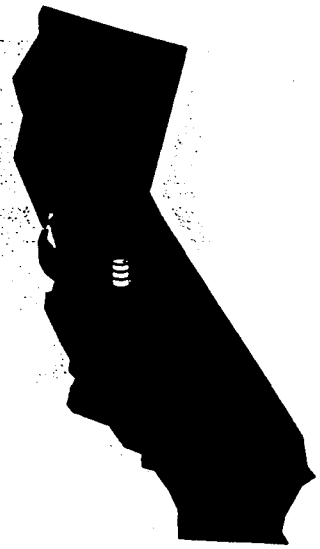
RI/FS scoping activities began in 1990 for the landfill and for the OB ground. The work plan for both projects were approved in October 1991 and field work at both sites has begun. These investigations will characterize contaminant source areas, define the extent of contamination, and evaluate health risks.

Remedial Design/ Remedial Action (RD/RA)

RD/RA is anticipated to begin in 1993. Actual initiation is dependant upon regulatory considerations throughout the RI/FS process.

Sharpe Site, Defense Distribution Region West (formerly Sharpe Army Depot) Lathrop, California

(77)



Service: Defense Logistics Agency

Size: 720 Acres

HRS Score: 42.24

Base Mission: Depot for general supplies

IAG Status: Pre-ROD IAG signed 1989 with EPA and State of California

Action Dates: PA/SI completed 1980; RI/FS initiated 1984; Placed on NPL 1987; Ground water RI completed 1991

Contaminants: VOCs

Funding to Date: $14.37 million

Preliminary Assessment/ Site Inspection (PA/SI)

Sharpe employs 1,200 people. Wastes have been landfilled or buried onsite. The PA/SI indicated contamination from landfilling in the north and south ends of the depot, in areas referred to as the north balloon and south balloon because they are encircled by a railroad turnaround. The study identified contaminants in the burning pits and burial sites in the central area of the depot. The PA/SI found solvent wastes, predominantly TCE, contaminating soil and ground water in the area.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS was initiated in July 1984. The complexity and extent of site contamination and the intense regulatory oversight have necessitated two separate RI sampling operations. The final RI for all sites at Sharpe was approved by the regulatory agencies in July 1991. The RI documents the extent of ground water and soil contamination. The primary contaminant is TCE. Approximately 24,000 yards of TCE-contaminated soil is present. TCE levels up to 20,000 ug/L have been measured. The California allowable level for TCE is 5 ug/L. TCE from Sharpe Depot also has contaminated ground water off post. The draft FS for ground water contamination was submitted in FY 1991 and is expected to become final in December 1991. The draft FS for soil will be submitted in January 1992.

Remedial Design/ Remedial Action (RD/RA)

Sharpe has constructed two interim ground water treatment systems. The first system is located in the South Balloon Area and began operating in March 1987. The second system is located in the North Balloon Area and began operating in October 1990. The North Balloon system requires upgrading which is scheduled for 1992. RD/RA for a third and final ground water plant will begin in 1992. A treatability test of in-situ volatilization for soils was conducted in 1991. It was a success. Extended tests are planned for 1992.

Tinker Air Force Base
Oklahoma City, Oklahoma

(78)

Service: Air Force

Size: 5,001 Acres

HRS Score: 42.24

Base Mission: Worldwide repair depot for aircraft, weapons, and engines

IAG Status: Pre-ROD IAG signed 1988

Action Dates: PA/SI completed 1982; RI/FS initiated 1983; Placed on NPL 1987

Contaminants: Organic solvents, heavy metals

Funding to Date: $43.71 million

Preliminary Assessment/ Site Inspection (PA/SI)

Tinker Air Force Base is located within the drainage area of the North Canadian River Basin of central Oklahoma. Two tributaries for this basin are Crutcho and Kuhlman Creeks, which run through the base proper. The base sets on the recharge zone for the large and productive Garber-Wellington Aquifer, a major potable water source for the base and surrounding communities. Cleaning of aircraft parts and engines over the past 45 years within Building 3001 has resulted in ground water contamination of this major water supply with organic solvents (TCE and 1,2-DCE). To date, three drinking water wells within or adjacent to Building 3001 indicate a contamination plume, within the shallow water zone, of 220 acres. This plume is moving north and northwest and is a possible contamination for the base and 75,000 non-base users of this water source.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS phase commenced in September 1983 and has been completed on three wells, Landfill 3, North Fuel Tank Area (NPL site), Pit Q-51 (NPL site), abandoned pits at the IWTP, Fire Training Area 2, and Building 3001. Field investigations have been completed at Landfills 1-4, Landfill 6, Fire Training Area 1, Supernatant Pond, and Industrial Waste Pit 2, Building 3001, and two radioactive waste dump sites. Investigations are underway at the IWTP, Industrial Waste Pit 1, Southwest Tank Area, Area A Refueling Station, 3700 Fuel Yard, Four Fuel Sites, 3 radioactive waste dump sites, Crutcho Creek, Kuhlman Creek, and the Soldier Creek NPL site.

No off-base contaminant migration has been confirmed to date. An IAG covering the NPL site was signed December 1988.

Remedial Design/ Remedial Action (RD/RA)

The ROD for Building 3001, North Tank Area operable unit, and Pit Q-51 operable unit was signed in 1990. Pit Q-51 was cleaned and plugged in September 1990. The design efforts for the recommended B3001 ground water recovery and treatment system was completed in August 1991.

Landfills 1 and 5 have been capped and the Landfill 6 cap was repaired. Landfill 3 is presently near completion on the capping action.

Documentation recommending no further action has been completed for three wells, Pit Q-51, Fire Training Areas 2 and 4, Facility 1123, three of the five radioactive waste disposal sites, and the industrial waste pits.

Future RA work will include the removal of radioactive waste and the use of innovative solidification/ stabilization techniques at the supernatant pond.

Tobyhanna Army Depot

(79)

Tobyhanna, Pennsylvania

Service: Army

Size: 1,293 Acres

HRS Score: 37.93

Base Mission: Logistics for communications/electronics equipment; Largest communications/electronics overhaul facility in Army

IAG Status: Pre-ROD IAG signed September 1990

Action Dates: PA/SI completed 1980; RI/FS initiated 1987; Placed on NPL 1990

Contaminants: VOCs, heavy metals

Funding to Date: $4.99 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA/SI was completed in 1980 and updated in 1988. These initial studies confirmed that there was VOC contamination of both on-post and off-post wells. As a result of the IAG, additional sites require SI work. The SI is currently underway at these sites.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS, initiated in July 1987, addressed VOC contamination in the southeast corner of the depot. Two source areas have been confirmed with one only a few hundred feet from affected off-post wells. The preferred response measures under the FS are passive volatilization for contaminated soils (tilling soils within a specially constructed building); pumping and treating ground water; and providing an alternate water source to affected residents.

Remedial Design/ Remedial Action (RD/RA)

A treatability study is being conducted for the passive soil volatilization technology. The Army has been providing bottled water for 26 residences and one business since March 1987. A waterline extension from the depot to the affected residents was completed June 1991.

Tooele Army Depot (North Area)
Tooele County, Utah

(80)

Service: Army

Size: 44,087 Acres

HRS Score: 53.95

Base Mission: Store and supply equipment; Build and repair locomotives, wheeled vehicles, and transport cars

IAG Status: Pre-ROD IAG signed September 1991

Action Dates: PA/SI completed 1980; Placed on NPL 1990; RI/FS initiated 1987

Contaminants: Heavy metals, petroleum/oil/lubricants, PCBs, paint primers, cleaning, plating and explosive wastes

Funding to Date: $24.26 million

Preliminary Assessment/ Site Inspection (PA/SI)

Historic disposal practices consisted of discharging wastes to evaporation or percolation ponds, detonation and burning, and burial at the demilitarization range. Consequently, ground water was threatened by contaminant migration from the waste sites; plant and animal life in the area also could be affected.

The December 1988 PA/SI identified potential ground water contaminant migration. Five sites presented a significant threat to public health and the environment, including explosives found in the ground water beneath the TNT washout pond. Ground water is contaminated with volatiles at the Industrial Waste Lagoon (IWL).

Remedial Investigation/ Feasibility Study (RI/FS)

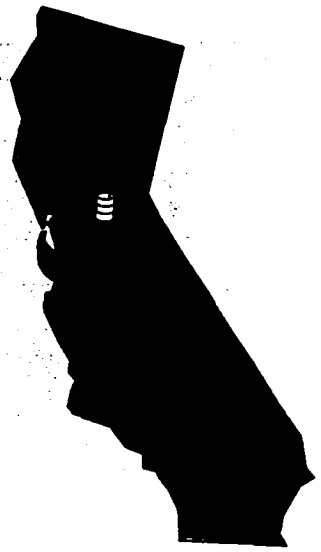
An environmental survey in 1982 indicated that TCE from the IWL was migrating to the northern boundary on-post. An RI addendum report in 1989 concluded that a plume of ground water contamination containing TCE from the IWL extends off-post approximately 2,500 feet. A site-wide RI/FS was initiated in September 1987. Additional ground water contamination was detected at the Sanitary Landfill and the TNT washout pond. These results were published in December 1990. A follow-on RI was initiated and workplans were submitted to the regulators in October 1991. RFI and RI work initiated in 1990 in the North and South areas and continued during 1991.

Remedial Design/ Remedial Action (RD/RA)

The IWL was granted interim status under RCRA in 1985. This required installation of monitoring wells, but the previously documented evidence of ground water contamination caused TEAD to enter into a Consent Decree with the State of Utah. As a result, a ground water quality assessment was conducted. The Consent Decree also required TEAD to cease discharging wastewater into the IWL and to close the lagoon. Closure of the lagoon was completed in 1989 and construction of a ground water pump and treat system was initiated in 1991.

Tracy Site, Defense Distribution Region West (formerly Tracy Defense Depot) Tracy, California

(81)



Service: Defense Logistics Agency

Size: 448 Acres

HRS Score: 37.16

Base Mission: Store and distribute food, medical, electronic, and industrial/construction equipment; and textiles for Armed Forces in the western U.S. and Pacific

IAG Status: Signed 1991

Action Dates: PA/SI completed 1982; RI/FS initiated 1986; Placed on NPL 1990

Contaminants: Heavy metals, petroleum/oil/lubricants, VOCs, TCE, PCE

Funding to Date: $9.5 million

Preliminary Assessment/ Site Inspection (PA/SI)

A PA/SI identified 32 sites of contamination on-depot with strong contamination migration potential. All 32 sites will be included in the RI/FS investigations. The upper ground water aquifer, both on- and off-depot, is contaminated with both TCE and PCE beyond federal safety standard limits.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS began in September 1986 on 32 sites. In addition to the contaminated upper aquifer, the soil on-depot is likewise contaminated. Ninety monitoring wells have been installed, and 61 soil borings and 180 soil vapor tests have been conducted. This RI/FS addresses ground water only and is referred to as Operable Unit (OU) One. An installation-wide RI/FS for soil contamination will be awarded during FY 1992.

Remedial Design/ Remedial Action (RD/RA)

An IRA contract awarded in September 1989 led to the construction of an air stripper to remove contaminants from the ground water. The stripper was installed during the third quarter of FY 1991. Five extraction wells, three injection wells and 10 additional monitoring wells were installed as part of this project.

Travis Air Force Base

(82)

Solano County, California

Service:	Air Force
Size:	5,025 Acres
HRS Score:	29.49
Base Mission:	Gateway to the Pacific, providing strategic airlift services for troops, cargo, and equipment: west coast terminals for aeromedical evacuation
IAG Status:	Pre-ROD IAG signed 1990
Action Dates:	PA/SI completed 1985; RI/FS initiated 1986; Placed on NPL 1990
Contaminants:	VOCs, heavy metals, polynuclear aromatic hydrocarbons
Funding to Date:	$10.19 million

Preliminary Assessment/ Site Inspection (PA/SI)

The area around Travis AFB is primarily agricultural. Industrial operations on base include aircraft and automotive servicing, above and below ground fuel storage and distribution, and facility maintenance and repair.

A PA/SI identified several sites potentially contributing to contamination due to past operations and disposal practices. These sites include old landfills, a closed sewage treatment plant, fire fighting training areas, disposal pits, spill areas, and the storm drainage system. Volatiles present in the storm sewer system, particularly TCE, could possibly reach Union Creek. Point Arena AFS, an auxiliary installation occupying 81 acres on a mountain top in Mendocino County, contains both mercury and possibly VOC contamination.

Remedial Investigation/ Feasibility Study (RI/FS)

An RI/FS is underway to determine the type and extent of contamination and to identify alternatives for remedial action. Two additional sites have been added to the investigation: the Cyanide Disposal Pit (CDP), where approximately 250 pounds of cyanide were buried, probably in 1967; and the Grazing Management Units, where a swelling affliction has been observed in horses. Preliminary analysis indicates that fine-grained alluvial sediments of very low permeability exist beneath the base. Localized buried sand and gravel channels represent likely pathways for contaminant migration. The ground water at Travis AFB contains naturally elevated concentrations of several metals and common anions. The contaminants detected in the ground water include volatile organics and metals. Metals and polynuclear aromatic hydrocarbons (PAHs) were detected in the surface water, sediments of the storm sewers, and Union Creek. Completion of the RI/FS is expected in 1993.

Remedial Design/ Remedial Action (RD/RA)

Twenty-seven USTs were removed from various IRP sites at Travis AFB in 1986. In 1990, an IRA was initiated to investigate, intercept and cleanup floating fuel products in the ground water table. Additional RD/RA activities will be determined by a ROD anticipated for early 1994.

Treasure Island Naval Station—Hunters Point Annex

(83)

San Francisco, California

Service: Navy

Size: 936 Acres

HRS Score: 48.77

Base Mission: Support Pacific Fleet

IAG Status: Pre-ROD IAG signed 1990

Action Dates: RI/FS initiated 1987; Placed on NPL 1989

Contaminants: Paints, solvents, fuels, acids, bases, heavy metals, PCBs, asbestos, phenols, polyaromatic hydrocarbons, VOCs

Funding to Date: $31.8 million

Preliminary Assessment/ Site Inspection (PA/SI)

Formerly the Hunters Point Naval Shipyard, Hunters Point Annex was established in 1869 as the first dry dock on the Pacific Coast. The Navy purchased the installation in 1939 and leased it to Bethlehem Steel Company. The Navy operated Hunters Point Annex as a shipbuilding and repair facility from 1941 until 1976. Triple A Machine Shop then leased the facility from 1976 to 1986 and subleased numerous buildings to private tenants. Testing in 1987 detected benzene, PCBs, toluene, and phenols in onsite ground water. A bottling company draws ground water from a spring approximately one mile from Hunters Point Annex. Offshore sediments contain elevated levels of heavy metals and PAHs. Area surface waters are used for recreational activities, commercial navigation, and fishing.

To date, the RI/FS has included 23 sites. Four removal actions are planned for 1992, including site treatment, decontamination, and waste removal.

Remedial Investigation/ Feasibility Study (RI/FS)

A TRC was formed in 1988 and members include representatives from COMNAVBASE San Francisco; Treasure Island Naval Station; Western Division, Naval Facilities Engineering Command; California Department of Toxic Substances Control, California Regional Water Quality Control Board; Bay Area Air Quality Management District; EPA Region IX; the City and County of San Francisco; NOAA; Department of Interior, and a public representative appointed by the Mayor of San Francisco.

The last phase of field work for one Operable Unit began in 1991. The draft RI report is scheduled for completion in June 1992. In addition, development of RI work plans for four sites began in 1991. Completion of RI/FS work for all sites is expected in 1994.

Remedial Design/ Remedial Action (RD/RA)

A removal action was implemented in 1986 to clean up PCBs. Removal of asbestos was undertaken and completed in 1990. RD/RA work will begin after completion of RI/FS activities.

Twin Cities Air Force Reserve Base (84)
(Small Arms Range Landfill)
Minneapolis, Minnesota

Service: Air Force

Size: 280 Acres

HRS Score: 33.70 (One site only, Small Arms Range Landfill)

Base Mission: Tactical Airlift

IAG Status: Pre-ROD IAG signed by the Air Force and USEPA Region V November 1989; Public comment period completed January 1990

Action Dates: SI completed 1986. RI completed in 1990; FS completed 1991; Placed on NPL 1987

Contaminants: Oil/petroleum/lubricants, spent solvents and cleaners, battery acid, strippers, painting wastes (containing metals such as chromium), PCB-contaminated oils, chlorinated hydrocarbons

Funding to Date: $2.94 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Air Force Reserve completed a PA in March 1983 and an SI in April 1986. The Small Arms Range Landfill is located on non-contiguous property two miles from the main base property, and was the primary solid waste disposal site for the base from 1963 to 1972. The landfill primarily contains general refuse, but industrial waste products may have been buried or burned in this landfill. These products include paint thinners and removers, paint, primers, lacquers, paint filters containing chromium in the paint, and 100 to 200 gallons of leaded fuel sludge. This landfill is almost three acres, and is located adjacent to the Minnesota River within the 100-year flood plain. The northern boundary of the Minnesota Valley National Wildlife Refuge lies 500 feet from the landfill. It flooded once in 1965. The EPA HRS staff estimated 64,700 people living in the Minneapolis-St. Paul metropolitan area depend on public and private wells for drinking water within a 3-mile area of the landfill.

The other sites include a landfill, fuel spills, sludge burial pits, hazardous waste drum storage area, battery shop leaching pit, and UST. The PA/SI identified a possible plume of AVGAS on the ground water table at the Past Fuel Site, and also identified additional potential for contamination problems.

An SI is underway for two sites, Temporary Landfill and Hangar P-1 Area. Field work for this project was completed in December 1991.

Remedial Investigation/ Feasibility Study (RI/FS)

For the NPL site, Small Arms Range Landfill, initial investigation studies were completed in 1986. The RI was completed in July 1990, the FS was completed in June 1991, and the Proposed Plan in August 1991. The public meeting was held on 5 September 1991. Ground water investigation results indicate very low concentrations of only a few compounds were detected. The first round of ground water sampling showed traces of some volatile aromatic compounds; methylene chloride, 1,2-DCE, acetone, 2-butane, chloroform, TCE, benzene, and toluene. Only TCE was detected above federal MCLs in the upgradient well, which suggests an off-base source. Also detected was the organic compound bis (2-ethylhexyl) phthalate, which was slightly above the Minnesota Recommended Allowable Limit

Twin Cities Air Force Reserve Base
(Small Arms Range Landfill)
Minneapolis, Minnesota

(Continued)

(RAL) in one sample. Some metals were detected, but the levels were very low, (below SDWA MCLs,) and are attributed to background and not the landfill. The second round of sampling detected 1,2-DCE significantly below federal MCLs, bis(2-ethyl-hexyl) phthalate below state RALs, di-n-butylphthalate, and caprolaccam in low concentrations. Metals were detected in the second round of sampling, but again in low concentrations below the SDWA MCLs. The 12 monitoring wells around the site screen the ground water from 5 to 60 feet below level surface.

The chosen remedial alternative is natural attenuation with ground water and surface-water monitoring, maintenance of the landfill cover, and site access restrictions. This alternative was chosen in coordination with the USEPA and MPCA and is acceptable by both agencies.

Negotiations for an FFA between the Air Force, EPA, and the State of Minnesota concluded on August 15, 1989. Due to differences between the DoD and State of Minnesota on the issue of reimbursement, the FFA has only been signed by the Air Force and EPA.

The RI/FS for one site, Past Fuel Spill, was completed in March 1989. A plume of AVGAS has been discovered floating on the ground water table and migrating to the southwest. A variation of the pump and treat method has been chosen as the remediation alternative. This will involve pumping the contaminated water to the surface, separating out the liquid AVGAS, discharging the treated water to the sanitary or storm sewer, and disposing of the AVGAS at an appropriate facility.

An RI/FS is currently underway for five other sites: MOGAS Spill, Suspected Oil Spill Area, former Hazardous Waste Drum Storage Area, Underground Tank Leak, and Battery Acid Leaching Pit. Field work for these sites was completed in July 1990 and the RI report should be completed in November 1991.

Remedial Design/ Remedial Action (RD/RA)

The chosen remedial alternative for the NPL site described previously requires no design actions and remedial action will begin immediately following the completion of the Record of Decision.

The remedial design for the pump and treat system at the Past Fuel Spill Site was completed in August 1990. Construction of the system was completed and became operational in May 1991.

Remedial action was accomplished at one site, JP-4 Spill Site, between 1984 and 1985. A state-approved venting system was installed, and effluent contaminant levels decreased until they were no longer detectable in laboratory analysis. The system was removed upon state concurrence that the site does not pose a threat to human health or the environment.

Furthermore, approximately 1,400 cubic yards of PCB-contaminated soil have been incinerated. The in-situ volatilization units installed at Site D and Site G have recovered approximately 222,678 pounds of volatile organic compounds (VOCs).

Twin Cities Army Ammunition Plant (85)

New Brighton, Minnesota

Service: Army

Size: 2,560 Acres

HRS Score: 59.16

Base Mission: Small arms and projectile casing manufacture

IAG Status: Pre-ROD IAG signed 1987 with EPA and State of Minnesota

Action Dates: PA/SI completed 1988; RI completed 1991; FS initiated 1991; Placed on NPL 1982

Contaminants: VOCs, heavy metals, solvents, acids and caustics, fuels, cleaners, paints, explosives

Funding to Date: $33.27 million

Preliminary Assessment/ Site Inspection (PA/SI)

Sources located on the Twin Cities Army Ammunition Plant (TCAAP) have contaminated ground water primarily with VOCs. The contamination affects water supplies for the cities of New Brighton and St. Anthony, located 2.5 and 4.5 miles downgradient, respectively. The PA/SI verified the presence of 14 potentially contaminated sites. Concurrent field investigations conducted since 1981 verified three major sources of regional ground water contamination. Site D is a former series of earthen impoundments used for industrial waste disposal. Site G is a former landfill used for building and industrial waste disposal. Site I (Building 502) is the area where industrial operations introduced VOCs to the ground water system. Two other sites have contributed to perched ground water contamination. These sites consist of Site A, a former disposal area for industrial waste, and Site K (Building 103), where industrial operations introduced VOCs to the ground water system. The remaining 14 sites have not contributed significantly to ground water contamination at TCAAP.

Remedial Investigation/ Feasibility Study (RI/FS)

Alliant Tech Systems, Inc., formerly Honeywell, Inc., an industrial tenant of TCAAP, and the Department of the Army have installed approximately 300 monitoring wells both on and off the plant to define the magnitude and extent of ground water contamination. The FFA requires the DA to complete an RI on TCAAP and requires EPA to conduct an investigation of off-plant areas. These efforts were completed in 1991. The FS was initiated by the Army in August 1991.

Remedial Design/ Remedial Action (RD/RA)

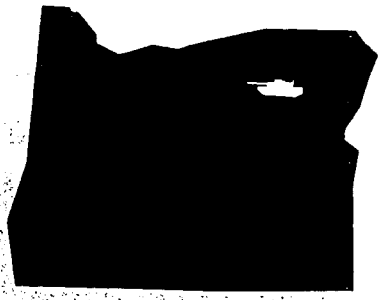
A regional ground water treatment system has been installed to extract and treat ground water, prevent contaminant migration beyond plant boundaries, and contain highly contaminated ground water within the plant interior.

Additional efforts to preclude ground water contamination include installation of two ISV systems at Sites D and G, ground water treatment at Site I, incineration of contaminated soils, and provision of contaminated soil storage facilities. Efforts also are being conducted at Sites A and K to prevent contamination from migrating within the perched ground water system.

Approximately 3.7 billion gallons of contaminated ground water have been treated and 144 tons of contaminants have been removed.

Umatilla Army Depot
Hermiston, Oregon

(86)



Service: Army

Size: 19,729 Acres

HRS Score: 31.31

Base Mission: Ammunition storage

IAG Status: Pre-ROD IAG signed October 1989

Action Dates: PA/SI completed 1980; Placed on NPL 1987; RI/FS initiated 1989

Contaminants: Metals, red fuming nitric acid, pesticides, RDX, nitrates, TNT, TNB, HMX, DNT isomers

Funding to Date: $14.05 million

Preliminary Assessment/ Site Inspection (PA/SI)

The PA/SI identified and targeted several major contaminant sources for RI/FS work. These areas contained explosive wastes and UXO. Ground water under the washout lagoons was contaminated with cyclonite (RDX), nitrates, TNT, TNB, HMX, and DNT. An enhanced PA in support of base closure activities was prepared concurrently with the RI/FS work plan under the IAG. The enhanced PA was submitted in April 1990.

Remedial Investigation/ Feasibility Study (RI/FS)

A Phase I RI determined the washout lagoons had contaminated the alluvial aquifer with TNT, RDX, HMX, TNB, DNT, and nitrates. In addition, the shallow basalt aquifer contained very trace quantities (approximately 1 ppb) of explosives. Several SWMUs, including the deactivation furnace, active and inactive landfills, the ammunition demolition area, and several septic tanks, showed various industrial and explosive contaminants. A Phase II RI was initiated in August 1989. Work conducted under the IAG will cover 55 sites, 22 in the ammunition demolition area. RI field work was initiated in May 1990. Field work for asbestos and radon assessments in support of the base closure mission was initiated in FY 1990.

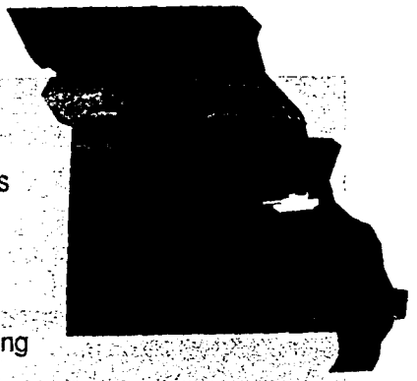
A supplemental RI/FS addressing remaining sites was initiated in September 1991.

Remedial Design/ Remedial Action (RD/RA)

RI/FS documents are being prepared for an operable unit remedial action of the washout lagoons. The composting technology demonstrated in a recent pilot study at Umatilla is being considered for the remedial action.

Weldon Spring
(Chemical Plant and Training Area)
St. Charles County, Missouri

(87)



Service:	Army
Size:	Chemical Plant: 230 acres; Training Area: 1,655 acres
HRS Score:	58.60
Base Mission:	Formerly used in support of the Ordnance Works Production Area, then transferred to AEC for processing uranium and thorium
IAG Status:	Signed June 1990
Action Dates:	PA/SI completed 1977; Listed on NPL 1990; RI/FS began 1990
Contaminants:	TNT, DNT, lead, thorium, uranium, PCB, asbestos
Funding to Date:	$26.19 million

Preliminary Assessment/ Site Inspection (PA/SI)

The Weldon Spring Ordnance Works is composed of two major components: the active portion is a 1,655-acre area where TNT and DNT were produced during World War II; the inactive portion is a 15,577-acre area that provided support facilities, such as water treatment, storage magazines, power plants, heat plants, classrooms, and housing, to the production area. Adjacent to the active site is the 230-acre former Atomic Energy Commission (AEC) facility, which processed uranium from 1957 to 1966 and is listed separately on the NPL with DOE and the Army as the PRPs. The AEC facility is located on an area that was originally part of several TNT production lines. As a result of an OMB decision and an MOU between the Army and DOE, the Army is funding DOE for part of the Chemical Plant remedial work.

Remedial Investigation/ Feasibility Study (RI/FS)

During the RI on the active portion of the site, 8,000 surface soil samples were taken; subsurface soil samples were taken at 41 locations; 34 monitoring wells were installed onsite; 14 monitoring wells were installed offsite; water was sampled at 10 springs and eight lakes; sediment was sampled at eight lakes; and soil vapor testing was conducted in four areas. A wooden pipeline was mapped using ground penetrating radar at 270 locations and sampled at 24 locations. Nitroaromatics and VOCs were detected in the ground water, nitroaromatics and lead were detected in the surface soil, and nitroaromatics were detected in the wooden pipeline. A draft FS was submitted in July 1990. A draft Risk Assessment was submitted October 1990.

The Chemical Plant area at Weldon Spring has been broken into four OUs; Chemical Plant/ Raffinate Pits, Quarry Bulk Waste, Quarry Follow-on (residuals), and Site Ground Water. The FS for the Chemical Plant/Raffinate Pits is underway with the ROD scheduled for May 1993. RI/FS scoping has begun for the Quarry Follow-on OU with the RI/FS scheduled to begin in FY 1992. RI/FS scoping is planned for the Site Ground Water OU.

Remedial Design/ Remedial Action (RD/RA)

Various IRAs have been initiated or completed for the Chemical Plant area to mitigate actual or potential releases of radioactive or chemical contaminants to the environment. RODs for the Quarry Bulk Waste Removal effort were signed in September 1990 and March 1991. Supporting activities are underway with the final action expected to begin in May 1992. For the remaining OUs RD/RA work will begin after completion of the RI/FS.

West Virginia Ordnance Works

(88)

Point Pleasant, West Virginia

Service: Army

Size: 8,323 Acres

HRS Score: 35.72

Base Mission: Established in 1942 and produced TNT from toluene for the World War II war effort; Deactivated in 1946

IAG Status: First OU IAG signed 1987; Second OU IAG signed 1989

Action Dates: PA/SI completed 1982; Placed on NPL 1984; RI/FS initiated 1984. ROD for OU #1 signed 1987; ROD for OU #2 signed 1988; Omaha District assigned RD for Second OU cleanup in November 1989; Transition to FUDS Program October 1991

Contaminants: Nitroaromatic residues

Funding to Date: $17.62 million

Preliminary Assessment/ Site Inspection (PA/SI)

In May 1981, red water seepage was observed adjacent to Pond 13 in McClintic State Wildlife Station (MSWS). The pond was located near the former TNT wastewater trunk sewerlines and pumping station. Studies by the West Virginia Department of Natural Resources and EPA contractors in 1981 and 1982 showed 2,4-TNT, 2,6-TNT, 2,4,6-TNT, and phenol present in the ground water. A 1984 archives search of the West Virginia Ordnance Works (WVOW) concluded that, based upon contaminant sources and the hydrogeologic setting of WVOW, the potential existed for contamination migration through surface and ground water pathways.

Remedial Investigation/ Feasibility Study (RI/FS)

In 1984, the Army contracted for an RI to determine the extent of contamination, a human health and environmental endangerment assessment (EA), and an FS to identify and assess remedial action alternatives. The RI, completed in 1985, determined that major contaminant source areas were soils in the TNT manufacturing area, underground process lines, and soils in a burning grounds area. The deep aquifer under the manufacturing area and the ground water in the burning grounds area were not contaminated. To expedite cleanup, activities were divided into two operable units (OUs); the manufacturing area, burning grounds area, and industrial sewer lines; and the acids area/yellow water reservoir, red water reservoirs, and Pond 13/Wet Well site. An FS for the first OU was completed in 1986 and for the second OU in 1988. The ROD for the second unit called for capping two red water ponds, and building two ponds on the MSWS, capping Pond 13, capping the yellow water reservoir, pumping and treating related ground water, and purchasing an industrial park at the acids area/yellow water reservoir for incorporation into MSWS.

Remedial Design/ Remedial Action (RD/RA)

A contract was awarded in 1987 by the Army to perform remedial actions on the first OU. Field work was conducted in 1988 and consisted of excavation and flaming of industrial sewerlines and flaming the surface of the burning ground. A soil cap was then placed over contaminated soils at the TNT manufacturing and burning grounds area. A $4.6 million contract for capping the two red water ponds was awarded on August 31, 1990. Construction began in the summer of 1991. Capping material was removed from a clean borrow on site; the borrow area subsequently will be converted to an 11.5-acre wetlands. A contract for capping the yellow water reservoir was awarded in September 1991. A ground water study is in the planning phase. The project will be funded through the FUDS program beginning in FY 1992.

Williams Air Force Base

(89)

Chandler, Arizona

Service:	Air Force
Size:	4,127 Acres
HRS Score:	37.93
Base Mission:	Pilot training; Aircraft and ground equipment maintenance
IAG Status:	Pre-ROD IAG signed 1990
Action Dates:	PA/SI completed 1984; RI/FS initiated 1986; Placed on NPL 1990
Contaminants:	Waste solvents, fuels and lubricants, heavy metals
Funding to Date:	$11.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

Irrigated farmland and desert surround Williams AFB. Past disposal practices have contaminated soils with heavy metals and ground water with petroleum products. The Air Force has completed an initial assessment and the potentially contaminated areas include a past fire protection training area, drainage systems, and landfill and spill areas.

Remedial Investigation/ Feasibility Study (RI/FS)

A work plan has been developed for an RI/FS to determine the type and extent of contamination and to identify alternatives for remedial action. Field investigations are underway.

Remedial Design/ Remedial Action (RD/RA)

The Southwest Draining System was remediated in 1988 by installing a soil cement and concrete cap on the upper 350 feet of the ditch. This action was agreed to by State of Arizona regulatory officials.

Monitoring wells approximately 350 feet deep have been installed at the liquid fuels storage area to determine the extent of vertical migration of leaked fuel. Shallow wells approximately 250 feet deep have been installed to plot the extent of this plume. Pump tests have been conducted to gather data needed for remedial design of a proposed pump and treat facility. Continuous fuel recovery has been started.

A storage tank was removed during 1991 from the electroplating shop. Removal of drums was also completed during that year at the pesticide burial area.

Two operable units (OU) have been established. OU2 is the former liquid fuel storage area and is the first to be considered. OU1 is the final remedy for the remediation of all sites. Two Proposed Plans and two RODs will be prepared.

A draft of the ROD for OU2 is expected by July 1992 and for OU1 by September 1993. The RD for OU2 is expected April of 1994 and RA April 1995. RD for OU1 expected November 1994 and RA November 1995.

The Draft Remedial Investigation Report for OU2 was published in 1991. The Draft Feasibility Study and the Draft Proposed Plan have been submitted for regulatory review. A pilot study/demonstration project is underway at OU2. Two horizontal wells and a large diameter well will be compared to determine the efficiency of jet fuel removal from the shallow water table.

Wright-Patterson Air Force Base (90)

Dayton, Ohio

Service: Air Force

Size: 8,511 Acres

HRS Score: 57.85

Base Mission: Headquarters to Air Force Logistics Command, Aeronautical Systems Division and Air Force Institute of Technology; Medical Center

IAG Status: Pre-ROD IAG signed March 1991

Action Dates: RI/FS initiated 1986; Placed on NPL 1989

Contaminants: Waste oil and fuels, acids, plating wastes, solvents, pesticides, batteries, radioactive wastes

Funding to Date: $69 million

Preliminary Assessment/ Site Inspection (PA/SI)

Past Air Force activities in support of operational missions have created 62 unlined waste disposal areas throughout the base, including landfills, spill sites, fire training areas, and coal storage piles. As a result, contamination of the aquifer used by the city of Dayton and the base for drinking water has occurred.

Known sites were rated in 1982 during the first phase of the IRP. Twenty-four sites located on the base contained hazardous material.

Remedial Investigation/ Feasibility Study (RI/FS)

The RI/FS contract was awarded in November 1989. The RI/FS for all sites is currently scheduled to be completed in 1998. Landfills 8 and 10 have been the highest concern due to their proximity to the Woodland Hills residential area. Both landfills were a trench and cover operation for disposal of general refuse and chemical waste. Ground water in the vicinity of Landfill 8 is contaminated with benzene and TCE. Landfill 10 is contaminated with VOCs. However, complications have arisen with landfill subsidence, gas generation and venting, and seepage of leachate. The RI/FS for these sites is scheduled for completion by April 1993. A focused RI/FS for Source Control is scheduled for initiation in 1992. The base will begin four additional RI/FS projects at the next highest priority operable units in 1992. Also in 1992 a Basewide Monitoring Program will be initiated. In June 1987, the USGS initiated a hydrogeological assessment of the strata underlying the base to understand ground water movement and the direction of contaminant migration. The complete USGS study will provide a technical foundation for future base-wide IRP activities and is scheduled for completion in 1992. Regional ground water flows in a southwesterly direction toward the City of Dayton's drinking water well fields. The existence of permeable soils in the area exacerbates this concern. The IAG with the USEPA Region V was signed on March 21, 1991. The base is under an Administrative Order of Consent (February 1988) which specifies site RI and cleanup processes.

Remedial Design/ Remedial Action (RD/RA)

Drinking water from base wells is being treated for VOC contamination. In 1991 the base initiated a Removal Action along the base boundary to intercept and treat ground water found to be contaminated with TCE flowing in the direction of the City of Dayton's well fields. The permanent system will be fully operational in 1992. Another Removal Action was initiated in 1991 at Spill Sites 2 and 3 to delineate the extent of a free product plume (JP4) and to implement a free product recovery and ground water treatment system.

Yuma Marine Corps Air Station

(91)

Yuma, Arizona

Service:	Navy
Size:	3,000 Acres
HRS Score:	32.24
Base Mission:	Tactical aircrew combat training
IAG Status:	Initiated and expected to be signed 1992
Action Dates:	PA completed 1985; SI completed December 1990; RI/FS initiated 1990; Placed on NPL 1990
Contaminants:	VOCs, waste fuels, oils, degreasers, solvents, paints, PCBs, pesticides, herbicides, photographic chemicals
Funding to Date:	$1.6 million

Preliminary Assessment/ Site Inspection (PA/SI)

Ground water is a potable water source for Yuma Marine Corps Air Station (MCAS), the City of Yuma, and for industrial and agricultural purposes. Past disposal practices contaminated soils and ground water. A PA/SI identified 12 potentially contaminated sites, and recommended that two sites be studied further to confirm contamination.

The confirmation study for these two sites was completed in early 1988. In response to a State of Arizona request made in July 1988, 11 of the original 12 IAS sites and two additional sites were investigated further as a part of an SI completed in December 1990. To date, 18 sites have been identified.

Remedial Investigation/ Feasibility Study (RI/FS)

A TRC has been formed and the first meeting was held in April 1990. Members include representatives from the City of Yuma; the Arizona Department of Environmental Quality; EPA Region IX; Yuma MCAS; Southwest Division, Naval Facilities Engineering Command; and the public. Development of the RI/FS work plan began in November 1990.

Yuma MCAS was listed on the NPL in February 1990. Subsequently, EPA assigned a separate remedial project manager for the base. FFA negotiations with EPA and the State of Arizona were initiated and completed in 1990. Final signature is expected in 1992.

Remedial Design/ Remedial Action (RD/RA)

Although no RD/RA activities are currently planned in 1992, removal actions will be considered if an imminent threat is identified during the RI/FS.

Appendix C
Status of IRP Installations

This Appendix to the Annual Report includes three tables that summarize the status of activities at all DoD installations included in the IRP by the end of FY 1991.

Table C-1 summarizes IRP site status by state, DoD component (Army, Navy, Air Force, and Defense Logistics Agency), and installation. Table C-2 provides a status summary by DoD component.

The status abbreviations used in this Appendix are as follows:

C	–	Number of sites for which a particular study or action has been completed
U	–	Number of sites with a particular study or action underway
F	–	Number of sites scheduled to have a study or action performed in the future
CO	–	Number of closed-out sites where no further action is required.

Installation status is designated as follows:

Italicized	–	The installation is listed on the NPL
●	–	The installation has a signed IAG
♦	–	The installation is proposed for listing on the NPL.

Table C-1
Department of Defense Environmental Restoration Program
State by State Installation Status Listing As of September 30, 1991

	Total # of Sites	Number of Sites																	
		PA				SI				RI/FS				RD			RA		
		C	U	F	CO	C	U	F	CO	C	U	F	CO	C	U	F	C	U	F
ALABAMA																			
ARMY																			
AFRC Birmingham	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Cullman	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFRC Gadsden	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alabama AAP	37	37	0	0	0	35	0	2	1	29	5	0	0	12	4	0	12	2	2
Anniston Army Depot	45	45	0	0	0	45	0	0	0	0	45	0	0	3	2	37	3	2	36
Coosa River Storage Annex (Anniston)	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Fort McClellan	60	60	0	0	43	0	17	0	0	0	0	0	0	0	0	0	0	0	0
Fort Rucker	106	106	0	0	0	105	0	0	62	0	43	62	0	0	0	105	0	0	105
Phosphate Dev Works	31	31	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	
Redstone Arsenal	71	71	0	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	
USARC Abbeville	4	4	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0
USARC Anniston	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Beltline	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Birmingham 01	14	14	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Birmingham 02	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Cropwell (ASF 155)	9	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Dothan	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Elba	4	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Enterprise	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Foley	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Rucker (ASF 157)	6	6	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Fort Rucker (ECS 143)	10	10	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Gadsden	5	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USARC Holt	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	

(Contin