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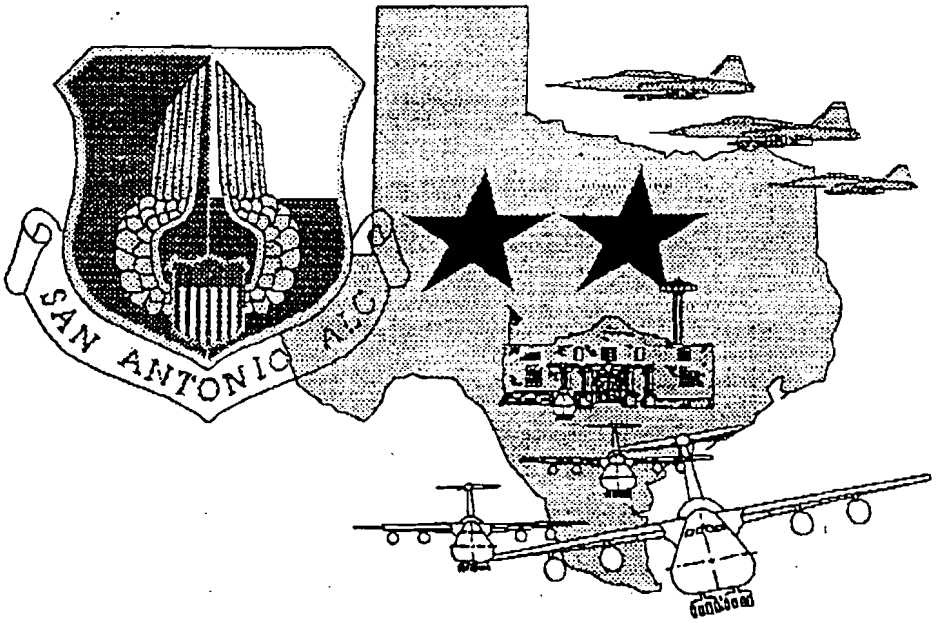

KELLY AIR FORCE BASE

TO: Mr Owsley

OFFICE: BRAC

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NUMBER OF PAGES (INCLUDING THIS PAGE): 29

SUBJECT: Memo from Maj Gen Curtis

COMMENTS:

FROM: Maj Gen Lewis E. Curtis III

OFFICE: SA-ALC/CC

OFFICE NO.: 945-6914 FAX #: (DSN) 945-9928
(COMM) 210-925-9928

FROM THE DESK OF THE
San Antonio ALC Commander

14 JUN 1995

Jim,

This is the OSD source data from the DOD database that we used for our labor rate comparison. It is a custom run done for us by Bob Mason's shop. I hope its useful to you.

Lew

LEWIS E. CURTIS III
Major General, USAF
Commander

DEPARTMENT OF DEFENSE
DEPOT MAINTENANCE COST SYSTEM

DEPOT MAINTENANCE ACTIVITIES

Selected Annual Depot Maintenance Cost Data
Fiscal Years 1990 - 1994

DEPARTMENT OF DEFENSE DEPOT MAINTENANCE ACTIVITIES

Selected Annual Depot Maintenance Cost Data Fiscal Years 1990 - 1994

The following set of charts depicts selected annual depot maintenance cost data derived from Military Department data submissions done in accordance with Chapter 76 of the *DoD Accounting Manual*, DoD 7220.9-M, . This data is submitted by the Military Departments to the Office of the Secretary of Defense, Assistant Deputy Under Secretary of Defense for Maintenance Policy, Programs and Resources (ADUSD(L)MPP&R), in the annual AP-MP(A) 1397 Report. A more comprehensive set of *standard* data outputs are available from the ADUSD(L)MPP&R; tailored output products can also be provided upon request. Refer to DoD 7220.9-M, Chapter 76, for details on the structure of the data available. At the time these charts were prepared a limited amount of FY 1994 data was not available.

NOTE All averages are simple averages, not weighted averages.

FIXED-WING AVIATION DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour By Depot Activity

NADEP Cherry Point FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	18.43	44.13	44.04	106.60	62.47
1991	19.02	58.10	40.93	118.05	59.95
1992	20.47	67.82	36.53	124.82	57.00
1993	21.66	49.95	35.84	107.45	57.50
1994	N/A	N/A	N/A	N/A	N/A
Average	19.90	55.00	39.33	114.23	59.23

NADEP Jacksonville FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	18.30	49.16	37.94	105.40	56.24
1991	18.92	50.88	39.16	108.96	58.08
1992	20.78	55.49	35.09	111.36	55.87
1993	23.44	68.72	32.78	124.94	56.22
1994	N/A	N/A	N/A	N/A	N/A
Average	20.36	56.06	36.24	112.67	56.60

NOTE: All averages are simple averages, not weighted averages.

FIXED-WING AVIATION DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour By Depot Activity

NADEP North Island FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	18.61	27.74	38.56	84.92	57.17
1991	19.40	33.43	41.84	94.68	61.24
1992	20.62	33.83	48.67	103.13	69.29
1993	21.48	28.18	48.34	98.00	69.82
1994	N/A	N/A	N/A	N/A	N/A
Average	20.03	30.80	44.36	95.18	64.38

Ogden ALC FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	18.78	24.01	30.86	73.65	49.64
1991	19.69	21.10	30.83	71.63	50.52
1992	21.13	22.77	33.56	77.46	54.69
1993	22.49	15.36	32.71	70.56	55.20
1994	23.51	16.30	27.01	66.82	50.52
Average	21.12	19.91	31.00	72.02	52.12

NOTE: All averages are simple averages, not weighted averages

FIXED-WING AVIATION DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour By Depot Activity

Oklahoma City ALC
FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	18.05	46.52	32.25	96.82	50.3
1991	20.21	48.24	30.43	98.88	50.6
1992	20.69	50.82	32.68	104.19	53.3
1993	21.16	44.43	37.35	102.94	58.5
1994	21.86	50.69	29.33	101.88	51.1
Average	20.39	48.14	32.41	100.94	52.8

San Antonio ALC
FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	15.23	55.85	27.21	98.29	42.4
1991	15.96	61.19	30.07	107.22	46.0
1992	17.44	62.00	32.66	112.10	50.1
1993	18.29	35.59	34.03	87.91	52.3
1994	19.19	54.61	33.18	106.98	52.3
Avetage	17.22	53.85	31.43	102.50	48.6

NOTE: All averages are simple averages, not weighted averages.

FIXED-WING AVIATION DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour By Depot Activity

Sacramento ALC FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	20.20	35.04	27.29	82.53	47.49
1991	21.33	20.24	30.71	72.27	52.04
1992	22.09	29.95	30.52	82.56	52.61
1993	23.69	32.76	33.82	90.27	57.51
1994	25.01	24.16	24.15	73.32	49.16
Average	22.46	28.43	29.30	80.19	51.76

Warner Robins ALC FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	17.78	31.92	28.04	77.74	45.82
1991	18.80	32.28	31.33	82.41	50.13
1992	19.40	28.71	33.74	81.84	53.14
1993	19.81	29.85	35.28	84.94	55.09
1994	20.99	30.43	30.56	81.98	51.55
Average	19.36	30.64	31.79	81.78	51.15

NOTE: All averages are simple averages, not weighted averages.

FIXED-WING AVIATION DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour By Depot Activity

Aerospace Guidance & Metrology Center FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	18.98	18.86	33.75	71.59	52.7
1991	20.71	29.17	34.73	84.61	55.4
1992	21.26	23.59	37.43	82.28	58.6
1993	22.45	24.08	41.82	88.35	64.2
1994	24.39	33.92	26.44	84.75	50.8
Average	21.58	25.92	34.83	82.32	56.3

NOTE: All averages are simple averages, not weighted averages.

FIXED-WING AVIATION DEPOTS

Average Depot Maintenance Costs Per Direct Labor Hour By Service

Average FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
Navy 1990	18.45	40.34	40.18	98.97	58.63
1991	19.11	47.47	40.64	107.23	59.76
1992	20.62	52.38	40.10	113.10	60.72
1993	22.19	48.95	38.99	110.13	61.18
1994	N/A	N/A	N/A	N/A	N/A
Four Year Average	20.09	47.29	39.98	107.36	60.07
USAF 1990	18.01	38.67	29.13	85.81	47.14
1991	19.20	36.61	30.67	86.48	49.87
1992	20.15	38.85	32.63	91.63	52.78
1993	21.32	30.35	35.84	87.50	57.15
1994	22.11	35.24	28.85	86.20	50.96
Five Year Average	20.35	34.48	31.79	86.63	52.14

NOTE: All averages are simple averages, not weighted averages.

FIXED-WING AVIATION DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour
Depot Activity Comparison By Year

FY1990 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
Cherry Point	18.43	44.13	44.04	106.60	62.47
Jacksonville	18.30	49.16	37.94	105.40	56.24
North Island	18.61	27.74	38.56	84.92	57.17
Ogden	18.78	24.01	30.86	73.65	49.64
Oklahoma City	18.05	46.52	32.25	96.82	50.30
San Antonio	15.23	55.85	27.21	98.29	42.44
Sacramento	20.20	35.04	27.29	82.53	47.49
Warner Robins	17.78	31.92	28.04	77.74	45.82
AGMC	18.98	18.86	33.75	71.59	52.73

FY1991 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
Cherry Point	19.02	58.10	40.93	118.05	59.95
Jacksonville	18.92	50.88	39.16	108.96	58.08
North Island	19.40	33.43	41.84	94.68	61.24
Ogden	19.69	21.10	30.83	71.63	50.52
Oklahoma City	20.21	48.24	30.43	98.88	50.64
San Antonio	15.96	61.19	30.07	107.22	46.03
Sacramento	21.33	20.24	30.71	72.27	52.04
Warner Robins	18.80	32.28	31.33	82.41	50.13
AGMC	20.71	29.17	34.73	84.61	55.44

NOTE: All averages are simple averages, not weighted averages.

FIXED-WING AVIATION DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour
Depot Activity Comparison By Year

FY1992 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
Cherry Point	20.47	67.82	36.53	124.82	57.00
Jacksonville	20.78	55.49	35.09	111.36	55.87
North Island	20.62	33.83	48.67	103.13	69.29
Ogden	21.13	22.77	33.56	77.46	54.69
Oklahoma City	20.69	50.82	32.68	104.19	53.37
San Antonio	17.44	62.00	32.66	112.10	50.10
Sacramento	22.09	29.95	30.52	82.56	52.61
Warner Robins	19.40	28.71	33.74	81.84	53.14
AGMC	21.26	23.59	37.43	82.28	58.69

FY1993 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
Cherry Point	21.66	49.95	35.84	107.45	57.50
Jacksonville	23.44	68.72	32.78	124.94	56.22
North Island	21.48	28.18	48.34	98.00	69.82
Ogden	22.49	15.36	32.71	70.56	55.20
Oklahoma City	21.16	44.43	37.35	102.94	58.51
San Antonio	18.29	35.59	34.03	87.91	52.32
Sacramento	23.69	32.76	33.82	90.27	57.51
Warner Robins	19.81	29.85	35.28	84.94	55.09
AGMC	22.45	24.08	41.82	88.35	64.27

NOTE: All averages are simple averages, not weighted averages.

FIXED-WING AVIATION DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour
Depot Activity Comparison By Year

FY1994 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
Cherry Point	N/A	N/A	N/A	N/A	N/A
Jacksonville	N/A	N/A	N/A	N/A	N/A
North Island	N/A	N/A	N/A	N/A	N/A
Ogden	23.51	16.30	27.01	66.82	50.52
Oklahoma City	21.86	50.69	29.33	101.88	51.19
San Antonio	19.19	54.61	33.18	106.98	52.37
Sacramento	25.01	24.16	24.15	73.32	49.16
Warner Robins	20.99	30.43	30.56	81.98	51.55
AGMC	24.39	33.92	26.44	84.75	50.83

NOTE: All averages are simple averages, not weighted averages

ROTARY-WING AVIATION DEPOT

Annual Depot Maintenance Costs Per Direct Labor Hour

Corpus Christi Army Depot
FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost		Material		Overhead		Total	Total w/o Material
1990	17.79		67.71		24.62		110.12	42.41
1991	18.22		54.16		24.00		96.38	42.22
1992	19.59		50.60		25.72		95.91	45.31
1993	20.95		54.11		30.39		105.45	51.34
1994	22.41		56.09		38.83		117.33	61.24
Average	19.79		56.53		28.71		105.04	48.50

NOTE: All averages are simple averages, not weighted averages.

COMBAT VEHICLE DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour By Depot Activity

MC3 Albany
FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	16.16	21.15	25.33	62.64	41.49
1991	18.67	21.35	26.46	66.48	45.13
1992	18.79	21.50	24.36	64.65	43.15
1993	19.66	19.62	13.44	52.72	33.10
1994	20.04	19.36	13.28	52.68	39.32
Average	18.66	20.59	20.58	59.83	39.24

MC3 Barstow
FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	19.72	23.70	27.83	71.25	47.55
1991	19.78	23.65	27.83	71.26	47.61
1992	22.09	31.68	26.33	80.10	48.42
1993	22.52	28.38	21.53	72.43	44.05
1994	22.55	19.97	23.36	65.88	45.91
Average	21.33	25.48	25.38	72.19	46.71

NOTE: All averages are simple averages, not weighted averages.

COMBAT VEHICLE DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour By Depot Activity

Anniston Army Depot FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	16.07	44.96	24.11	85.14	40.18
1991	17.70	55.13	24.17	97.00	41.87
1992	18.16	45.86	25.28	89.30	43.44
1993	19.08	44.04	37.92	101.04	57.00
1994	20.03	48.02	53.92	121.97	73.95
Average	18.21	47.60	33.08	98.89	51.29

Red River Army Depot FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	15.40	35.02	25.37	75.78	40.77
1991	16.47	36.06	23.13	75.65	39.60
1992	17.54	34.41	49.39	101.35	66.93
1993	17.82	43.84	58.71	120.37	76.53
1994	19.01	28.48	53.83	101.32	72.84
Average	17.25	35.56	42.09	94.89	59.33

NOTE: All averages are simple averages, not weighted averages.

COMBAT VEHICLE DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour By Depot Activity

Letterkenny Army Depot
FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	16.48	16.60	25.92	59.00	42.40
1991	17.03	20.03	27.48	64.54	44.51
1992	18.12	29.61	37.44	85.18	55.56
1993	18.86	26.94	61.97	107.77	80.83
1994	21.06	23.36	45.89	90.31	66.95
Average	18.31	23.31	39.74	81.36	58.05

NOTE: All averages are simple averages, not weighted averages.

COMBAT VEHICLE DEPOTS

Average Depot Maintenance Costs Per Direct Labor Hour By Service

Combat Vehicle Depots
Average FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
Army 1990	11.99	32.19	25.13	69.31	37.12
1991	12.80	37.07	24.92	74.80	37.72
1992	13.46	36.63	37.37	87.46	50.83
1993	13.94	38.27	52.87	105.08	66.81
1994	15.03	33.29	51.21	99.53	66.24
Five Year Average	13.44	35.49	38.30	87.23	51.74
USMC 1990	17.94	22.42	26.58	66.94	44.52
1991	19.23	22.50	27.15	68.87	46.37
1992	20.44	26.59	25.35	72.38	45.79
1993	21.09	24.00	17.49	62.58	38.58
1994	21.30	19.67	18.32	59.28	39.62
Five Year Average	20.00	23.04	22.98	66.01	42.97

NOTE: All averages are simple averages, not weighted averages.

COMBAT VEHICLE DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour
Depot Activity Comparison By Year

Combat Vehicle Depots
FY1990 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
MC3 Albany	16.16	21.15	25.33	62.64	41.49
MC3 Barstow	19.72	23.70	27.83	71.25	47.55
Anniston	16.07	44.96	24.11	85.14	40.18
Red River	15.40	35.02	25.37	75.78	40.77
Letterkenny	16.48	16.60	25.92	59.00	42.40

Combat Vehicle Depots
FY1991 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
MC3 Albany	18.67	21.35	26.46	66.48	45.13
MC3 Barstow	19.78	23.65	27.83	71.26	47.61
Anniston	17.70	55.13	24.17	97.00	41.87
Red River	16.47	36.06	23.13	75.65	39.60
Letterkenny	17.03	20.03	27.48	64.54	44.51

NOTE: All averages are simple averages, not weighted averages.

COMBAT VEHICLE DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour
Depot Activity Comparison By Year

Combat Vehicle Depots FY1992 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
MC3 Albany	18.79	21.50	24.36	64.65	43.15
MC3 Barstow	22.09	31.68	26.33	80.10	48.42
Anniston	18.16	45.86	25.28	89.30	43.44
Red River	17.54	34.41	49.39	101.35	66.93
Letterkenny	18.12	29.61	37.44	85.18	55.56

Combat Vehicle Depots FY1993 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
MC3 Albany	19.66	19.62	13.44	52.72	33.10
MC3 Barstow	22.52	28.38	21.53	72.43	44.05
Anniston	19.08	44.04	37.92	101.04	57.00
Red River	17.82	43.84	58.71	120.37	76.53
Letterkenny	18.86	26.94	61.97	107.77	80.83

NOTE: All averages are simple averages, not weighted averages.

COMBAT VEHICLE DEPOTS

Annual Depot Maintenance Costs Per Direct Labor Hour
Depot Activity Comparison By Year

Combat Vehicle Depots
FY1994 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
MC3 Albany	20.04	19.36	13.28	52.68	33.32
MC3 Barstow	22.55	19.97	23.36	65.88	45.91
Anniston	20.03	48.02	53.92	121.97	73.95
Red River	19.01	28.48	53.83	101.32	72.84
Letterkenny	21.06	23.36	45.89	90.31	66.95

NOTE: All averages are simple averages, not weighted averages.

NAVAL SHIP YARDS

Annual Depot Maintenance Costs Per Direct Labor Hour By Naval Ship Yard

Long Beach NSY FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost		Material		Overhead		Total	Total w/o Material
1990	19.61		9.51		24.25		53.37	43.86
1991	20.36		10.41		28.75		59.52	49.11
1992	20.88		11.05		30.15		62.07	51.03
1993	23.74		10.62		33.77		68.13	57.51
1994	N/A		N/A		N/A		N/A	N/A
Average	21.15		10.40		29.23		60.77	50.38

Norfolk NSY FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost		Material		Overhead		Total	Total w/o Material
1990	16.46		7.84		56.09		80.39	72.55
1991	17.31		7.89		35.58		60.78	52.89
1992	18.83		7.17		34.08		60.08	52.91
1993	21.02		7.93		29.49		58.44	50.51
1994	N/A		N/A		N/A		N/A	N/A
Average	18.41		7.71		38.81		64.92	57.21

NOTE: All averages are simple averages, not weighted averages.

NAVAL SHIP YARDS

Annual Depot Maintenance Costs Per Direct Labor Hour By Naval Ship Yard

Portsmouth NSY FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost		Material		Overhead		Total	Total w/o Material
1990	17.11		4.07		30.47		51.65	47.58
1991	19.00		20.70		47.27		86.97	66.27
1992	19.91		5.61		32.95		58.47	52.86
1993	24.95		6.15		28.65		59.75	53.60
1994	N/A		N/A		N/A		N/A	N/A
Average	20.24		9.13		34.83		64.21	55.08

Pearl Harbor NSY FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost		Material		Overhead		Total	Total w/o Material
1990	21.46		5.80		30.17		57.43	51.63
1991	22.29		7.50		31.71		61.50	54.00
1992	23.54		6.12		36.05		65.71	59.59
1993	23.79		6.11		36.66		66.56	60.45
1994	N/A		N/A		N/A		N/A	N/A
Average	22.77		6.38		33.65		62.80	56.42

NOTE: All averages are simple averages, not weighted averages.

NAVAL SHIP YARDS

Annual Depot Maintenance Costs Per Direct Labor Hour By Naval Ship Yard

Puget Sound NSY
FY1990-FY1994 Cost per hour

Fiscal Year	Labor Cost	Material	Overhead	Total	Total w/o Material
1990	20.12	8.58	25.88	54.58	46.00
1991	19.90	6.67	26.08	52.65	45.98
1992	21.22	5.00	26.65	52.88	47.87
1993	24.17	15.52	36.99	76.68	61.16
1994	N/A	N/A	N/A	N/A	N/A
Average	21.35	8.94	28.90	59.20	50.25

NOTE: All averages are simple averages, not weighted averages.

NAVAL SHIP YARDS

Average Depot Maintenance Costs Per Direct Labor Hour By Year

Average FY1990-FY1994 Cost per hour							
Fiscal Year	Labor Cost		Material		Overhead		Total	Total w/o Material
1990	18.95		7.16		33.37		59.48	52.32
1991	19.77		10.64		33.88		64.28	53.65
1992	20.88		6.99		31.98		59.84	52.85
1993	23.53		9.27		33.11		65.91	56.65
1994	N/A		N/A		N/A		N/A	N/A
Four Year Average	20.78		8.51		33.08		62.38	53.87

NOTE: All averages are simple averages, not weighted averages.

NAVAL SHIP YARDS

Annual Depot Maintenance Costs Per Direct Labor Hour
Naval Ship Yard Comparison By Year

FY1990 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
Long Beach	19.61	9.51	24.25	53.37	43.86
Norfolk	16.46	7.84	56.09	80.39	72.55
Portsmouth	17.11	4.07	30.47	51.65	47.58
Pearl Harbor	21.46	5.80	30.17	57.43	51.63
Puget Sound	20.12	8.58	25.88	54.58	46.00

FY1991 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
Long Beach	20.36	10.41	28.75	59.52	49.11
Norfolk	17.31	7.89	35.58	60.78	52.89
Portsmouth	19.00	20.70	47.27	86.97	66.27
Pearl Harbor	22.29	7.50	31.71	61.50	54.00
Puget Sound	19.90	6.67	26.08	52.65	45.98

NOTE: All averages are simple averages, not weighted averages.

NAVAL SHIP YARDS

Annual Depot Maintenance Costs Per Direct Labor Hour
Naval Ship Yard Comparison By Year

FY1992 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
Long Beach	20.88	11.05	30.15	62.07	51.03
Norfolk	18.83	7.17	34.08	60.08	52.91
Portsmouth	19.91	5.61	32.95	58.47	52.86
Pearl Harbor	23.54	6.12	36.05	65.71	59.59
Puget Sound	21.22	5.00	26.65	52.88	47.87

FY1993 Cost per hour

Depot	Labor Cost	Material	Overhead	Total	Total w/o Material
Long Beach	23.74	10.62	33.77	68.13	57.51
Norfolk	21.02	7.93	29.49	58.44	50.51
Portsmouth	24.95	6.15	28.65	59.75	53.60
Pearl Harbor	23.79	6.11	36.06	66.56	60.45
Puget Sound	24.17	15.52	36.99	76.68	61.16

NOTE: All averages are simple averages, not weighted averages.

NAVAL SHIP YARDS

Annual Depot Maintenance Costs Per Direct Labor Hour
Naval Ship Yard Comparison By Year

FY1994 Cost per hour								
								Total w/o
Depot	Labor Cost		Material		Overhead		Total	Material
Long Beach	N/A		N/A		N/A		N/A	N/A
Norfolk	N/A		N/A		N/A		N/A	N/A
Portsmouth	N/A		N/A		N/A		N/A	N/A
Pearl Harbor	N/A		N/A		N/A		N/A	N/A
Puget Sound	N/A		N/A		N/A		N/A	N/A

NOTE: All averages are simple averages, not weighted averages.

OFFICE OF THE
SECRETARY OF DEFENSE

ROBERT T. MASON
Assistant Deputy Under Secretary
Maintenance Policy

Room 3B915
The Pentagon
Washington, DC 20301-3500

(703) 697-7980
DSN 227-7980
FAX (703) 693-7037

Provide manpower breakout for each ALC installation based on FY 97/4 authorization data. Include DMBA, Non AF Tenants, AF Tenants. Provide military and civilian numbers.

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MANPOWER AUTHORIZATIONS BY UNIT
FY97/4
as of Aug 94 manpower file

CMD	ORGANIZATION	OFF	AMN	FY 97 CIV	DRILL	TOTAL
** BASE: hill						
u	aag Det 405 af audit agency fo	0	0	29	0	29
u	acc 34 fighter sq	31	265	1	0	297
u	acc 388 fighter wg	12	40	6	0	58
u	acc 388 logistics gp	5	21	1	0	27
u	acc 388 logistics support sq	8	83	4	0	95
u	acc 388 maintenance sq	8	544	1	0	553
u	acc 388 maintenance tng ft	1	88	2	0	91
u	acc 388 operations gp	5	15	2	0	22
u	acc 388 operations spt sq	17	72	5	0	94
u	acc 4 fighter sq	31	262	1	0	294
u	acc 421 fighter sq	31	265	1	0	297
u	acc 729 air control sq	16	225	1	0	242
u	acc 84 radar evaluation sq	29	98	40	0	167
u	acc 01 ac 612 air operations gp	1	0	0	0	1
u	acc 01 ah 29 training systems sq	0	0	10	0	10
	acc 01 aq 4525 combat appl sq	0	0	0	0	0
	acc 01 k ACC Log Support gp	0	0	13	0	13
	aet 368 Recruiting sq	4	17	1	0	22
u	aet 368 Recruiting sq	1	1	1	0	3
u	aet 372 Recruiting gp	3	16	1	0	20
u	aet Det 533 371 training sq	0	20	0	0	20
u	afr 2400 res readiness mob sq	2	5	1	0	8
u	afr 405 combat log support sq	0	0	4	0	4
u	afr 419 Civil Engineer sq	0	0	3	0	3
u	afr 419 communications ft	0	0	1	0	1
u	afr 419 fighter wg	0	0	17	0	17
u	afr 419 logistics gp	0	0	7	0	7
u	afr 419 logistics support sq	0	0	10	0	10
u	afr 419 maintenance sq	0	0	87	0	87
u	afr 419 medical sq	0	0	3	0	3
u	afr 419 mission support sq	0	0	23	0	23
u	afr 419 operations gp	0	0	5	0	5
u	afr 419 operations spt ft	0	0	2	0	2
u	afr 419 security police sq	0	0	1	0	1
u	afr 419 support gp	0	0	1	0	1
u	afr 466 fighter sq	0	0	90	0	90
u	afr 67 aerial port sq	0	0	2	0	2
u	amc Det 8 air combat camera sr	0	0	0	0	0
u	elm 01 alc afelm disa jc	0	0	0	0	0
u	elm 01 hl afelm def fin acct ce	1	8	0	0	9
u	elm afelm deca ag	0	10	0	0	10
u	lct af legal ser ag fo	1	1	0	0	2
	mtc 15 test sq	0	0	0	0	0
	mtc 501 range sq	6	1	31	0	38
u	mtc 514 Flight Test sq	24	98	9	0	131
u	mtc 545 test gp	14	8	39	0	61
u	mtc 649 Civil Engineer sq	12	323	299	0	634

A1

MANPOWER AUTHORIZATIONS BY UNIT
FY97/4
as of Aug 94 manpower file

CMD	ORGANIZATION	OFF	AMN	FY 97 CIV	DRILL	TOTAL
u mtc 649	air base gp	17	131	557	0	705
u mtc 649	combat log support sq	3	225	1	0	229
u mtc 649	comm comp sys gp	2	103	90	0	195
u mtc 649	medical gp	105	208	113	0	426
u mtc 649	medical gp	0	1	0	0	1
u mtc 649	munitions sq	8	160	7	0	175
u mtc 649	operations spt sq	6	55	14	0	75
u mtc 649	security police sq	2	170	18	0	190
u mtc Det 1	651 munitions sq	1	28	0	0	29
u mtc 01	ad hq materiel system ce	2	0	30	0	32
u mtc 01	aj 485 engineering instl gp	26	225	326	0	577
u mtc 01	ea warner robins alc ce	0	0	1	0	1
u mtc 01	ya 615 specialized Msn sq	0	0	28	0	28
u mtc ogden	alc ce	34	50	466	0	550
u mtc ogden	alc ce	4	0	34	0	38
u mtc ogden	alc ce	18	1	1215	0	1234
mtc ogden	alc ce	32	10	1138	0	1180
mtc ogden	alc ce	14	0	247	0	261
mtc ogden	alc ce	36	91	455	0	582
u mtc ogden	alc ce	33	33	1887	0	1953
u ang 01	t5 299 range control sq	0	0	36	0	36
u osi Det 113	1 field investigatns dt	2	10	2	0	14
u paf 01	aa 8 supply sq	0	1	0	0	1
u tec 01	jj af op tst&eval ctr du	1	0	0	0	1
** Subtotal **		609	3988	7420	0	12017

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Base Name	Category	UNIT NAME	OFF AUTH	ENL AUTH	CIV AUTH	TOTAL
Hill AFB	Non AF Tenant	American Federation of Gov Employees	0	0	2	2
Hill AFB	Non AF Tenant	American Legion	0	0	0	0
Hill AFB	Non AF Tenant	American Red Cross	0	0	1	1
Hill AFB	Non AF Tenant	Army-Tooele Army Depot Rail Shop	0	0	48	48
Hill AFB	Non AF Tenant	Army-US Corps of Engineers	1	0	24	25
Hill AFB	Non AF Tenant	Army-Veterinary Services	0	0	2	2
Hill AFB	Non AF Tenant	Arts and Crafts	0	0	8	8
Hill AFB	Non AF Tenant	Base Restaurant	0	0	100	100
Hill AFB	Non AF Tenant	Bowling Center	0	0	17	17
Hill AFB	Non AF Tenant	Child Development Center	0	0	32	32
Hill AFB	Non AF Tenant	Civilian Recreation	0	0	7	7
Hill AFB	Non AF Tenant	DIS	0	0	6	6
Hill AFB	Non AF Tenant	DLA Liaison	0	1	1	2
Hill AFB	Non AF Tenant	DLA-Defk Revitilization and Marketing	0	0	60	60
Hill AFB	Non AF Tenant	DLA-Hill Site Distribution	0	0	539	539
Hill AFB	Non AF Tenant	Defense Commissary Agency	0	0	73	73
Hill AFB	Non AF Tenant	Defense Contract Audit Agency	0	0	1	1
Hill AFB	Non AF Tenant	Defense Finance Accounting Svcs	0	0	165	165
Hill AFB	Non AF Tenant	Defense Fuel Region West	0	0	1	1
Hill AFB	Non AF Tenant	Defense Information Services	0	0	411	411
Hill AFB	Non AF Tenant	Defense Printing Service	0	0	31	31
Hill AFB	Non AF Tenant	Financial Branch	0	0	11	11
Hill AFB	Non AF Tenant	First Security Bank	0	0	13	13
Hill AFB	Non AF Tenant	Golf Course	0	0	44	44
Hill AFB	Non AF Tenant	Human Resources	0	0	4	4
Hill AFB	Non AF Tenant	Lodging Facility	0	0	41	41
Hill AFB	Non AF Tenant	Market Publicity Office	0	0	3	3
Hill AFB	Non AF Tenant	NCO Club	0	0	79	79
Hill AFB	Non AF Tenant	Naval Ordinance Station Liaison	0	0	1	1
Hill AFB	Non AF Tenant	Officers Club	0	0	62	62
Hill AFB	Non AF Tenant	Outdoor Recreation	0	0	4	4
Hill AFB	Non AF Tenant	Resotime Recycling	0	0	12	12
Hill AFB	Non AF Tenant	Rod and Gun Club	0	0	1	1
Hill AFB	Non AF Tenant	Small Business Administration	0	0	5	5
Hill AFB	Non AF Tenant	US Postal Service	0	0	2	2
Hill AFB	Non AF Tenant	Veterinary	0	0	1	1
All Non Air Force Tenant Organizations Regardless of Size			7	67	1748	1822

Numbers are authorized personnel for FY 93/4. Consistent with BRAC Questionnaire data

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Base Name	Category	UNIT-NAME	OFF AUTH	ENL AUTH	CIV AUTH	TOTAL
Hill AFB	Non AF Tenant	Base Restaurant	0	0	100	100
Hill AFB	Non AF Tenant	DLA-Hill Site Distribution	0	0	539	539
Hill AFB	Non AF Tenant	Defense Finance Accounting Svc	1	8	146	155
Hill AFB	Non AF Tenant	Defense Information Services	4	48	359	411
All Non Air Force Tenant Organizations With Population Over 100			5	56	1144	1205

Numbers are authorized personnel for FY 93/4. Consistent with BRAC Questionnaire data

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AIR LOGISTICS CENTER MANPOWER HISTORY

	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01
HILL AFB (Ogden ALC)														
Foreign Military Sales (FMS)														
OFF	9	10	8	8	3	6	6	6	6	6	6	6	6	6
ENL	3	3	1	1	4	4	4	4	4	4	4	4	4	4
CIV	713	770	671	599	487	577	761	754	753	753	753	753	753	753
TOT	725	783	680	608	494	587	771	764	763	763	763	763	763	763
Depot Maintenance (Maint)														
OFF	45	47	46	45	45	27	27	26	26	26	26	26	26	26
ENL	356	358	357	355	355	352	353	326	326	326	326	326	326	326
CIV	6,634	6,553	6,696	5,611	5,567	5,427	4,571	4,269	4,205	4,205	4,205	4,205	4,205	4,205
TOT	7,035	6,958	7,099	6,011	5,967	5,806	4,951	4,621	4,557	4,557	4,557	4,557	4,557	4,557
Materiel Management (MM)														
OFF	126	119	107	108	112	105	109	111	111	111	111	111	111	111
ENL	106	102	102	102	112	94	65	98	98	98	98	98	98	98
CIV	2,392	2,150	1,854	1,631	1,583	1,082	930	856	789	789	789	789	789	789
TOT	2,624	2,371	2,063	1,841	1,807	1,281	1,104	1,065	998	998	998	998	998	998
Central Contracting (PK)														
OFF	16	16	16	15	11	12	12	11	11	11	11	11	11	11
ENL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CIV	437	410	410	380	324	233	162	168	150	150	150	150	150	150
TOT	453	426	426	395	335	245	174	179	161	161	161	161	161	161
Management Overhead (MGMT)														
OFF	9	10	10	10	9	8	7	7	7	7	7	7	7	7
ENL	11	13	13	12	12	12	12	12	12	12	12	12	12	12
CIV	67	71	77	74	67	58	55	44	44	44	44	44	44	44
TOT	87	94	100	96	88	78	74	63	63	63	63	63	63	63
Communications & Computers (COMM/COMP)														
OFF	5	5	5	8	11	12	8	8	8	8	8	8	8	8
ENL	-	-	-	93	99	134	101	100	95	95	95	95	95	95
CIV	523	497	472	451	397	358	82	75	79	79	79	79	79	79
TOT	528	502	477	552	507	504	191	183	182	182	182	182	182	182
Medical (MED)														
OFF	72	81	89	90	101	98	104	105	105	105	105	105	105	105
ENL	179	180	190	196	202	194	197	208	205	205	205	205	205	205
CIV	87	85	97	118	136	129	128	107	103	103	103	103	103	103
TOT	338	346	376	404	439	421	429	420	413	413	413	413	413	413
Base Operating Support (BOS)														
OFF	73	73	71	79	81	76	74	71	71	71	71	71	71	71
ENL	1,066	1,067	1,062	1,093	1,053	993	948	900	888	888	888	888	888	888
CIV	3,504	3,378	3,238	3,186	2,228	1,623	1,576	1,385	1,149	1,149	1,149	1,149	1,149	1,149
TOT	4,643	4,518	4,371	4,358	3,362	2,692	2,598	2,356	2,108	2,108	2,108	2,108	2,108	2,108
TOTAL ALC MANPOWER														
OFF	355	361	352	363	373	344	347	345	345	345	345	345	345	345
ENL	1,721	1,723	1,725	1,852	1,837	1,783	1,680	1,648	1,628	1,628	1,628	1,628	1,628	1,628
CIV	14,357	13,914	13,515	12,050	10,789	9,487	8,265	7,658	7,272	7,272	7,272	7,272	7,272	7,272
TOT	16,433	15,998	15,592	14,265	12,999	11,614	10,292	9,651	9,245	9,245	9,245	9,245	9,245	9,245

3/24/95

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AUTHORIZED MANPOWER AS OF AUG 94 MANPOWER FILE

	UNIT	FY 94 OFF	FY 94 AMN	FY 94 CIV	FY 94 TOT	FY 95 OFF	FY 95 AMN	FY 95 CIV	FY 95 TOT	FY 96 OFF	FY 96 AMN	FY 96 CIV	FY 96 TOT	FY 97 OFF	FY 97 AMN	FY 97 CIV	FY 97 TOT	FY 98 OFF	FY 98 AMN	FY 98 CIV	FY 98 TOT
	BASE POPULATION	790	3,373	12,461	16,624	762	3,176	11,454	15,392	748	3,164	11,358	15,270	738	3,148	11,055	14,941	738	3,148	11,000	14,886
	AIR FORCE MATERIAL COMMAND UNITS																				
	SAN ANTONIO AIR LOGISTICS CENTER UNITS																				
AFMC	san antonio alc	185	133	8812	9130	184	132	8248	8564	182	132	8185	8499	182	131	7929	8242	182	131	7880	8193
AFMC	Ol cm oklahoma city alc ce	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
		185	133	8813	9131	184	132	8249	8565	182	132	8186	8500	182	131	7930	8243	182	131	7881	8194
	AFMC SUPPORT UNITS																				
AFMC	651 air base gp	10	48	762	820	10	48	745	803	10	48	743	801	10	48	729	787	10	48	729	787
AFMC	651 Civil Engineer sq	6	88	531	625	6	86	502	594	6	81	493	580	6	75	476	557	6	75	476	557
AFMC	651 combat log support sq	4	167	0	171	3	131	0	134	3	131	0	134	3	131	0	134	3	131	0	134
AFMC	651 communications gp	5	122	101	228	5	128	105	238	5	120	105	230	5	120	105	230	5	120	105	230
AFMC	651 medical service sq	43	110	75	228	49	119	71	239	49	119	71	239	49	119	71	239	49	119	71	239
AFMC	651 operations spt sq	2	48	19	69	2	48	18	68	2	48	17	67	2	48	17	67	2	48	17	67
AFMC	651 security police sq	3	172	13	188	3	172	12	187	3	172	10	185	3	172	9	184	3	172	9	184
AFMC	651 services sq	2	4	45	51	2	4	44	50	2	4	44	50	2	4	43	49	2	4	43	49
		75	759	1546	2380	80	736	1497	2313	80	723	1483	2286	80	717	1450	2247	80	717	1450	2247
	OTHER AFMC UNITS																				
AFMC	Ol ad 412 logistics support sq	1	3	2	6	1	3	2	6	1	3	1	5	1	3	1	5	1	3	1	5
AFMC	1827 electronics instl sq	4	388	28	420	4	388	28	420	4	388	28	420	4	388	28	420	4	388	28	420
AFMC	313 Flight Test sq	10	7	4	21	10	7	4	21	10	7	4	21	10	7	4	21	10	7	4	21
AFMC	hq materiel system ce	1	1	33	35	1	1	29	31	1	0	24	25	1	0	24	25	1	0	24	25
		16	399	67	482	16	399	63	478	16	398	57	471	16	398	57	471	16	398	57	471
	OTHER COMMAND UNITS																				
	AIR INTELLIGENCE AGENCY UNITS																				
AIA	hq aia	185	257	318	760	184	257	318	759	184	257	318	759	181	255	315	751	181	255	315	751
AIA	48 intelligence sq	1	2	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIA	67 intelligence gp	2	2	1	5	2	2	1	5	2	2	1	5	2	2	1	5	2	2	1	5
AIA	67 intelligence wg	7	38	12	57	7	38	12	57	7	37	12	56	7	37	12	56	7	37	12	56
AIA	67 operations spt sq	14	61	3	78	14	61	3	78	14	61	3	78	14	61	3	78	14	61	3	78
AIA	6960 electronic securit gp	10	69	73	152	10	67	73	150	10	67	73	150	9	68	71	148	9	68	71	148
AIA	6960 security police sq	2	124	4	130	2	124	4	130	2	124	4	130	2	124	4	130	2	124	4	130
AIA	6967 contracting ft	0	0	26	26	0	0	24	24	0	0	24	24	0	0	24	24	0	0	24	24
AIA	6968 alteration & instl sq	3	57	21	81	3	57	21	81	3	57	21	81	3	57	18	78	3	57	18	78
AIA	93 intelligence sq	8	368	32	408	9	414	33	456	8	429	33	470	8	429	31	468	8	429	31	468
AIA	Det 1 67 intelligence wg	2	0	1	3	2	0	1	3	2	0	1	3	2	0	1	3	2	0	1	3
AIA	Ol xo Det 1 Air Intel Agency fo	5	14	3	22	3	5	3	11	3	5	3	11	3	5	3	11	3	5	3	11
AIA	af crypto spt cen ce	22	178	379	579	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIA	af info warfare ce	188	358	251	797	189	371	251	811	186	371	251	808	184	373	251	808	184	373	251	808
AIA	aia info service ft	0	0	0	0	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
AIA	aia intel sys msn sq	5	157	21	183	5	135	20	160	5	135	19	159	5	135	19	159	5	135	19	159
AIA	aia intel sys tech sq	7	98	33	138	8	91	33	132	8	91	33	132	8	91	33	132	8	91	33	132
AIA	aia intel systems gp	21	55	48	126	21	55	48	124	19	57	47	123	16	60	47	123	16	60	47	123
		484	1838	1227	3549	459	1678	845	2982	453	1694	843	2990	444	1698	833	2975	444	1698	833	2975
	AIR FORCE INFORMATION SERVICE																				
AFNEWS	Ol mis af news ag fo	5	42	50	97	5	42	46	93	5	41	46	92	5	38	45	88	5	38	43	86
AFNEWS	af broadcasting sr	1	20	19	40	1	20	22	43	0	18	23	41	0	18	20	38	0	18	20	38
AFNEWS	af news ag fo	3	21	14	38	3	21	10	34	3	21	10	34	3	20	10	33	3	20	8	31
		9	83	83	175	9	83	78	170	8	80	79	167	8	76	75	159	8	76	71	155
	AIR FORCE RESERVE UNITS																				
AFRES	2400 res readiness mob sq	0	5	1	6	0	5	1	6	0	5	1	6	0	5	1	6	0	5	1	6

AUTHORIZED MANPOWER AS OF AUG 94 MANPOWER FILE

	UNIT	FY 94 OFF	FY 94 AMN	FY 94 CIV	FY 94 TOT	FY 95 OFF	FY 95 AMN	FY 95 CIV	FY 95 TOT	FY 96 OFF	FY 96 AMN	FY 96 CIV	FY 96 TOT	FY 97 OFF	FY 97 AMN	FY 97 CIV	FY 97 TOT	FY 98 OFF	FY 98 AMN	FY 98 CIV	FY 98 TOT
AFRES	26 aerial port sq	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2
AFRES	307 RED HORSE sq	0	0	15	15	0	0	15	15	0	0	15	15	0	0	15	15	0	0	15	15
AFRES	32 aeromed evac gp	0	0	15	15	0	0	15	15	0	0	15	15	0	0	15	15	0	0	15	15
AFRES	34 aeromed evac sq	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2
AFRES	404 combat log support sq	0	0	4	4	0	0	4	4	0	0	4	4	0	0	4	4	0	0	4	4
AFRES	433 Civil Engineer sq	0	0	3	3	0	0	3	3	0	0	3	3	0	0	3	3	0	0	3	3
AFRES	433 aircraft generat sq	0	0	171	171	0	0	171	171	0	0	171	171	0	0	171	171	0	0	171	171
AFRES	433 airlift control ft	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2
AFRES	433 airlift wg	0	0	36	36	0	0	36	36	0	0	36	36	0	0	36	36	0	0	36	36
AFRES	433 component repair sq	0	0	121	121	0	0	118	118	0	0	106	106	0	0	106	106	0	0	104	104
AFRES	433 equipment maint sq	0	0	150	150	0	0	150	150	0	0	150	150	0	0	150	150	0	0	150	150
AFRES	433 logistics gp	0	0	12	12	0	0	12	12	0	0	12	12	0	0	12	12	0	0	12	12
AFRES	433 logistics support sq	0	0	45	45	0	0	45	45	0	0	45	45	0	0	45	45	0	0	45	45
AFRES	433 medical sq	0	0	5	5	0	0	5	5	0	0	5	5	0	0	5	5	0	0	5	5
AFRES	433 mission support sq	0	0	38	38	0	0	38	38	0	0	38	38	0	0	38	38	0	0	38	38
AFRES	433 operations gp	0	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7
AFRES	433 operations spt ft	0	0	12	12	0	0	12	12	0	0	12	12	0	0	12	12	0	0	12	12
AFRES	433 security police sq	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
AFRES	433 support gp	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2
AFRES	68 airlift sq	0	0	28	28	0	0	28	28	0	0	28	28	0	0	28	28	0	0	28	28
AFRES	74 aerial port sq	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2
AFRES	8085 security police ft	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
		0	5	675	680	0	5	672	677	0	5	660	665	0	5	660	665	0	5	658	663
AMC	Det 1 615 air mobility ops gp	1	76	1	78	1	76	1	78	1	76	1	78	1	76	1	78	1	76	1	78
AMC	Det 5 375 aeromed evac sq	1	5	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AMC	Ol l 615 air mobility ops gp	2	0	0	2	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1
AFAA	Det 410 af audit agency fo	0	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30
AFAA	Ol h af audit agency fo	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2
ACC	Ol ax 4525 combat appl sq	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0
ACC	Ol x 612 air operations gp	3	0	0	3	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1
AETC	Ol a Det 405 371 training sq	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3
AFELM	Det 12 ce	0	12	0	12	0	12	0	12	0	12	0	12	0	12	0	12	0	12	0	12
AFELM	Ol alc afelm disa jc	2	25	0	27	2	17	0	19	1	8	0	9	0	0	0	0	0	0	0	0
AFELM	Ol csc afelm disa jc	6	2	0	8	3	1	0	4	0	1	0	1	0	0	0	0	0	0	0	0
AFELM	Ol kl afelm def fin acct ce	3	7	0	10	3	7	0	10	2	7	0	9	2	7	0	9	2	7	0	9
AFELM	afelm deca ag	2	8	0	10	2	8	0	10	2	8	0	10	2	8	0	10	2	8	0	10
AFELM	afelm deca ag	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
AFELM	afelm def cour svc do	1	4	0	5	1	4	0	5	1	4	0	5	1	4	0	5	1	4	0	5
AFCESA	Ol b af civ engr spt ag fo	0	9	16	25	0	10	16	26	0	12	16	28	0	12	16	28	0	12	16	28
HAF	u s air force hq	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1

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Base Name	Category	UNIT NAME	OFF AUTH	ENL AUTH	CIV AUTH	TOTAL
Kelly AFB	Non AF Tenant	748th Intelligence Bn	16	349	6	369
Kelly AFB	Non AF Tenant	93 IS	8	327	32	367
Kelly AFB	Non AF Tenant	Company U Marine Spt Bn	0	16	0	16
Kelly AFB	Non AF Tenant	DECA Medwest Region	3	11	94	108
Kelly AFB	Non AF Tenant	DLA	0	0	937	937
Kelly AFB	Non AF Tenant	Defense Accounting Office	13	0	166	179
Kelly AFB	Non AF Tenant	Defense Audit Agency	0	0	2	2
Kelly AFB	Non AF Tenant	Defense Commissary Agency West Svc Ctr	1	0	302	303
Kelly AFB	Non AF Tenant	Defense Courier Service	1	0	0	1
Kelly AFB	Non AF Tenant	Defense Criminal Investigative Svc	0	0	6	6
Kelly AFB	Non AF Tenant	Defense Printing Service	0	0	50	50
Kelly AFB	Non AF Tenant	Defense Reutilization and Marketing Ofc	0	0	85	85
Kelly AFB	Non AF Tenant	Fred National Bank	0	0	8	8
Kelly AFB	Non AF Tenant	GSA Utilization Ofc	0	0	2	2
Kelly AFB	Non AF Tenant	NSA	0	51	0	51
Kelly AFB	Non AF Tenant	San Antonio Credit Union	0	0	11	11
Kelly AFB	Non AF Tenant	Security Service Federal Credit Union	0	0	10	10
Kelly AFB	Non AF Tenant	Services (NAF)	0	0	400	400
Kelly AFB	Non AF Tenant	Small Business ADM	0	0	2	2
Kelly AFB	Non AF Tenant	US Government Printing Office	0	0	36	36
Kelly AFB	Non AF Tenant	Univ of Texas at San Antonio	0	0	0	0
All Non Air Force Tenant Organizations Regardless of Size			47	768	2153	2968

Numbers are authorized personnel for FY 93/4. Consistent with BRAC Questionnaire data

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Base Name	Category	UNIT NAME	OFF AUTH	ENL AUTH	CIV AUTH	TOTAL
Kelly AFB	Non AF Tenant	746 MI Intelligence BN	5	359	5	369
Kelly AFB	Non AF Tenant	93 IS	8	327	32	367
Kelly AFB	Non AF Tenant	DECA Medwest Region	3	11	94	108
Kelly AFB	Non AF Tenant	DLA [illegible]	0	[illegible]	937	937
Kelly AFB	Non AF Tenant	Defense Accounting Office	13	0	166	179
Kelly AFB	Non AF Tenant	Defense Commissary Agency West Svc Ctr	1	0	302	303
Kelly AFB	Non AF Tenant	Services (NAF)	0	0	400	400
All Non Air Force Tenant Organizations With Population Over 100			40	687	1936	2663

Numbers are authorized personnel for FY 93/4. Consistent with BRAC Questionnaire data

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AIR LOGISTICS CENTER MANPOWER HISTORY

	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01
KELLY AFB (San Antonio ALC)														
Foreign Military Sales (FMS)														
OFF	17	18	19	17	17	16	15	15	15	15	15	15	15	15
ENL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CIV	762	705	616	573	684	578	681	722	708	708	708	708	708	708
TOT	779	723	635	590	701	594	696	737	723	723	723	723	723	723
Depot Maintenance (Maint)														
OFF	43	39	38	38	37	35	35	34	34	34	34	34	34	34
ENL	146	143	143	143	143	159	159	128	128	128	128	128	128	128
CIV	7,600	7,584	7,448	6,660	6,817	7,048	5,661	5,835	5,358	5,358	5,358	5,358	5,358	5,358
TOT	7,789	7,766	7,629	6,841	6,997	7,242	5,855	5,997	5,520	5,520	5,520	5,520	5,520	5,520
Materiel Management (MM)														
OFF	150	149	131	127	127	117	107	101	97	97	97	97	97	97
ENL	352	352	347	320	331	347	135	130	130	130	130	130	130	130
CIV	2,940	2,797	2,519	2,357	2,803	2,639	2,174	2,000	2,080	2,080	2,080	2,080	2,080	2,080
TOT	3,442	3,298	2,997	2,804	3,261	3,103	2,416	2,231	2,307	2,307	2,307	2,307	2,307	2,307
Central Contracting (PK)														
OFF	17	17	17	16	13	13	13	13	13	13	13	13	13	13
ENL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CIV	646	598	586	538	492	431	373	328	357	357	357	357	357	357
TOT	663	615	603	554	505	444	386	341	370	370	370	370	370	370
Management Overhead (MGMT)														
OFF	7	6	7	7	8	9	9	8	8	8	8	8	8	8
ENL	12	12	12	11	11	11	11	11	11	11	11	11	11	11
CIV	73	79	85	87	70	56	48	45	45	45	45	45	45	45
TOT	92	97	104	105	89	76	68	64	64	64	64	64	64	64
Communications & Computers (COMM/COMP)														
OFF	4	4	4	7	8	7	5	14	14	14	14	14	14	14
ENL	-	-	-	152	166	171	150	226	218	218	218	218	218	218
CIV	408	392	374	431	358	278	96	266	266	266	266	266	266	266
TOT	412	396	378	590	532	456	251	506	498	498	498	498	498	498
Medical (MED)														
OFF	8	9	11	12	46	42	43	49	49	49	49	49	49	49
ENL	20	20	19	20	104	105	110	119	119	119	119	119	119	119
CIV	31	31	30	33	74	73	75	67	64	64	64	64	64	64
TOT	59	60	60	65	224	220	228	235	232	232	232	232	232	232
Base Operating Support (BOS)														
OFF	65	67	69	66	64	54	63	80	83	83	83	83	83	83
ENL	559	568	556	527	474	466	455	652	651	651	651	651	651	651
CIV	4,235	4,071	3,976	3,666	2,889	1,447	1,400	1,601	1,578	1,578	1,578	1,578	1,578	1,578
TOT	4,859	4,706	4,601	4,259	3,427	1,967	1,918	2,333	2,312	2,312	2,312	2,312	2,312	2,312
TOTAL ALC MANPOWER														
OFF	311	309	296	290	320	293	290	314	313	313	313	313	313	313
ENL	1,089	1,095	1,077	1,173	1,229	1,259	1,020	1,266	1,257	1,257	1,257	1,257	1,257	1,257
CIV	16,695	16,257	15,634	14,345	14,187	12,550	10,508	10,864	10,456	10,456	10,456	10,456	10,456	10,456
TOT	18,095	17,661	17,007	15,808	15,736	14,102	11,818	12,444	12,026	12,026	12,026	12,026	12,026	12,026

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MANPOWER AUTHORIZATIONS BY UNIT
FY97/4
as of Aug 94 manpower file

CMD	ORGANIZATION	OFF	AMN	FY 97 CIV	DRILL	TOTAL
** BASE: mcclellan						
u aag	Det 415 af audit agency fo	0	0	23	0	23
u acc	01 aw 4525 combat appl sq	0	0	0	0	0
u aet	364 Recruiting sq	1	2	1	0	4
u aet	364 Recruiting sq	4	16	2	0	22
u aet	Det 510 373 training sq	0	7	1	0	8
u aet	01 ac Det 8 cap usaf ap	4	3	2	0	9
u afr	2400 res readiness mob sq	0	2	1	0	3
u afr	314 air refueling sq	0	0	60	0	60
u afr	4 air force af	0	0	49	0	49
u afr	406 combat log support sq	0	0	4	0	4
u afr	940 Civil Engineer sq	0	0	4	0	4
u afr	940 air refueling gp	0	0	26	0	26
u afr	940 logistics gp	0	0	7	0	7
u afr	940 logistics support sq	0	0	13	0	13
u afr	940 maintenance sq	0	0	53	0	53
afr	940 medical sq	0	0	3	0	3
afr	940 mission support sq	0	0	21	0	21
afr	940 operations gp	0	0	6	0	6
u afr	940 operations spt ft	0	0	16	0	16
u afr	940 security police sq	0	0	1	0	1
u afr	01 wm 2400 res readiness mob sq	1	1	2	0	4
u amc	01 d 615 air mobility ops gp	2	0	0	0	2
u amc	01 w air mobility cos st	0	2	0	0	2
u elm	01 alc afelm disa jc	0	0	0	0	0
u elm	01 m Det 7 AFELM Comm Tech el	0	3	0	0	3
u elm	01 mc afelm def fin acct ce	0	8	0	0	8
u elm	afelm deca ag	0	9	0	0	9
u elm	afelm dla-d depot dl	1	0	0	0	1
u fsa	01 b hq af flt std ag fo	1	0	0	0	1
u lct	af legal ser ag fo	1	1	0	0	2
u mtc	1849 electronics instl sq	6	282	28	0	316
u mtc	337 Flight Test sq	11	5	0	0	16
u mtc	652 Civil Engineer sq	11	200	318	0	529
u mtc	652 air base gp	8	87	366	0	461
u mtc	652 combat log support sq	3	201	1	0	205
u mtc	652 comm comp sys gp	7	283	159	0	449
u mtc	652 medical gp	162	389	159	0	710
u mtc	652 operations spt sq	3	47	13	0	63
u mtc	652 security police sq	2	156	6	0	164
u mtc	01 ad Det 42 sacramento alc ce	5	38	89	0	132
u mtc	01 ag hq materiel system ce	0	0	34	0	34
u mtc	01 bb 46 test wg	0	0	1	0	1
mtc	01 ey oklahoma city alc ce	0	0	2	0	2
		9	5	10	0	24
u mtc	sacramento alc ce	43	16	2039	0	2098
u mtc	sacramento alc ce	10	20	1003	0	1033
u mtc	sacramento alc ce	15	3	190	0	208

MANPOWER AUTHORIZATIONS BY UNIT
FY97/4
as of Aug 94 manpower file

CMD	ORGANIZATION	OFF	AMN	FY 97 CIV	DRILL	TOTAL
u mtc sacramento alc ce		38	81	547	0	666
u mtc sacramento alc ce		33	8	1876	0	1917
u mtc sacramento alc ce		9	13	156	0	178
u mtc sacramento alc ce		11	2	1212	0	1225
u osi Det 112 1 field investigatns dt		3	8	5	0	16
u tap tech operations fo		33	241	37	0	311
** Subtotal **		437	2139	8546	0	11122

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Base Name	Category	UNIT_NAME	OFF_AUTH	ENL_AUTH	CIV_AUTH	TOTAL
McClellan AFB	Non AF Tenant	AAFES	0	0	70	70
McClellan AFB	Non AF Tenant	AAFES (part-time)	0	0	257	257
McClellan AFB	Non AF Tenant	Canadian Forces	2	0	1	3
McClellan AFB	Non AF Tenant	DECA	0	11	90	101
McClellan AFB	Non AF Tenant	DECA (part-time)	0	0	68	68
McClellan AFB	Non AF Tenant	DFAS	1	8	130	139
McClellan AFB	Non AF Tenant	DRMO	0	0	73	73
McClellan AFB	Non AF Tenant	Defense Logistics Agency	1	0	602	603
McClellan AFB	Non AF Tenant	FAA	0	0	80	80
McClellan AFB	Non AF Tenant	Fefense Printing Service	0	0	51	51
McClellan AFB	Non AF Tenant	McClellan Credit Union	0	0	9	9
McClellan AFB	Non AF Tenant	NAF (full-time)	0	0	218	218
McClellan AFB	Non AF Tenant	NAF (part-time)	0	9	202	211
McClellan AFB	Non AF Tenant	Red Cross	0	0	1	1
McClellan AFB	Non AF Tenant	Royal Australian Air Force	6	3	4	13
McClellan AFB	Non AF Tenant	Safe Credit Union	0	0	6	6
McClellan AFB	Non AF Tenant	Safe Credit Union (part-time)	0	0	6	6
McClellan AFB	Non AF Tenant	US Coast Guard	26	164	0	190
McClellan AFB	Non AF Tenant	US GAO Site	0	0	9	9
McClellan AFB	Non AF Tenant	US Post Office	0	0	2	2
All Non Air Force Tenant Organizations Regardless of Size			36	195	1879	2110

Numbers are authorized personnel for FY 93/4. Consistent with BRAC Questionnaire data

Base Name	Category	UNIT_NAME	OFF_AUTH	ENL_AUTH	CIV_AUTH	TOTAL
McClellan AFB	Non AF Tenant	AAFES (part-time)	0	0	257	257
McClellan AFB	Non AF Tenant	DECA	0	11	90	101
McClellan AFB	Non AF Tenant	DFAS	1	8	130	139
McClellan AFB	Non AF Tenant	Defense Logistics Agency	1	0	602	603
McClellan AFB	Non AF Tenant	NAF (full-time)	0	0	218	218
McClellan AFB	Non AF Tenant	NAF (part-time)	0	9	202	211
McClellan AFB	Non AF Tenant	US Coast Guard	26	164	0	190
All Non Air Force Tenant Organizations With Population Over 100			28	192	1499	1719

Numbers are authorized personnel for FY 93/4. Consistent with BRAC Questionnaire data

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AIR LOGISTICS CENTER MANPOWER HISTORY

	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01
MCCLELLAN AFB (Sacramento ALC)														
Foreign Military Sales (FMS)														
OFF	13	10	8	8	4	4	4	4	4	4	4	4	4	4
ENL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CIV	527	401	279	212	203	187	367	378	374	374	374	374	374	374
TOT	540	411	287	220	207	191	371	382	378	378	378	378	378	378
Depot Maintenance (Maint)														
OFF	40	40	40	40	40	40	33	32	32	32	32	32	32	32
ENL	263	263	262	260	259	252	248	183	183	183	183	183	183	183
CIV	6,026	6,035	6,045	5,415	5,322	5,354	5,104	4,890	4,480	4,480	4,480	4,480	4,480	4,480
TOT	6,329	6,338	6,347	5,715	5,621	5,646	5,385	5,105	4,695	4,695	4,695	4,695	4,695	4,695
Materiel Management (MM)														
OFF	104	105	100	100	112	97	96	81	80	80	80	80	80	80
ENL	90	91	93	91	153	30	29	23	23	23	23	23	23	23
CIV	2,283	2,301	2,297	2,093	2,421	1,884	1,634	1,284	1,440	1,440	1,440	1,440	1,440	1,440
TOT	2,477	2,497	2,490	2,284	2,686	2,011	1,759	1,388	1,543	1,543	1,543	1,543	1,543	1,543
Central Contracting (PK)														
OFF	16	16	16	14	11	11	11	10	10	10	10	10	10	10
ENL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CIV	326	333	304	280	251	174	121	108	112	112	112	112	112	112
TOT	342	349	320	294	262	185	132	118	122	122	122	122	122	122
Management Overhead (MGMT)														
OFF	13	13	13	14	13	10	7	6	6	6	6	6	6	6
ENL	22	22	22	22	22	12	14	13	13	13	13	13	13	13
CIV	61	64	72	71	64	58	38	29	30	30	30	30	30	30
TOT	96	99	107	107	99	80	59	48	49	49	49	49	49	49
Communications & Computers (COMM/COMP)														
OFF	3	3	3	11	11	26	35	18	17	17	17	17	17	17
ENL	-	-	22	269	293	292	299	269	255	255	255	255	255	255
CIV	477	458	443	457	356	346	157	117	127	127	127	127	127	127
TOT	480	461	468	737	660	664	491	404	399	399	399	399	399	399
Medical (MED)														
OFF	38	40	46	54	57	146	157	157	157	157	157	157	157	157
ENL	110	109	121	127	346	365	320	396	393	393	393	393	393	393
CIV	84	83	91	92	94	161	167	147	141	141	141	141	141	141
TOT	232	232	258	273	497	672	644	700	691	691	691	691	691	691
Base Operating Support (BOS)														
OFF	62	64	64	61	52	56	54	68	68	68	68	68	68	68
ENL	973	1,015	1,039	1,133	1,097	885	836	698	689	689	689	689	689	689
CIV	3,964	3,825	3,554	3,301	1,730	1,517	1,382	1,113	1,090	1,090	1,090	1,090	1,090	1,090
TOT	4,999	4,904	4,657	4,495	2,879	2,458	2,272	1,879	1,847	1,847	1,847	1,847	1,847	1,847
TOTAL ALC MANPOWER														
OFF	289	291	290	302	300	390	397	376	374	374	374	374	374	374
ENL	1,458	1,500	1,559	1,902	2,170	1,836	1,746	1,582	1,556	1,556	1,556	1,556	1,556	1,556
CIV	13,748	13,500	13,085	11,921	10,441	9,681	8,970	8,066	7,794	7,794	7,794	7,794	7,794	7,794
TOT	15,495	15,291	14,934	14,125	12,911	11,907	11,113	10,024	9,724	9,724	9,724	9,724	9,724	9,724

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MANPOWER AUTHORIZATIONS BY UNIT
FY97/4
as of Aug 94 manpower file

CMD	ORGANIZATION	OFF	AMN	FY 97 CIV	DRILL	TOTAL
**	BASE: robins					
u	aag Det 425 af audit agency fo	0	0	29	0	29
u	acc 5 combat comm gp	3	11	1	0	15
u	acc 5 combat comm spt sq	9	66	9	0	84
u	acc 51 combat comm sq	5	209	0	0	214
u	acc 52 combat comm sq	5	139	0	0	144
u	acc 53 combat comm sq	5	139	0	0	144
u	acc 54 combat comm sq	4	136	0	0	140
u	acc Ol av 4525 combat appl sq	0	0	0	0	0
u	acc Ol z ACC Log Support gp	0	0	8	0	8
u	aet 367 Recruiting gp	2	16	1	0	19
u	aet Ol a Det 317 373 training sq	0	15	0	0	15
u	aet Ol f air force rotc cr	1	0	0	0	1
u	aet Ol h college for en pme cl	0	9	1	0	10
u	afr 2400 res readiness mob sq	32	102	271	0	405
u	afr 402 Civil Engineer sq	0	0	1	0	1
	afr 402 combat log support sq	0	0	4	0	4
	afr 8600 support gp	0	0	66	0	66
	afr 94 aerial port sq	0	0	2	0	2
u	afr Ol a 94 aerosp pat stag sq	0	0	1	0	1
u	afr Ol ew 94 mission support sq	0	0	14	0	14
u	afr af reserve sa	114	136	177	0	427
u	afr cmd band af res bd	2	58	0	0	60
u	amc 19 air refueling wg	21	50	2	0	73
u	amc 19 logistics gp	3	6	1	0	10
u	amc 19 logistics support sq	2	133	4	0	139
u	amc 19 maintenance sq	2	154	3	0	159
u	amc 19 operations gp	7	7	1	0	15
u	amc 19 operations spt sq	14	23	1	0	38
u	amc 712 air refueling sq	47	149	0	0	196
u	amc 99 air refueling sq	62	190	0	0	252
u	amc Ol a air mobility cos st	0	2	0	0	2
u	elm Ol alc afelm disa jc	0	0	0	0	0
u	elm Ol fa afelm def fin acct ce	1	16	0	0	17
u	elm afelm deca ag	0	11	0	0	11
u	elm afelm def fin acct ce	0	0	0	0	0
u	elm afelm dla-d depot dl	4	2	0	0	6
u	lct af legal ser ag fo	1	1	0	0	2
u	mtc 339 Flight Test sq	12	13	1	0	26
u	mtc 653 Civil Engineer sq	13	257	262	0	532
u	mtc 653 air base gp	9	58	729	0	796
u	mtc 653 combat log support sq	3	156	1	0	160
u	mtc 653 comm comp sys gp	5	83	80	0	168
	mtc 653 medical gp	108	236	121	0	465
	mtc 653 operations spt sq	5	40	10	0	55
u	mtc 653 security police sq	4	211	11	0	226
u	mtc Det 1 Elec Sys ce	9	12	1	0	22
u	mtc Det 8 645 materiel sq	20	16	188	0	224

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MANPOWER AUTHORIZATIONS BY UNIT
FY97/4
as of Aug 94 manpower file

CMD	ORGANIZATION	OFF	AMN	FY 97 CIV	DRILL	TOTAL
u mtc	01 aa 46 test wg	1	0	0	0	1
u mtc	01 lr Aero Sys ce	0	0	0	0	0
u mtc	warner robins alc ce	13	20	1113	0	1146
u mtc	warner robins alc ce	12	1	320	0	333
u mtc	warner robins alc ce	25	4	794	0	823
u mtc	warner robins alc ce	13	9	1862	0	1884
u mtc	warner robins alc ce	14	1	465	0	480
u mtc	warner robins alc ce	11	2	83	0	96
u mtc	warner robins alc ce	16	7	651	0	674
u mtc	warner robins alc ce	7	0	227	0	234
u mtc	warner robins alc ce	17	0	366	0	383
u mtc	warner robins alc ce	1	2	132	0	135
u mtc	warner robins alc ce	35	71	550	0	656
u mtc	warner robins alc ce	12	1	973	0	986
u osi	Det 105 1 field investigatns dt	2	7	5	0	14
u paf	01 aa 18 supply sq	0	0	0	0	0
soc	electronic combat ft	7	3	3	0	13
spc	9 space warning sq	13	67	4	0	84
Subtotal **		733	3057	9549	0	13339

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Base Name	Category	UNIT NAME	OFF AUTH	ENL AUTH	CIV AUTH	TOTAL
Robins AFB	Non AF Tenant	American Red Cross	0	0	1	1
Robins AFB	Non AF Tenant	Barber/Beauty Shop	0	0	9	9
Robins AFB	Non AF Tenant	Base Exchange	0	0	139	139
Robins AFB	Non AF Tenant	Base Exchange - Admin	0	0	8	8
Robins AFB	Non AF Tenant	Base Restaurant	0	0	120	120
Robins AFB	Non AF Tenant	Baskin Robins	0	0	2	2
Robins AFB	Non AF Tenant	Billiards	0	0	68	68
Robins AFB	Non AF Tenant	Canadian Forces Llaison Office	1	0	0	1
Robins AFB	Non AF Tenant	Civilian Assistance & Redeployment	0	0	8	8
Robins AFB	Non AF Tenant	Civilian Welfare Fund	0	0	4	4
Robins AFB	Non AF Tenant	Class VI	0	0	19	19
Robins AFB	Non AF Tenant	Customer Support Assistance Office	0	0	1	1
Robins AFB	Non AF Tenant	Defense Commissary Agency	10	124	62	174
Robins AFB	Non AF Tenant	Defense Contract Audit Agency	0	0	1	1
Robins AFB	Non AF Tenant	Defense Contract Management District South	0	0	19	19
Robins AFB	Non AF Tenant	Defense Finance & Account Svc, DAO-DE	1	3	6	10
Robins AFB	Non AF Tenant	Defense Finance & Accounting Service	1	21	10	32
Robins AFB	Non AF Tenant	Defense Information Systems Agency (A)	2	4	174	180
Robins AFB	Non AF Tenant	Defense Information Systems Agency (P)	1	0	10	11
Robins AFB	Non AF Tenant	Defense Investigative Service	0	0	4	4
Robins AFB	Non AF Tenant	Defense Printing Service	0	0	33	33
Robins AFB	Non AF Tenant	Defense Reutilization & Marketing Office	0	0	82	82
Robins AFB	Non AF Tenant	Distribution Depot Warner Robins GA	1	10	838	839
Robins AFB	Non AF Tenant	Federal Aviation Administration	0	0	38	38
Robins AFB	Non AF Tenant	Floral Shop	0	0	2	2
Robins AFB	Non AF Tenant	Gift Shop	0	0	2	2
Robins AFB	Non AF Tenant	Global Positioning System (USN)	2	0	3	5
Robins AFB	Non AF Tenant	Global Positioning System Manager (USA)	0	0	5	5
Robins AFB	Non AF Tenant	HQ AFRES Services Division	0	0	18	18
Robins AFB	Non AF Tenant	Hot Dog Stand	0	0	4	4
Robins AFB	Non AF Tenant	Israeli Liaison Office	1	0	0	1
Robins AFB	Non AF Tenant	Japanese Liaison Office	1	0	0	1
Robins AFB	Non AF Tenant	Laundry	0	0	4	4
Robins AFB	Non AF Tenant	Military Clothing Sales	0	0	8	8
Robins AFB	Non AF Tenant	Morale, Welfare, Recreation & Services	0	0	436	436
Robins AFB	Non AF Tenant	Optical Shop	0	0	2	2
Robins AFB	Non AF Tenant	Procurment Center Representative	0	0	0	0
Robins AFB	Non AF Tenant	Robins Federal Credit Union	0	0	236	236
Robins AFB	Non AF Tenant	Royal Australian Air Force Liaison Offic	1	0	0	1

Numbers are authorized personnel for FY 93/4. Consistent with BRAC Questionnaire data

Robins AFB	Non AF Tenant	Saudi Arabian Liaison Office	1	0	0	1
Robins AFB	Non AF Tenant	Scheduled Airline Traffic Office	0	0	12	12
Robins AFB	Non AF Tenant	Section 6, Base Schools	0	0	144	144
Robins AFB	Non AF Tenant	Section 6, Base Schools (Cafeteria)	1	0	10	11
Robins AFB	Non AF Tenant	Service Station	0	1	15	16
Robins AFB	Non AF Tenant	Shoppette	0	0	10	10
Robins AFB	Non AF Tenant	Small & Disadvantaged Business Office	0	0	5	5
Robins AFB	Non AF Tenant	Snack Bar	0	0	7	7
Robins AFB	Non AF Tenant	Systems Automation Center	0	0	9	9
Robins AFB	Non AF Tenant	Theater	0	0	7	7
Robins AFB	Non AF Tenant	Trust Company Bank	0	0	6	6
Robins AFB	Non AF Tenant	US Army Corps of Engineers	1	0	13	14
Robins AFB	Non AF Tenant	US Coast Guard Liaison Office	1	0	0	1
Robins AFB	Non AF Tenant	US Postal Service (Contract)	0	0	10	10
Robins AFB	Non AF Tenant	Vendors (Contract)	0	0	7	7
Robins AFB	Non AF Tenant	Veterinary Services (USA)	1	0	0	1
Robins AFB	Non AF Tenant	Weapons System Support (DLA Liaison)	0	0	1	1
All Non Air Force Tenant Organizations Regardless of Size			16	45	2717	2778

Numbers are authorized personnel for FY 93/4. Consistent with BRAC Questionnaire data

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Base Name	Category	UNIT NAME	OFF AUTH	ENL AUTH	CIV AUTH	TOTAL
Robins AFB	Non AF Tenant	Base Exchange	1	[illegible]	29	30
Robins AFB	Non AF Tenant	Base Population	0	0	120	120
Robins AFB	Non AF Tenant	Defense Finance and Accounting Service	2	2	178	182
Robins AFB	Non AF Tenant	Defense Information Systems Agency (A)	2	4	174	180
Robins AFB	Non AF Tenant	Distribution Depot Warner Robins GA	1	0	838	839
Robins AFB	Non AF Tenant	Morale Welfare Recreation & Services	1	0	98	99
Robins AFB	Non AF Tenant	Robins Federal Credit Union	0	0	236	236
Robins AFB	Non AF Tenant	Section 6, Base Schools	0	0	144	144
All Non Air Force Tenant Organizations With Population Over 100			4	26	2189	2219

Numbers are authorized personnel for FY 93/4. Consistent with BRAC Questionnaire data

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AIR LOGISTICS CEN[illegible]ANPOWER HISTORY

	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01
ROBINS AFB (Warner Robins ALC)														
Foreign Military Sales (FMS)														
OFF	7	7	7	7	6	4	8	8	8	8	8	8	8	8
ENL	-	-	-	-	-	-	-	1	1	1	1	1	1	1
CIV	589	598	490	489	577	448	471	520	514	514	514	514	514	514
TOT	596	605	497	496	583	452	479	529	523	523	523	523	523	523
Depot Maintenance (Maint)														
OFF	39	39	39	40	37	37	37	37	37	37	37	37	37	37
ENL	136	136	135	135	135	138	138	158	158	158	158	158	158	158
CIV	6,132	6,213	6,399	5,913	6,147	6,308	6,349	6,101	5,632	5,632	5,632	5,632	5,632	5,632
TOT	6,307	6,388	6,573	6,088	6,319	6,483	6,524	6,296	5,827	5,827	5,827	5,827	5,827	5,827
Materiel Management (MM)														
OFF	108	103	87	88	96	95	97	101	101	101	101	101	101	101
ENL	18	18	19	20	83	38	28	26	26	26	26	26	26	26
CIV	2,887	2,634	2,286	2,122	2,817	2,205	1,730	1,560	1,553	1,553	1,553	1,553	1,553	1,553
TOT	3,013	2,755	2,392	2,230	2,996	2,338	1,855	1,687	1,680	1,680	1,680	1,680	1,680	1,680
Central Contracting (PK)														
OFF	18	18	17	17	15	15	14	11	11	11	11	11	11	11
ENL	1	1	1	1	-	-	-	-	-	-	-	-	-	-
CIV	575	540	515	425	386	314	234	213	208	208	208	208	208	208
TOT	594	559	533	443	401	329	248	224	219	219	219	219	219	219
Management Overhead (MGMT)														
OFF	7	7	7	6	6	6	6	5	5	5	5	5	5	5
ENL	4	4	3	4	4	5	5	5	5	5	5	5	5	5
CIV	72	76	80	77	78	58	51	50	49	49	49	49	49	49
TOT	83	87	90	87	88	69	62	60	59	59	59	59	59	59
Communications & Computers (COMM/COMP)														
OFF	6	6	6	9	9	10	8	8	8	8	8	8	8	8
ENL	1	1	1	71	85	120	108	107	99	99	99	99	99	99
CIV	405	389	368	351	292	240	58	48	45	45	45	45	45	45
TOT	412	396	375	431	386	370	174	163	152	152	152	152	152	152
Medical (MED)														
OFF	82	86	89	91	100	102	104	108	108	108	108	108	108	108
ENL	181	183	189	185	194	198	207	236	233	233	233	233	233	233
CIV	86	95	107	115	109	126	127	114	109	109	109	109	109	109
TOT	349	364	385	391	403	426	438	458	450	450	450	450	450	450
Base Operating Support (BOS)														
OFF	74	75	76	80	69	63	59	79	79	79	79	79	79	79
ENL	894	895	852	880	793	726	708	685	728	728	728	728	728	728
CIV	3,749	3,507	3,159	3,418	2,499	1,401	1,367	1,434	1,473	1,473	1,473	1,473	1,473	1,473
TOT	4,717	4,477	4,087	4,378	3,361	2,190	2,134	2,198	2,280	2,280	2,280	2,280	2,280	2,280
TOTAL ALC MANPOWER														
OFF	341	341	328	338	338	332	333	357	357	357	357	357	357	357
ENL	1,235	1,238	1,200	1,296	1,294	1,225	1,194	1,218	1,250	1,250	1,250	1,250	1,250	1,250
CIV	14,495	14,052	13,404	12,910	12,905	11,100	10,387	10,040	9,583	9,583	9,583	9,583	9,583	9,583
TOT	16,071	15,631	14,932	14,544	14,537	12,657	11,914	11,615	11,190	11,190	11,190	11,190	11,190	11,190

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MANPOWER AUTHORIZATIONS BY UNIT
FY97/4
as of Aug 94 manpower file

CMD	ORGANIZATION	OFF	AMN	FY 97 CIV	DRILL	TOTAL
**	BASE: tinker					
u	aag Det 440 af audit agency fo	0	0	29	0	29
u	acc 3 combat comm gp	2	19	1	0	22
u	acc 3 combat comm spt sq	11	71	10	0	92
u	acc 31 combat comm sq	5	220	0	0	225
u	acc 32 combat comm sq	5	139	0	0	144
u	acc 33 combat comm sq	5	146	0	0	151
u	acc 34 combat comm sq	3	141	0	0	144
u	acc 552 air control wg	26	66	9	0	101
u	acc 552 computer systems gp	3	1	2	0	6
u	acc 552 computer systems sq	21	100	38	0	159
u	acc 552 logistics gp	6	34	2	0	42
u	acc 552 logistics support sq	13	138	12	0	163
u	acc 552 maintenance sq	6	544	2	0	552
u	acc 552 operations gp	9	20	2	0	31
u	acc 552 operations spt sq	68	120	16	0	204
	acc 552 training sq	41	122	1	0	164
	acc 552 training sq	18	12	0	0	30
u	acc 752 computer systems sq	12	121	13	0	146
u	acc 8 abn cmd control sq	16	69	1	0	86
u	acc 963 air warn ctrl sq	134	504	2	0	640
u	acc 964 air warn ctrl sq	127	495	3	0	625
u	acc 965 air warn ctrl sq	129	493	3	0	625
u	acc 966 air warn ctrl tr sq	56	229	3	0	288
u	acc Det 6 ACC Training Spt sq	7	9	0	0	16
u	acc Ol ad ACC Log Support gp	0	0	23	0	23
u	acc Ol af 29 training systems sq	0	1	0	0	1
u	acc Ol bc 4525 combat appl sq	0	0	0	0	0
u	aet 349 Recruiting sq	4	15	2	0	21
u	aet 349 Recruiting sq	2	1	1	0	4
u	aet Det 413 373 training sq	1	43	1	0	45
u	aet Ol ac Det 6 cap usaf ap	1	1	0	0	2
u	afr 2400 res readiness mob sq	0	2	1	0	3
u	afr 403 combat log support sq	0	0	4	0	4
u	afr 465 air refueling sq	0	0	67	0	67
u	afr 507 Civil Engineer sq	0	0	2	0	2
u	afr 507 air refueling gp	0	0	26	0	26
u	afr 507 communications ft	0	0	1	0	1
u	afr 507 logistics gp	0	0	6	0	6
u	afr 507 logistics support sq	0	0	16	0	16
u	afr 507 maintenance sq	0	0	68	0	68
u	afr 507 medical sq	0	0	3	0	3
u	afr 507 mission support sq	0	0	20	0	20
	afr 507 operations gp	0	0	5	0	5
	afr 507 operations spt ft	0	0	8	0	8
u	afr 507 security police sq	0	0	1	0	1
u	afr 507 support gp	0	0	2	0	2
u	afr 72 aerial port sq	0	0	2	0	2

MANPOWER AUTHORIZATIONS BY UNIT
FY97/4
as of Aug 94 manpower file

CMD	ORGANIZATION	OFF	AMN	FY 97 CIV	DRILL	TOTAL
u aia	Ol tt 67 operations spt sq	1	4	0	0	5
u amc	Ol a 22 logistics gp	0	0	0	0	0
u amc	Ol k 615 air mobility ops gp	0	0	0	0	0
u aws	Det 7 af global wea ce	2	33	3	0	38
u elm	Ol alc afelm disa jc	0	0	0	0	0
u elm	Ol tk afelm def fin acct ce	1	11	0	0	12
u elm	afelm deca ag	0	6	0	0	6
u elm	afelm dla-d depot dl	1	0	0	0	1
u lct	af legal ser ag fo	1	1	0	0	2
u mtc	10 test sq	14	3	1	0	18
u mtc	1818 reserve advisor sq	1	2	1	0	4
u mtc	1845 engineering instl gp	26	92	234	0	352
u mtc	654 Civil Engineer sq	10	259	430	0	699
u mtc	654 air base gp	8	67	628	0	703
u mtc	654 combat log support sq	3	124	1	0	128
u mtc	654 comm comp sys gp	5	179	92	0	276
mtc	654 medical gp	145	352	147	0	644
mtc	654 operations spt sq	6	41	20	0	67
u mtc	654 security police sq	4	306	16	0	326
u mtc	Ol ac hq materiel system ce	0	0	78	0	78
u mtc	Ol ad Det 2 645 materiel sq	0	0	1	0	1
u mtc	Ol af 412 logistics support sq	1	8	3	0	12
u mtc	Ol de 615 specialized Msn sq	0	0	1	0	1
u mtc	comm sys ce	78	194	344	0	616
u mtc	comm sys ce	76	206	103	0	385
u mtc	oklahoma city alc ce	18	32	1842	0	1892
u mtc	oklahoma city alc ce	0	0	38	0	38
u mtc	oklahoma city alc ce	12	0	359	0	371
u mtc	oklahoma city alc ce	15	5	793	0	813
u mtc	oklahoma city alc ce	72	8	3145	0	3225
u mtc	oklahoma city alc ce	8	11	1490	0	1509
u mtc	oklahoma city alc ce	37	98	707	0	842
u osi	Det 114 1 field investigatns dt	3	9	3	0	15
u paf	Ol a 3 wing wg	0	0	0	0	0
** Subtotal **		1279	5927	10888	0	18094

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Base Name	Category	UNIT NAME	OFF AUTH	ENL AUTH	CIV AUTH	TOTAL
Tinker AFB	Non AF Tenant	AAFES	0	0	300	300
Tinker AFB	Non AF Tenant	Army Corps of Engineers	1	0	32	33
Tinker AFB	Non AF Tenant	Defense Commissary Agency	0	12	113	125
Tinker AFB	Non AF Tenant	Defense Finance & Accounting Service	1	13	144	158
Tinker AFB	Non AF Tenant	Defense Information Service	0	0	245	245
Tinker AFB	Non AF Tenant	Defense Logistics Agency	1	0	1050	1051
Tinker AFB	Non AF Tenant	Defense Printing Service	0	0	35	35
Tinker AFB	Non AF Tenant	Defense Reutilization & Marketing Office	0	0	56	56
Tinker AFB	Non AF Tenant	First National Bank	0	0	10	10
Tinker AFB	Non AF Tenant	NAF	0	0	520	520
Tinker AFB	Non AF Tenant	Navy STRATCOM/WGONE (1)	228	936	21	1186
Tinker AFB	Non AF Tenant	Post Office	0	0	4	4
Tinker AFB	Non AF Tenant	Red Cross	0	0	1	1
Tinker AFB	Non AF Tenant	SATO	0	0	11	11
Tinker AFB	Non AF Tenant	Small Business Administration	0	0	3	3
Tinker AFB	Non AF Tenant	Tinker Credit Union	0	0	61	61
All Non Air Force Tenant Organizations Regardless of Size			232	961	2606	3799

Numbers are authorized personnel for FY 93/4. Consistent with BRAC Questionnaire data

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Base Name	Category	UNIT NAME	OFFICER	ENLISTED	CIV AUTH	TOTAL
[illegible]	Non AF Tenant	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Non AF Tenant	Defense Telecommunications Office	[illegible]	[illegible]	[illegible]	[illegible]
Tinker AFB	Non AF Tenant	Defense Finance & Accounting Service	1	13	144	158
Tinker AFB	Non AF Tenant	Defense Information Services	[illegible]	[illegible]	[illegible]	[illegible]
Tinker AFB	Non AF Tenant	Defense Logistics Agency	1	0	1050	1051
Tinker AFB	Non AF Tenant	NAF	0	0	520	520
Tinker AFB	Non AF Tenant	Navy STRATCOMWGONE (1)	[illegible]	[illegible]	[illegible]	[illegible]
All Non Air Force Tenant Organizations With Population Over 100			231	961	2393	3585

Numbers are authorized personnel for FY 93/4. Consistent with BRAC Questionnaire data

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AIR LOGISTICS CEN... MANPOWER HISTORY

	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01
TINKER AFB (Oklahoma City ALC)														
Foreign Military Sales (FMS)														
OFF	8	4	4	4	4	4	3	2	2	2	2	2	2	2
ENL	-	-	-	1	1	1	-	-	-	-	-	-	-	-
CIV	493	502	437	423	388	366	421	417	412	412	412	412	412	412
TOT	501	506	441	428	393	371	424	419	414	414	414	414	414	414
Depot Maintenance (Maint)														
OFF	45	45	45	46	46	46	45	45	45	45	45	45	45	45
ENL	109	108	109	109	109	128	128	117	117	117	117	117	117	117
CIV	7,844	7,851	7,800	6,070	5,991	6,389	6,140	6,047	5,957	5,957	5,957	5,957	5,957	5,957
TOT	7,998	8,004	7,954	6,225	6,146	6,563	6,313	6,209	6,119	6,119	6,119	6,119	6,119	6,119
Materiel Management (MM)														
OFF	91	91	82	82	80	71	76	79	79	79	79	79	79	79
ENL	18	18	18	57	17	17	17	17	16	16	16	16	16	16
CIV	3,321	3,077	2,922	2,766	3,072	2,446	1,954	1,704	1,685	1,685	1,685	1,685	1,685	1,685
TOT	3,430	3,186	3,022	2,905	3,169	2,534	2,047	1,800	1,780	1,780	1,780	1,780	1,780	1,780
Central Contracting (PK)														
OFF	17	17	17	15	15	13	12	12	12	12	12	12	12	12
ENL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CIV	561	538	473	420	409	334	268	219	223	223	223	223	223	223
TOT	578	555	490	435	424	347	280	231	235	235	235	235	235	235
Management Overhead (MGMT)														
OFF	7	7	8	8	8	8	7	6	6	6	6	6	6	6
ENL	11	11	11	12	12	3	3	3	3	3	3	3	3	3
CIV	83	86	91	83	79	81	76	65	66	66	66	66	66	66
TOT	101	104	110	103	99	92	86	74	75	75	75	75	75	75
Communications & Computers (COMM/COMP)														
OFF	2	2	2	6	9	9	8	8	8	8	8	8	8	8
ENL	-	-	-	150	162	226	193	192	184	184	184	184	184	184
CIV	538	517	487	507	455	424	92	90	90	90	90	90	90	90
TOT	540	519	489	663	626	659	293	290	282	282	282	282	282	282
Medical (MED)														
OFF	106	111	118	123	133	142	147	144	143	143	143	143	143	143
ENL	253	258	277	272	271	291	320	352	348	348	348	348	348	348
CIV	117	123	139	152	154	143	144	139	133	133	133	133	133	133
TOT	476	492	534	547	558	576	611	635	624	624	624	624	624	624
Base Operating Support (BOS)														
OFF	69	70	71	76	75	70	64	61	61	61	61	61	61	61
ENL	973	1,015	1,039	1,133	1,097	885	836	809	798	798	798	798	798	798
CIV	3,964	3,825	3,554	3,301	1,730	1,517	1,382	1,348	1,344	1,344	1,344	1,344	1,344	1,344
TOT	5,006	4,910	4,664	4,510	2,902	2,472	2,282	2,218	2,203	2,203	2,203	2,203	2,203	2,203
TOTAL ALC MANPOWER														
OFF	345	347	347	360	370	363	362	357	356	356	356	356	356	356
ENL	1,364	1,410	1,454	1,734	1,669	1,551	1,497	1,490	1,466	1,466	1,466	1,466	1,466	1,466
CIV	16,921	16,519	15,903	13,722	12,278	11,700	10,477	10,029	9,910	9,910	9,910	9,910	9,910	9,910
TOT	18,630	18,276	17,704	15,816	14,317	13,614	12,336	11,876	11,732	11,732	11,732	11,732	11,732	11,732

3/24/95

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE

20 APR 1995

MEMORANDUM FOR DEFENSE BASE REALIGNMENT AND CLOSURE COMMISSION (Mr. Francis A. Cirillo, Jr.)

FROM: HQ USAF/RT

SUBJECT: Request for Information (Verbal Request)

This letter responds to the verbal request of Ann Reese of April 11, 1995, requesting manpower figures related to depot installations. Attached please find a binder with four tabs for each depot. The first tab is the manpower authorization by unit for all Air Force units located at the installation. This information was certified input to COBRA. The second tab is a list of non-Air Force tenants. This was also certified and used in COBRA. The third tab is a subset of the second tab information, but is limited to those tenants with 100 or more authorizations. The fourth tab is air logisticis center manpower history. This information was not used in the Air Force analysis, and does not readily correspond to the other manpower information.

In addition, you asked for DMBA information for each of the ALCs. This listing by FY 96/4 authorizations is provided below:

	Hill	Kelly	McClellan	Robins	Tinker
Officer	20	28	27	35	41
Enlisted	115	42	24	41	40
Civilian	4184	5501	4661	5695	6003
Total	4319	5571	4712	5771	6084

I trust this information will be helpful. Please address any questions to my point of contact, Lt Col Louise Eckhart, 695-4578.

Jay D. Blume

JAY D. BLUME, Jr.
Major General, USAF
Special Assistant to the Chief of Staff
for Realignment and Transition

Part 3 of # 386

Data Requested at 11 Apr 95 meeting with BRAC Staff

1. Break out the non-BRAC portion of the 183M COBRA

2. HQ AFMC/CE

   a. Demo and Mothball Building List FY95 to FY 01 by ALC

   b. Resource Management Plan which addresses Demo and Mothball Building list by ALC

   c. Demo and Mothball Building List - based lined to DOD BRAC 1 Mar 95 submission (1706PE reduction)

   d. Demo and Mothball Building List - based lined to implementation (based on site survey data - 1713 PE reduction) DOD BRAC 1 Mar 95 submission

   e. Demo and Mothball Building List - based line to proposed change to DoD BRAC recommendation (based on site survey data - 1832 PE reduction)

   f. Military Construction Program FY 96 to FY 01 by ALC in the following format:

      YR Title Cost SQFT

   g. Installation square foot breakout for each ALC, based on FY 97 4th quarter, by the following groups:

Group	SQFT
Tenants	
DBMA	
Other	

      The totals should add up to all the square ft shown on the real property records

3. Air Staff Provided on 20 April [redacted]

   Manpower break out for each ALC, based on FY 97 4th quarter, by the following groups

Group	Military	Civilian
Tenants		
DBMA		
Other		

Part 3 of 3 #86

Document Separator

User's Manual

COBRA

Cost Of Base Realignment Actions

V5.01

October 1994

Prepared for the COBRA Joint Process Action Team by:

RICHARDSON and KIRMSE, Inc.
ENGINEERING • PLANNING • SYSTEMS

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CHAPTER 1

INTRODUCTION

CHAPTER 1 - INTRODUCTION

1.1 THE MANUAL

The modifications and enhancements that have been incorporated into this version of COBRA make its operations and capabilities different from previous versions. In addition, COBRA now comes with a new module called ADDER. This manual should therefore be read completely, even if the user is familiar with COBRA. The manual is written so that after its initial reading, users need generally refer only to the section(s) where he or she has a question.

Throughout the manual, when a single key-press is described, the notation < > is used (for example <ENTER> means to press the ENTER key). Similarly, when two keys are to be pressed at the same time, they are both shown within the < > (for example <ALT-S> means to press the ALT and the S keys, simultaneously). When a string of characters are to be pressed they will be shown within quotation marks (for example "B:" means to press the B and the : keys, sequentially).

1.2 BACKGROUND

The Cost of Base Realignment Actions (COBRA) model was originally developed in early 1988 by the United States Air Force Cost Center, in conjunction with the Logistics Management Institute, to evaluate the cost of Air Force stationing actions. This Lotus Spreadsheet based model was adopted by the 1988 Base Realignment and Closure Commission to evaluate and compare the relative costs of stationing alternatives. Throughout 1988 the Commission reviewed and revised the model so it could be used by all Military Departments. As a result it was used to produce all cost estimates used by the 1988 Closure Commission.

At the conclusion of the Commission, the General Accounting Office (GAO) reviewed the COBRA model and provided the Commission with a list of minor model modifications, and stated in their final report "...that the Cost of Base Realignment Actions Model used by the Commission and the Military Departments is a conceptionally sound tool for evaluating costs, savings, and payback periods." Consequently, the model was revised once more to satisfy those GAO concerns that could be accommodated. Ultimately, this model was released in May 1989 and was selected as the starting point to evaluate the 1991 Commission stationing actions. It soon became apparent that the revised Lotus based COBRA would have difficulty satisfying the long term Department of Defense (DOD) requirements.

The Department of the Army then took over the continued development and modification of the COBRA model. Richardson and Kirmse Engineering, Incorporated was tasked to make a detailed examination of the model and to provide recommendations as to how it could be improved. The Lotus 1-2-3 COBRA was found to be a valuable analytical tool, but with several limitations. R&K Engineering subsequently converted COBRA to a true computer model using

the Pascal programming language. Several versions of this new COBRA program were developed and used for the 1991 Commission. The latest version in general use was V1.42.

In early 1992, R&K was tasked to make a series of enhancements to COBRA in preparation for the 1993 Commission. The result was a varitey of improvement changes in the COBRA model. The Version 4.00 series of COBRA enabled the model closure/realignment scenarios to involve up to 15 separate bases, each of which could be a Losing Base, a Gaining Base, or both a Losing and a Gaining Base. It incorporated numerous improvements to accommodate unique costs and savings, which allowed industrial activities to be modeled without disconnecting the model's standard algorithms. In those cases where the unique attributes of an activity could not be accommodated by the standard algorithms, a "Unique Activities" data entry screen was used. The 4.00 series revised calculations to better account for Construction Costs, Transfer of Military Students, Costs of Local Moves, CHAMPUS Costs, Homeowners Assistance Costs, and several other cost/savings factors. This series also made input of data more easy and logical, with information on a single base input on a small number of base-specific screens rather than being spread over many general input screens.

In 1994, R&K Engineering was again tasked to make a series of enhancements to COBRA in preparation for the 1995 Commission. The result is as described in this manual.

1.3 CAPABILITIES AND OPERATIONS

The COBRA model is designed to estimate the costs and savings associated with a proposed base closure or realignment action, using data that is readily available to the Military Department staffs without extensive field studies. In addition, the model can be used to compare the relative cost differences between various stationing alternatives. It is not designed to produce budget estimates, but to provide a consistent method of evaluating closure and realignment options. Although COBRA produces data formatted similarly to Military Department budget data, an exact match between the two should not be expected.

COBRA calculates the costs and savings of base closure/realignment scenarios over a period of 20 years, or longer if necessary. It models all activities (moves, construction, procurements, sales, closures) as taking place during the first 6 years, and thereafter all costs and savings are treated as steady-state. The key output value produced is the Return on Investment Year. This is the point in time where savings generated equal (and then exceed) costs incurred. In other words, this is the point when the realignment/closure has paid for itself and net savings start to accrue.

COBRA allows closure/realignment scenarios to be compared in terms of when Return on Investment is achieved. Should Return on Investment not be achieved for a specific scenario, that action will result in a net cost rather than savings. Similarly, if a scenario has a long Payback Period (late Return on Investment) it will not start to generate net savings until well after the action would have been completed. Such an action would generally be less beneficial

than one with an earlier Return on Investment.

Net Present Value costs and savings figures generated are reported as Present Value dollars. In simple terms, this is the amount of dollars that would have to be invested during the Base Year at the assumed discount (interest) rate to cover the costs or match the savings at a specific point in the future. This is important because it eliminates artificial distinctions between scenarios based on inflation, while highlighting the affects of timing on model results.

This version of COBRA also includes a companion program called ADDER. ADDER loads the output data from one or more COBRA scenarios and adds all costs and savings into one set of reports for the total group of scenarios.

CHAPTER 2

INSTALLATION of COBRA V5.01

CHAPTER 2 - INSTALLATION of COBRA V5.01

2.1 HARDWARE REQUIRED

COBRA will run on any IBM 286-compatible computer with MS-DOS 3.00 or higher, 640K of RAM, and at least one megabyte of hard drive space to hold the program, input data, and reports. The minimum RECOMMENDED configuration is a 25 MHz 386 computer with at least one megabyte of RAM, MS-DOS 5.0 running in high memory, and a hard disk with an access time of 30 ms or less with ten megabytes free before installing COBRA. COBRA will run on monochrome systems; but color is highly recommended, since color is used to emphasize different fields on the menus and input screens.

2.2 INSTALLATION INSTRUCTIONS

COBRA is supplied on a floppy diskette as a file named COBIN501.EXE, a self-extracting archive containing the program, overlay, and assorted data files. The diskette also contains INSTALL.EXE, a program for safely creating directories and installing COBRA, and a text file named READ.ME containing installation instructions.

Insert the COBRA distribution diskette into one of your floppy disk drives. (For the purpose of illustration, we will assume you use the "A:" drive; if not, then use "B:" wherever the instructions say "A:".)

Type the command "A:INSTALL", then press <ENTER>. This will execute the program INSTALL.EXE supplied on the floppy disk that you inserted in the "A:" drive and start the installation process. If you have Microsoft Windows, do not install COBRA while Windows is running.

The COBRA installation program will then display the current disk and directory in use by MS-DOS, the amount of free space left on that disk, and a menu of options for the user (see Figure 1). COBRA will not be installed on any disk with less than one megabyte (a little over one million bytes) of available space.

```
COBRA
v5.01 Install Program

The current directory is: C:\DOS\
The current directory has 19,709,952 bytes free.

Press <1> to put COBRA files in current directory
Press <2> to put COBRA files in C:\COBRA
Press <3> to change to a different directory
Press <ESC> to cancel COBRA installation
```

FIGURE 1 - Installation Screen

Pressing <1> will cause COBRA and ADDER to be installed in the current directory if there is sufficient free space on the disk. If there is not, the program will issue a warning and return to the Installation Screen. If an old version of COBRA is already in the directory, those program and system files will be overwritten.

Pressing <2> will install COBRA and ADDER in a directory named "C:\COBRA". If there is no "C:\COBRA" directory, the installation program will create it. As with option <1>, it will check for available disk space and will overwrite any old COBRA system and program files. If you install COBRA in C:\COBRA and have Microsoft Windows in C:\WINDOWS, the installation program will give you the option of adding COBRA and ADDER icons to your Windows desktop.

Pressing <3> will allow the user to change the current drive and directory. The user will be asked to enter the new drive and directory (such as "D:\COB"). If the directory does not exist, the installation program will create it. If for some reason the directory cannot be created (such as a write-protected or non-existent disk), the program will issue a warning and return to the Installation Screen. The user should now press <1> to complete the installation in the new drive and directory.

Pressing <ESC> will cancel the COBRA installation and return the user to DOS. When COBRA has been successfully installed using options <1> or <2>, the user will be returned to the DOS prompt, in the directory to which COBRA has been installed. Enter "COBRA" then if you want to run COBRA, or "ADDER" to run ADDER.

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CHAPTER 3

OPERATING COBRA

CHAPTER 3 - OPERATING COBRA

It is assumed that users of COBRA will be generally familiar with the operation of the computer. No general keyboard instructions are therefore provided in this manual; rather only COBRA specific information will be included. Should users require generalized computer operation information they should consult their computer manual(s). The most efficient operation of COBRA is achieved by using a mouse wherever possible. Therefore, instructions in this manual will key on "mouse commands" to the system. However, in all cases "keyboard commands" will also be described so that the COBRA user can individually determine how he or she is most comfortable "navigating" through COBRA.

3.1 INITIATING COBRA

To open the COBRA program, access the disk/directory where COBRA has been installed (see Chapter 2), type "COBRA" and press <ENTER>. The "About COBRA" window will then appear (see Figure 2).

This welcome screen identifies the COBRA model and its version number; the telephone number of R&K Engineering, the COBRA developer, is also provided. The lower-right corner of the window contains the amount of free memory available, in K (kilobytes). This window can be accessed later on (see Section 3.3) to check the current free memory.

To close the "About COBRA" window and access the Main Menu, click on the "OK" at the bottom-center of the window. Other methods of closing the window are: clicking on the Close Window Square [■] at the upper-left of the window border; clicking on the words "ESC-Close window" on the bottom border; pressing <ENTER>; or pressing <ESC>.

3.2 THE MAIN MENU

The Main Menu is the starting point for using the COBRA program. Upon closing the initial display of the "About COBRA" window, the screen will display the Main Menu (see Figure 3). Along the top of this screen are displayed the "Help", "File", "DataBase", "Input Data", "Reports", "Windows", and "Quit" menu selections. During the use of COBRA additional menu windows, reports, and other data are displayed on the screen, however the Main Menu selections will always remain displayed behind any other active displays. Each of the Main Menu selections is summarized below.

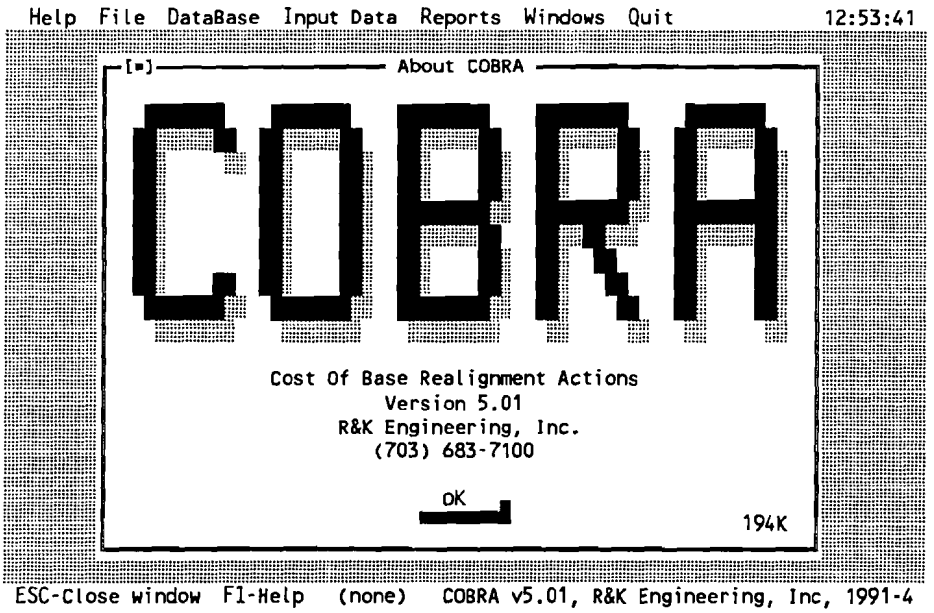

FIGURE 2 - "About COBRA" Window

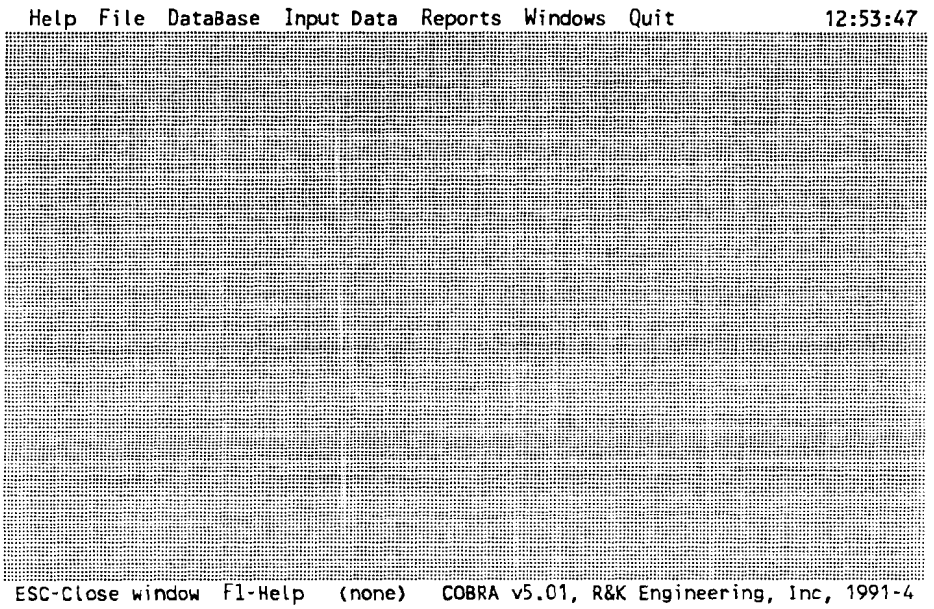

FIGURE 3 - Main Menu

3.3 HELP

From the Main Menu the Help selection is made by either clicking on the word "Help" along the top of the Main Menu screen, or by pressing <ALT-H>. The Help menu will appear (see Figure 4). By clicking on the words "About COBRA" or by pressing <A>, the "About COBRA" window will again be displayed (see Section 3.1, above). The Help menu may be closed by clicking on another Main Menu selection, by clicking on an open area of the screen surface, by clicking on the words "ESC-Close window" on the bottom border, or by pressing <ESC>.

3.3.1 Viewing Help

Users of COBRA may want to access the on-screen COBRA Help Text while they are working. This can be done by selecting a Help file to view or by invoking the Context-Sensitive Help. Help files can be selected only from the Help menu. By clicking on the words "View Help" or by pressing <V>, the "View Help" window is displayed (see Figure 5). This window may also be opened from the Main Menu, by pressing <ALT-F1>. The user can view the Help text by double clicking on the Help file which is desired. The Help files may also be accessed by pressing <TAB> to move the cursor to the Help files list, with the <↑> <↓> keys then being used to highlight the desired Help file. The highlighted Help file can then be viewed by clicking on the word "OK" or by pressing <ENTER>. The user may move up or down through the Help text using the mouse or the <↑> <↓> and <Page Up> <Page Down> keys. This window may be closed and the user returned to the Main Menu by clicking on the word "Cancel", or by clicking the Close Window Square, or by pressing <ESC>.

3.3.2 Printing Help

The user may want to print one of the Help files. This is done by clicking on the words "Print Help" on the Help menu or by pressing <P>. This will display the "Print Help" window, from which a Help file may be selected for printing exactly as it would be selected for viewing (see Section 3.3.1 above).

3.3.3 Context-Sensitive Help

The COBRA user may want to access information which is specific to the place in COBRA where he or she is at the time. This is most easily done through the use of Context-Sensitive Help. This feature is invoked by pressing <F1>, or clicking on "F1-Help", which will display on-screen text intended to provide information specific to that place in COBRA where the user is at the time. The user may move up or down through the Help text using the mouse or the <↑> <↓> and <Page Up> <Page Down> keys.

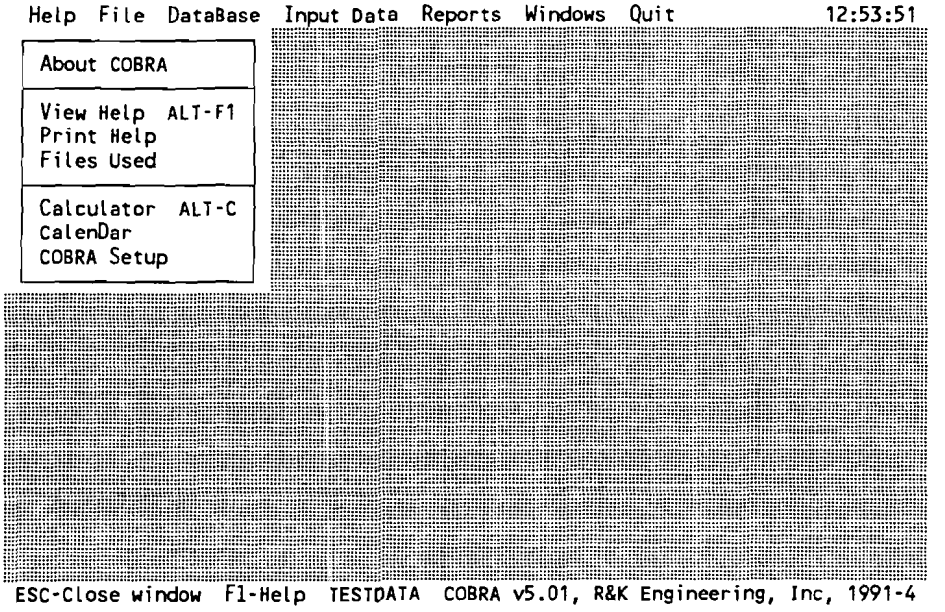

FIGURE 4 - Help Menu

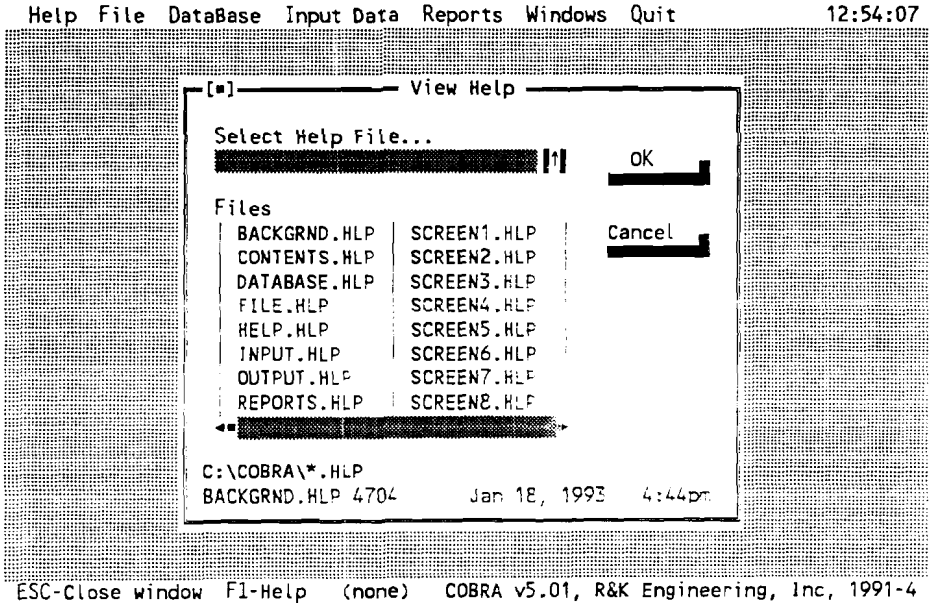

FIGURE 5 - "View Help" Window

A number of highlighted cross-reference words in the Context-Sensitive Help text are provided so the user can skip to other Help texts which cover related subjects. The user can change the designated keyword in the text by clicking on it, or by pressing <TAB> one or more times. Then press <ENTER> to shift to the cross-referenced Help text.

3.3.4 Files in Use

The user should always be aware of which Data and Standard Factors files are in use. By clicking on the words "Files Used" on the Help menu or by pressing <F>, the "Files in Use" window is displayed (see Figure 6). If Data and Standard Factors files are in Program memory at the time this window is opened, they will be indicated here. The Data file in use is also displayed along the bottom border of the Main Menu and will remain there until replaced in, or cleared from Program memory. The window may be closed and the user returned to the Main Menu by clicking on the "OK", or by clicking on the Close Window Square, or by pressing either <ENTER> or <ESC>.

3.3.5 On-Screen Calculator

By clicking on the word "Calculator" or by pressing <C> from the Help menu, a simple four-function calculator will be displayed (see Figure 7). This can also be done from the Main Menu by pressing <ALT-C>. To operate the calculator you can either click on the buttons with the mouse, or use the keyboard. The calculator has four arithmatic function keys, ten number keys, and "C" to clear the calculator, "←" to erase the last character entered, and "±" to change the sign of the number in the display. The keyboard keys <Backspace> and <_> also erase the last character and change sign, respectively. The calculator may be closed and the user returned to the Main Menu by clicking on the Close Window Square, or by pressing <ESC>.

3.3.6 On-Screen Calendar

By clicking on the word "CalenDar" or by pressing <D> on the Help menu, a calendar of the current month can be displayed (see Figure 7). The current date is also highlighted. Past and future months can be displayed by clicking on the triangles (▼ and ▲) or by pressing the <+> and <-> keys. The calendar may be closed and the user returned to the Main Menu by clicking on the Close Window Square, or by pressing <ESC>.

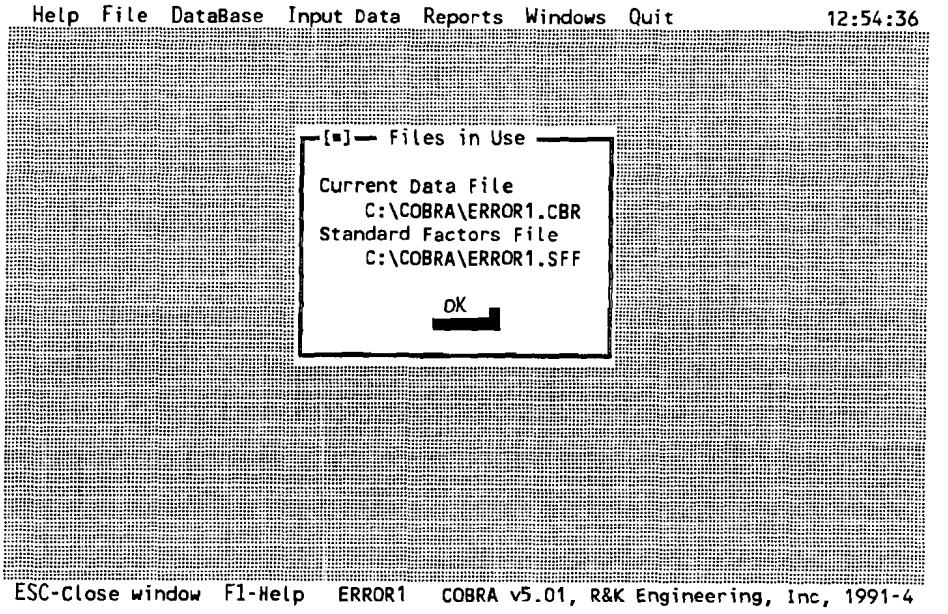

FIGURE 6 - "Files in Use" Window

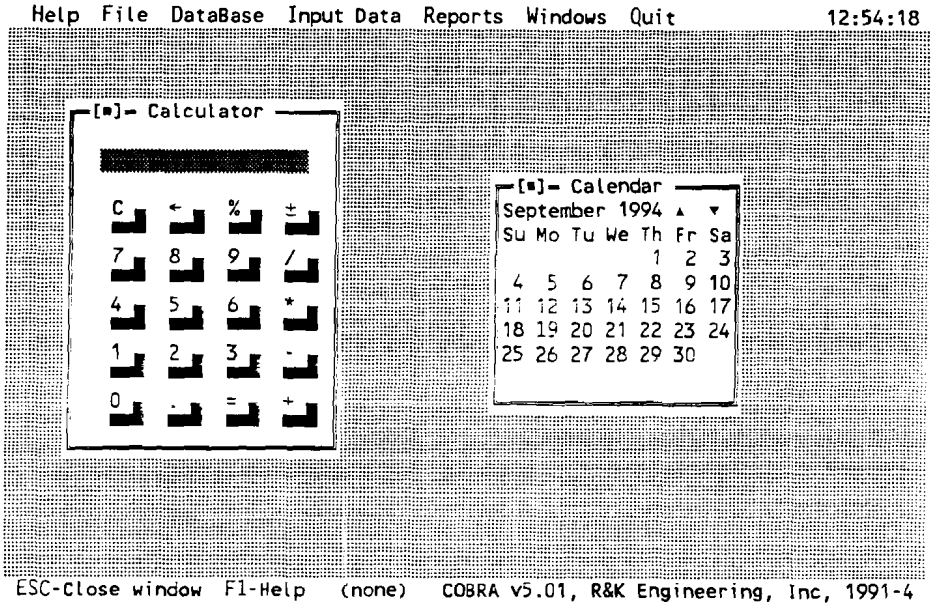

FIGURE 7 - Calculator and Calendar

3.3.7 Changing COBRA Set-Up

COBRA has several options for generating and printing its reports that can be changed by using the "COBRA Setup" Window (see Figure 8). By clicking on the words "COBRA Setup" or by pressing <S> from the Help Menu, the "COBRA Setup" window is displayed. To cancel any change(s), close the window and return to the Main Menu click on the word "Cancel", or click on the Close Window Square, or press <ESC>. Click on "OK" to save changes.

COBRA will format its output for most dot matrix (those that are EPSON/IBM compatible) and laser (those that are are HP LaserJet compatible) printers, or print them unformatted (requiring a wide-carriage printer for most reports). The user can select which type of printer is to be used, along with a printer device name for that printer. If printing with COBRA does not work, it may be necessary to change the Printer Set-Up inside of COBRA. By clicking on the words "Printer Setup" on the Help menu or by pressing <P>, the "Printer Setup" window is displayed (see Figure 36). The default device name is "PRN" which will work with most system configurations. Should a system not be able to print with this setting (a LAN for example), or should the system have multiple printers (a LaserJet on LPT1: and a dot matrix on LPT2:, for example) the correct device name can be entered in the appropriate "Device Name" field.

If the user wants to change the directory to be used to store Reports, the new entry can be typed into the "Report Directory" field. This may be useful if the user wants to run a new scenario or set of Reports, while continuing to save the current Reports in memory. Unless the directory is changed, any new Reports will automatically overwrite the old ones.

The user can limit the scope of Input Data reports generated by selecting which Input screens (see Chapter 4) are included in the report. Click on the desired screen names, or press <ALT> and the highlighted letter, to turn that screen on or off (those screens with an "X" next to them will be included in future Input Data reports.

Other options available are whether or not the inflation values on Standard Factors Screen Two will be applied to the Appropriation Detail report, whether or not some reports will have pages for each individual base, and whether or not to include a second page with the COBRA Summary report listing total Costs and Savings. Click on the desired options, or press <ALT> and the highlighted letter, to turn that option on or off (those options with an "X" next to them will be used in future reports.

3.4 FILE

The File selection is made by either clicking on the word "File" along the top of the Main Menu screen, or by pressing <ALT-F>. The File menu will appear (see Figure 9). The File menu may be closed by clicking on another Main Menu selection, by clicking on an open area of the screen surface, by clicking on the words "ESC-Close window" on the bottom border, or by pressing <ESC>.

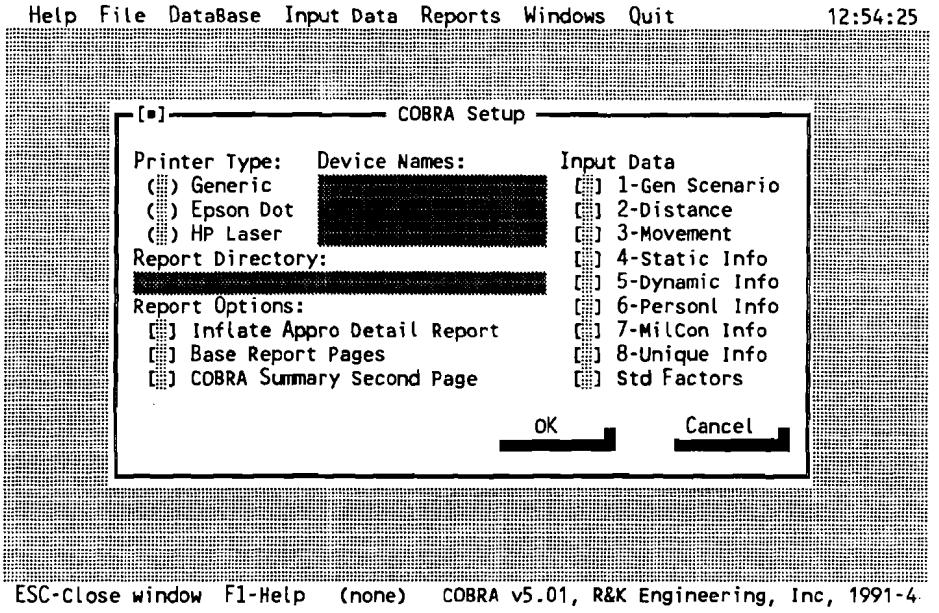

FIGURE 8 - "COBRA Setup" Window

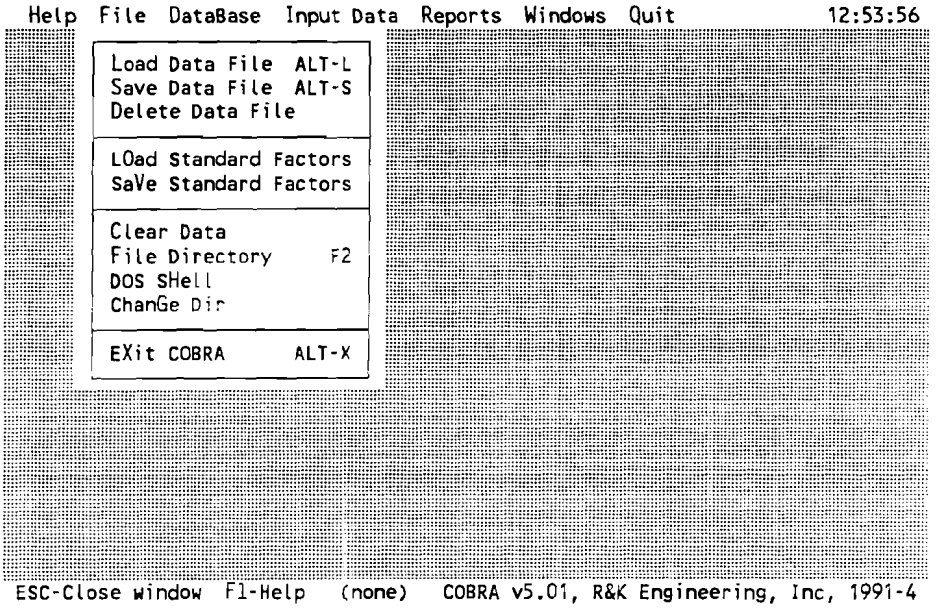

FIGURE 9 - File Menu

3.4.1 Loading Saved Data

COBRA users may want to run a saved scenario, or retrieve a saved scenario in order to confirm entries and/or make changes. By clicking on the words "Load Data File" on the File menu or by pressing <L>, the "Load Data File" window is displayed (see Figure 10). This window may also be opened from the Main Menu, by pressing <ALT-L>. Retrieval of a saved data set (in the form "*.CBR") is done by double clicking on the file name desired. The Files list may also be accessed by pressing <TAB> to move the cursor to the Data files list, with the < ↑ > < ↓ > keys then being used to highlight the desired Data file. The highlighted Data file can be retrieved by clicking on the word "Open" or by pressing <ENTER>. **Any Data set which was in COBRA Program memory will be removed and replaced when the new Data set is loaded.** Once loaded, the file name of the Data set will be displayed at the bottom border as described in Section 3.3.4 above. This window may be closed and the user returned to the Main Menu by clicking on the word "Cancel", or by clicking the Close Window Square, or by pressing <ESC>. Note that scenario files created with COBRA versions 4.00 through 4.04 can be loaded into COBRA version 5.01.

3.4.2 Saving Current Data

New or revised scenarios should be saved for future retrieval and use. By clicking on the words "Save Data File" on the File menu or by pressing <S>, the "Save Data File" window is displayed (see Figure 11). This window may also be opened from the Main Menu, by pressing <ALT-S>. The saving of the currently used data set is done by typing the Data file name desired or leaving the previously saved file name, and then clicking on the word "Save". The file may also be saved by pressing <ENTER>. This window may be closed, the save canceled, and the user returned to the Main Menu by clicking on the word "Cancel", or by clicking the Close Window Square, or by pressing <ESC>. The user should save the scenario before executing: particularly if the scenario is a new one, so that the filename will appear on all of the reports generated.

3.4.3 File Directory

The user may want to review the list of COBRA files in a directory. This is done by clicking on the words "File Directory" on the File menu or by pressing <F>. This can also be done from the Main Menu by pressing <F2>. This creates and displays a Report named "COBFILES.RPT" which lists all Data files and Standard Factors files in the current directory. These files are displayed with the English text name on the left (this is the user created common name/description), and the complete path name on the right (includes the user defined file name). The mouse or < ↑ > < ↓ > keys can be used to scroll through the files list. This window may be closed and the user returned to the Main Menu by clicking on the word "Cancel", or by clicking the Close Window Square, or by pressing <ESC>.

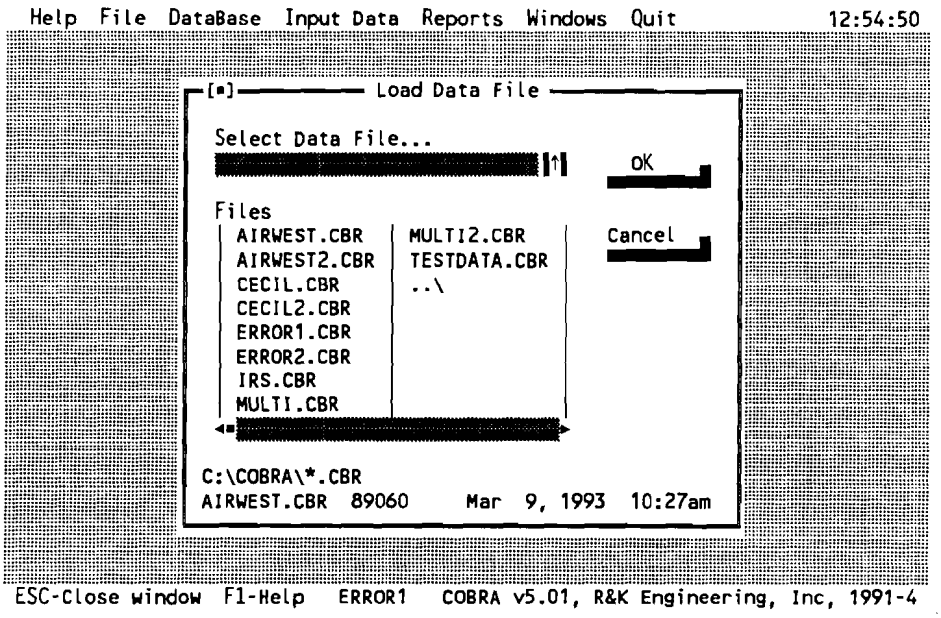

FIGURE 10 - "Load Data File" Window

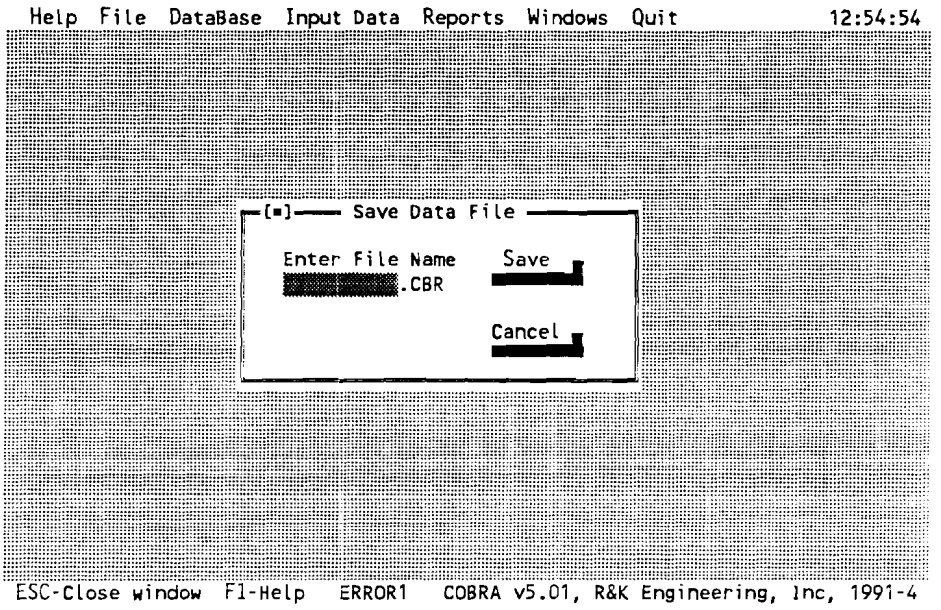

FIGURE 11 - "Save Data File" Window

3.4.4 Clearing the Data Set

To create a COBRA scenario from scratch, the Program memory should be cleared of any other Data set that may have been in use. By clicking on the words "Clear Data Set" on the File menu or by pressing <C>, the currently used Data Set is removed from the COBRA Program memory (If previously saved, it remains saved). A new Data Set can then be created using the "Input Data" menu. This window may be closed and the user returned to the Main Menu by clicking on the word "Cancel", or by clicking the Close Window Square, or by pressing <ESC>.

3.4.5 Deleting Saved Data

The user may want to permanently remove a scenario Data set from disk when it is outdated and no longer under consideration. By clicking on the words "Delete Data File" on the File menu or by pressing <D>, the "Delete Data File" window is displayed (see Figure 10). The deletion of a saved Data file is done by double clicking on the file to be deleted. The Data files list may also be accessed by pressing <TAB> to move the cursor to the list, with the <↑> <↓> keys then being used to highlight the desired Data file. The highlighted Data file can then be deleted and the user returned to the Main Menu by clicking on the word "OK" or by pressing <ENTER>. This window may be closed, the delete function canceled, and the user returned to the Main Menu by clicking on the word "Cancel", or by clicking the Close Window Square, or by pressing <ESC>.

3.4.6 Loading Standard Factors

If the scenario Data set does not have a specific Standard Factors file associated with it, or if the user wants to change the Standard Factors file to be used, the new Standard Factors file must be loaded into Program memory. By clicking on the words "LOad Standard Factors" on the File menu or by pressing <O>, the "Load Standard Factors" window is displayed (see Figure 11). The retrieval of a saved Standard Factors file (in the form "*.SFF") is done by double clicking on the file name desired. The Files list may also be accessed by pressing <TAB> to move the cursor to the Standard Factors files list, with the <↑> <↓> keys then being used to highlight the desired file. The highlighted Standard Factors file can be retrieved by clicking on the word "Open" or by pressing <ENTER>. This window may be closed and the user returned to the Main Menu by clicking on the word "Cancel", or by clicking the Close Window Square, or by pressing <ESC>.

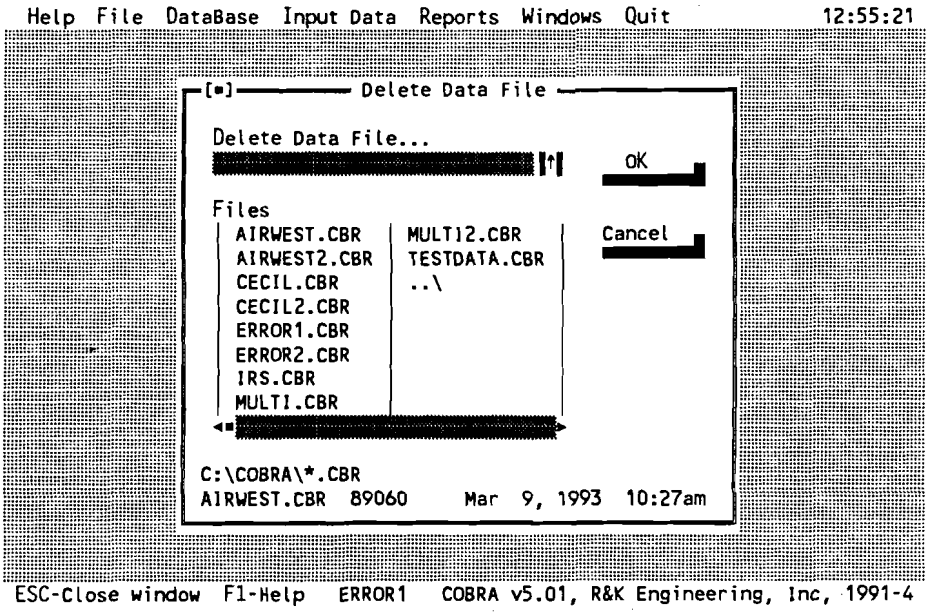

FIGURE 12 - "Delete Data File" Window

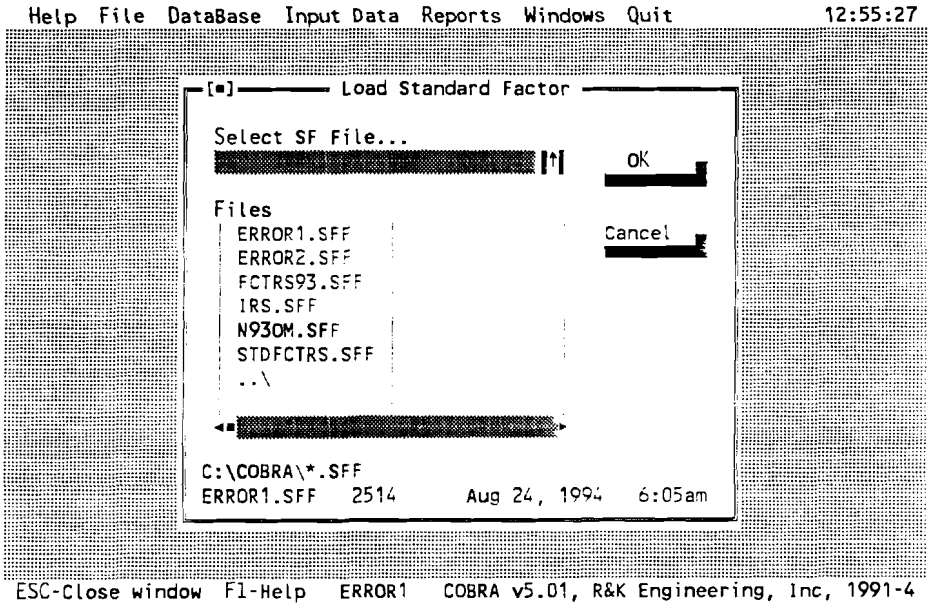

FIGURE 13 - "Load Standard Factors" Window

3.4.7 Saving Standard Factors

New or modified Standard Factors files should be saved for future retrieval and use. By clicking on the words "SaVe Standard Factors" on the File menu or by pressing <V>, the "Save Standard Factors" window is displayed. Saving the currently used Standard Factors file is done by typing the Standard Factors file name desired or leaving the previously saved file name, and then clicking on the word "Save". The file may also be saved by pressing <ENTER>. This window may be closed, the save canceled, and the user returned to the Main Menu by clicking on the word "Cancel", or by clicking the Close Window Square, or by pressing <ESC>.

3.4.8 DOS Shell/Change Directory

By clicking on the words "DOS SHell" or by pressing <H> on the File menu, a DOS Shell may be accessed. The user may return to COBRA by typing "EXIT" at the DOS prompt. Similarly, by clicking on the words "ChanGe Dir" or by pressing <G> the "Change Directory" menu is displayed (see Figure 14). The current directory will be displayed on this window, both in directory name and directory tree format. The directory may be changed using this function, with all file loads and saves, from that point on, going to or coming from the new directory. The user may type in the new drive and directory into the "Directory name" field, or may designate the new directory on the "directory tree". The user can click on "Chdir", or press <C> to change the directory but return to this window. By clicking on "OK", or by pressing <ENTER> the directory will be changed, and the user returned to the Main Menu. By clicking on "Revert", or pressing <R> the directory will revert to the initial setting (when the window was first opened) and the user returned to this window. Lastly, by clicking on the Close Window Square, or by pressing <ESC> the change directory actions are stopped, and the user returned to the Main Menu.

3.4.9 Exiting COBRA

When the user has finished using COBRA, he or she should always use the Exit command to terminate the program. This is required to prevent inadvertent loss of data by improper termination (such as switching the computer off). By clicking on the Words "EXit COBRA" on the File menu or by pressing <X> the user may exit COBRA and return to the DOS prompt. This command may also be selected by pressing <ALT-X> from the Main Menu. These and Quitting (see section 3.9) are the only proper methods of exiting the COBRA program.

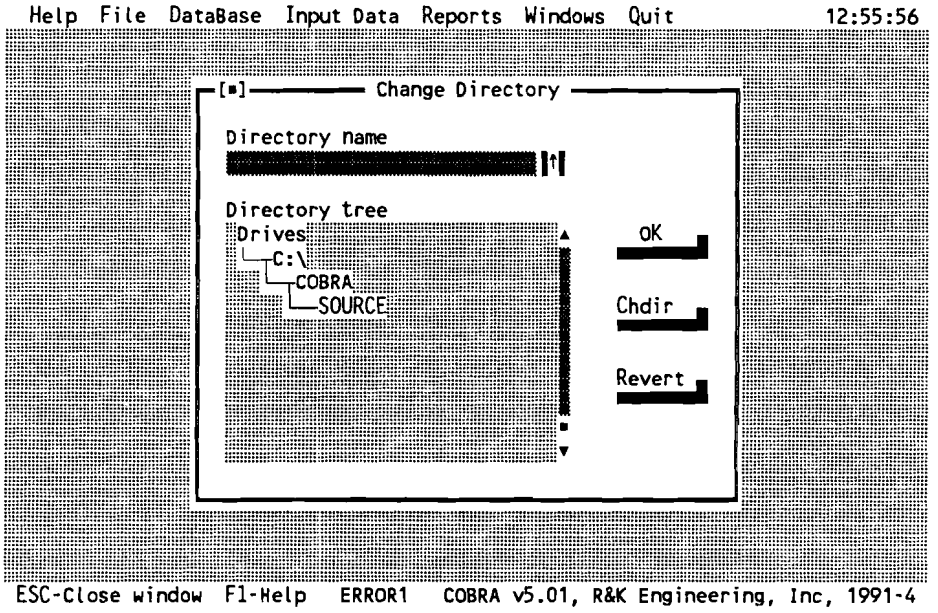

FIGURE 14 - "Change Directory" Window

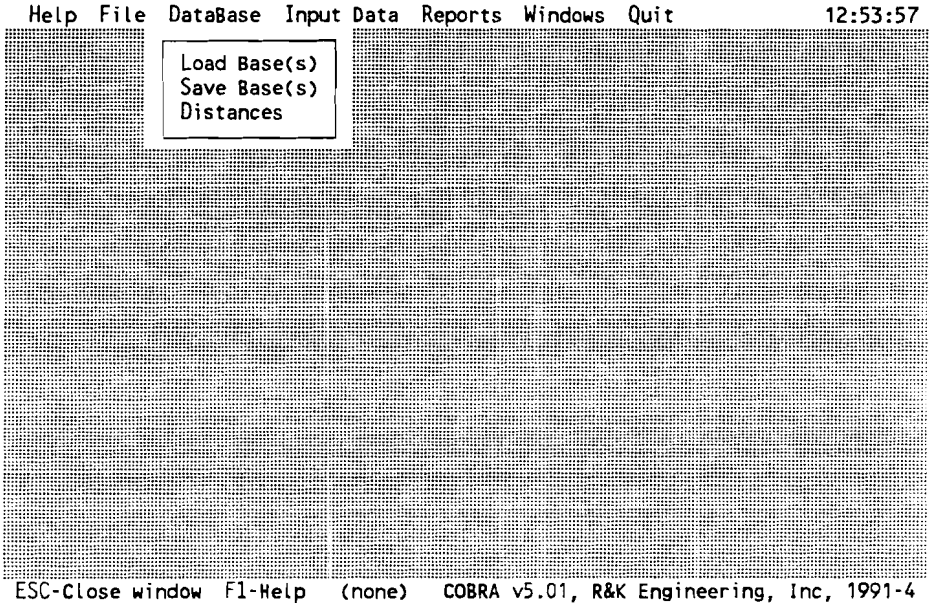

FIGURE 15 - Database Menu

3.5 DATABASE

COBRA has two types of databases which can assist the user in entering scenario data (see Section 3.6 and Chapter 4). The Database selection is made by either clicking on the word "DataBase" on the Main Menu, or by pressing <ALT-D>. The Database menu will then appear (see Figure 15). The use of these databases will allow the user to save and retrieve both base-specific data (see Section 4.4) and distances between bases (see Section 4.2). The storage and retrieval of this information will make initial scenario data entry easier and will promote consistency between scenarios which involve the same base(s). The Database menu may be closed and the user returned to the Main Menu by clicking on another Main Menu selection, by clicking on an open area of the screen surface, or by pressing <ESC>.

3.5.1 Loading Base(s)

The Load Base(s) function is used to load information from the Base Information database to Program memory. This database contains information on specific bases which is required to complete Data Entry Screen 4 (see Section 4.4). By clicking on the words "Load Base(s)" on the Database menu or by pressing <L>, the "Load Base(s)" window is displayed (see Figure 16). The selection of the database file to be loaded from is made by clicking on the file name desired. The Files list may also be accessed by pressing <TAB> to move the cursor to the database files list, with the <↑> <↓> keys then being used to highlight the desired database file. The highlighted file can be accessed by clicking on "OK" or by pressing <ENTER>. This window may be closed, the load canceled, and the user returned to the Main Menu by clicking on the word "Cancel", by clicking the Close Window Square, or by pressing <ESC>.

When a database file has been selected, the "Load Base(s) From DataBase" window is displayed (see Figure 17). This window consists of one or more pages listing all bases which have data stored in the database file. The user may now select up to 15 bases to be loaded from the database into Program memory. The base is selected by clicking on the space in front of the base name, or by typing the highlighted number/letter for the base, or by scrolling to the base name and pressing <SPACE BAR> to select it. A selected base will appear with [X] in front of it on the list. The selected base(s) are loaded into Program memory by clicking on the word "Open", by pressing <O>, or by pressing <ENTER>. To see other pages of this window, click on "Next" or "Previous", or press <N> or <P>. The "Next" and "Previous" selections load the bases selected on the current page, and then move to the new page. To do a quick search for a base, type the base name in the "Search for:" field and click on "Open" or press <O>. Search can also be invoked by pressing <ENTER> once to complete the base name entry, and again pressing <ENTER> to start the search. COBRA will load any bases selected on the current page, and then move to the page containing the name of the base searched for. All bases loaded from the database will automatically be entered into the COBRA scenario, and the stored information for each base entered into Data Entry Screen 4. This window may be closed with no further loading, and the user returned to the Main Menu, by clicking on the word "Cancel", by clicking on the Close Window Square, or by pressing <ESC>.

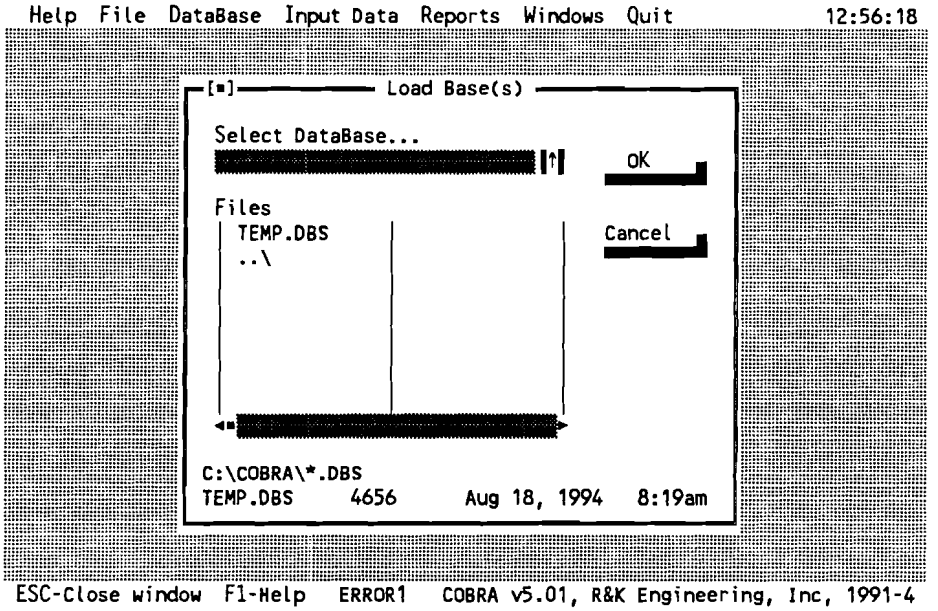

FIGURE 16 - "Load Bases" Window

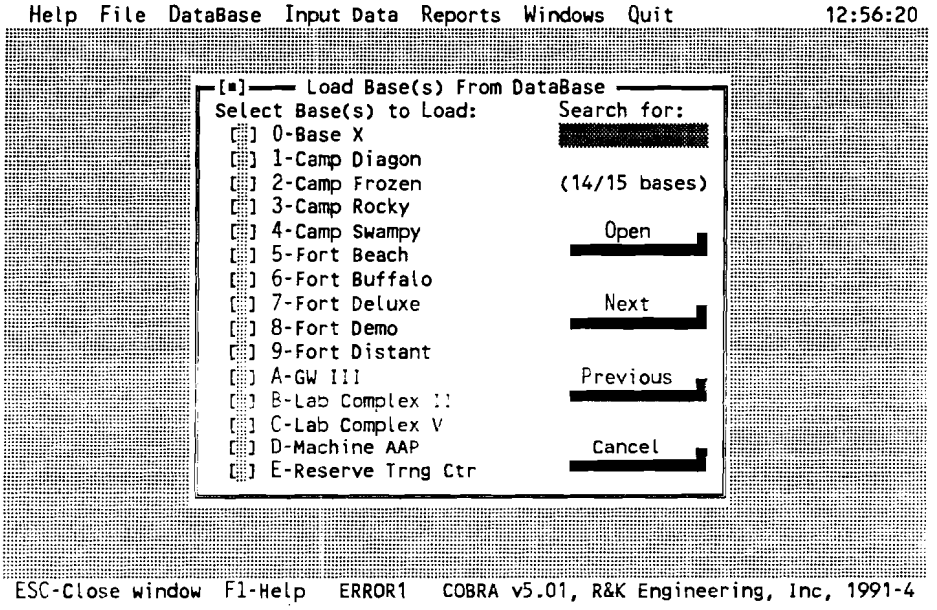

FIGURE 17 - "Load Base(s) From DataBase" Window

3.5.2 Saving Base(s)

When the user wants to save information from Program memory to the Base Information database, the Save Base(s) function is used. This will save information on selected bases from the current scenario to a Base Information database. By clicking on the words "Save Base(s)" on the Database menu or by pressing <S>, the "Save Base(s)" window is displayed (see Figure 18). The selection of the Base Information database file, to be saved to, is made by clicking on the file name desired. The Files list may also be accessed by pressing <TAB> to move the cursor to the database files list, with the <↑> <↓> keys then being used to highlight the desired database file. The highlighted database file can be accepted by clicking on "OK" or by pressing <ENTER>. A new Base Information database file can be created by entering a new file name and clicking on "OK" or pressing <ENTER>. This window may be closed, the save canceled, and the user returned to the Main Menu by clicking on the word "Cancel", by clicking the Close Window Square, or by pressing <ESC>.

When a Base Information database file has been selected the "Save to DataBase" window is displayed (see Figure 19). This window consists of one page, listing all bases which are used in the current scenario. The user may now select those bases to be saved to the database from Program memory. The base is selected by clicking on the space in front of the base name, or by typing the highlighted number/letter for the base, or by scrolling to the base name and pressing <SPACE BAR> to select it. A selected base will appear with [X] in front of it on the list. The selected base(s) are saved into the database by clicking on "OK", or by pressing <ENTER>. This window may be closed, the save canceled, and the user returned to the Main Menu, by clicking on the word "Cancel", by clicking on the Close Window Square, or by pressing <ESC>.

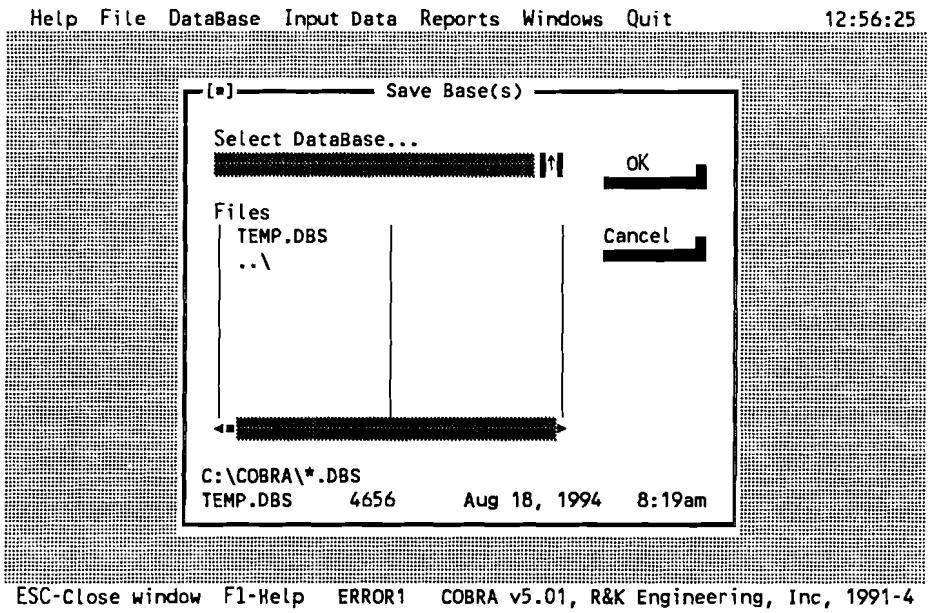

FIGURE 18 - "Save Base(s)" Window

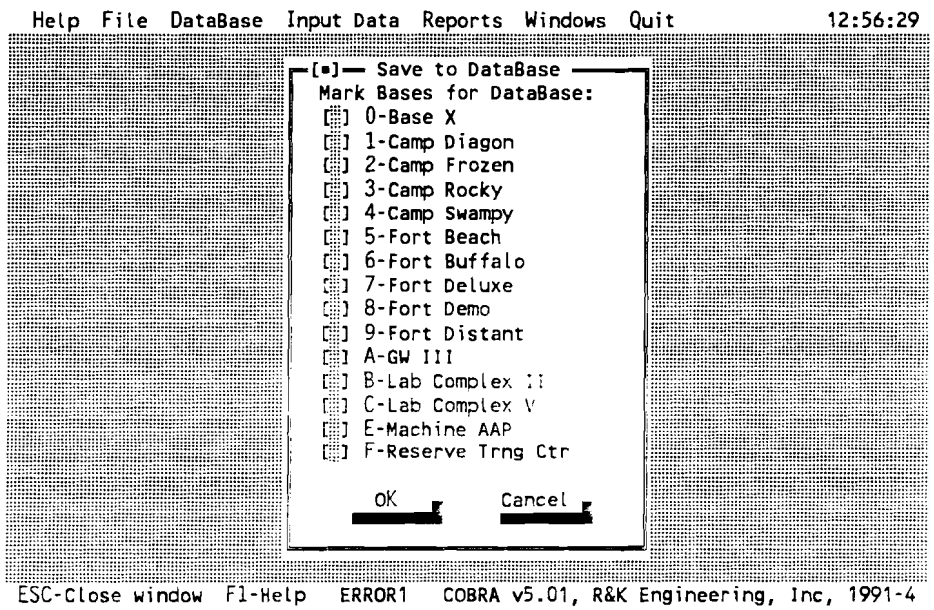

FIGURE 19 - "Save to DataBase" Window

3.5.3 Loading/Saving Distances

The second COBRA database is the Distances database, which contains the distances between pairs of bases. These can be used to enter distance information required on Data Entry Screen 2 (see Section 4.2). When the user wants to load distances from, or save distances to the Distances database, the Distances function is used. By clicking on the word "Distances" on the Database menu or by pressing <D>, the "Distances" window is displayed (see Figure 20). The selection of the Distances database file to be loaded from/saved to is made by clicking on the file name desired. The Files list may also be accessed by pressing <TAB> to move the cursor to the database files list, with the <↑> <↓> keys then being used to highlight the desired database file. The highlighted database file can be accepted by clicking on "OK" or by pressing <ENTER>. A new Distances database file can be created by entering a new file name and clicking on "OK" or pressing <ENTER>. This window may be closed, the save canceled, and the user returned to the Main Menu by clicking on the word "Cancel", by clicking the Close Window Square, or by pressing <ESC>.

When a Distances database file has been selected the "Distances DataBase" window is displayed (see Figure 21). This window consists of one page, listing all bases which are used in the current scenario. The user may now select a pair of bases to check for distance data. The pair of bases is designated by picking one from the right column and a second from the left column. Bases are designated be clicking on the space in front of the base name or on the name itself, or by typing the highlighted number/letter for the base, or by scrolling to the base and pressing the <SPACE BAR>. Designated bases will have (•) in front of their names.

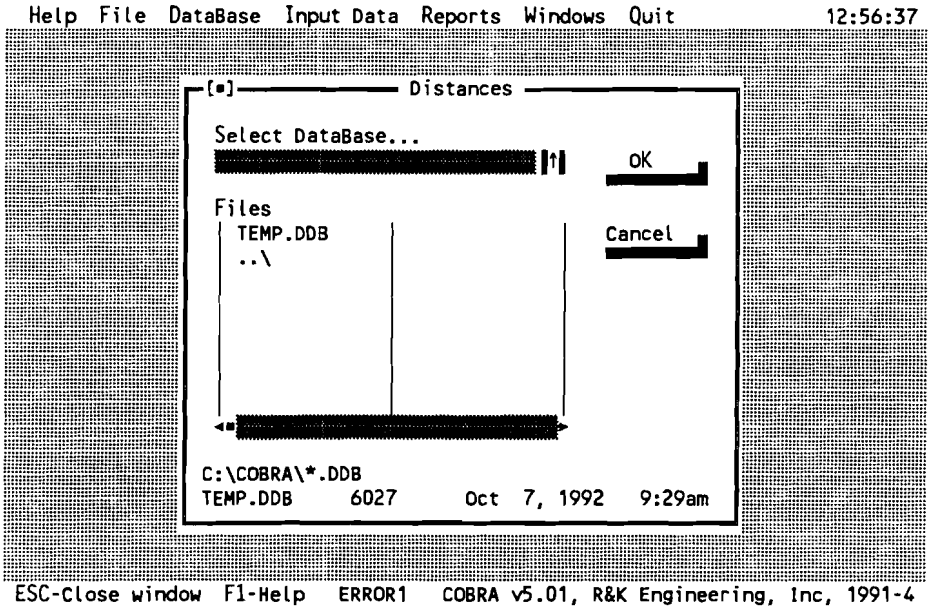

FIGURE 20 - "Distances" Window

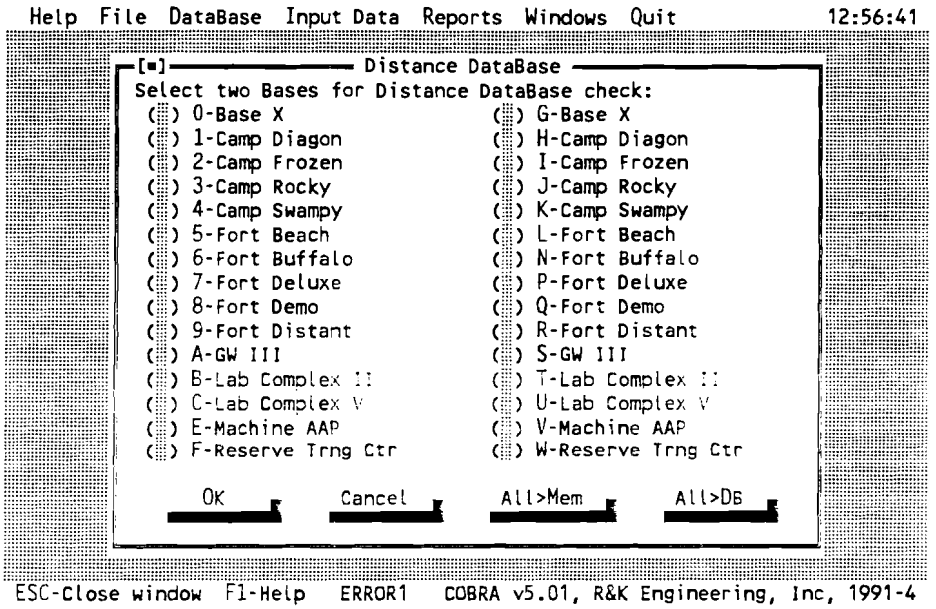

FIGURE 21 - "Distance DataBase" Window

When the user clicks on "OK", or presses <ENTER> a "DB/Memory Transfers" window is displayed (see Figure 22). The "DB/Memory Transfers" window displays the names of the two bases, and the distance currently in Program memory as well as that in the database. If these distances are not the same, the user can transfer the correct value from one data location to the other. This is done by clicking on one or the memory transfer choices (Memory to DataBase or DataBase to Memory) and either clicking on "OK" or pressing <ENTER>. Should no transfer be wanted, the user can click on "Cancel" or press <ESC> to return to the "Distances DataBase" window, and another pair of bases may be selected.

The "Distances DataBase" window also has two shortcut transfer options. By clicking on "All>Mem" or pressing <M>, all distances in the database between pairs of bases in the scenario can be transferred to Program memory. Similarly, by clicking on "All>DB" or by pressing <D>, all distances in Program memory can be transferred to the database. When either of these options is selected COBRA will inform the user as to how many distances were found. **Care must be taken when loading distances to Program memory since COBRA expects only to have distances entered when people/equipment moves are planned between those bases (see Section 4.2).** The "Distance DataBase" window can by closed and the user returned to the Main Menu by clicking on "Cancel", by clicking on the Close Window Square, or by pressing <ESC>.

3.6 INPUT DATA

To create a scenario from scratch or to change an already loaded Data set the Input Data selection is used. The Input Data selection is made by either clicking on the words "Input Data" along the top of the Main Menu screen, or by pressing <ALT-I>. The Input Data menu will then appear (see Figure 23). The Data Entry and Standard Factors screens are entered by clicking on the desired screen name. A screen may also be entered by typing the highlighted number/letter (shown in a different color) or by cursoring to the desired screen name and pressing <ENTER>. Data entry is covered in detail in the Chapter 4. The Input Data menu may be closed by clicking on another Main Menu selection, by clicking on an open area of the screen surface, by clicking on the words "ESC-Close window" on the bottom border, or by pressing <ESC>.

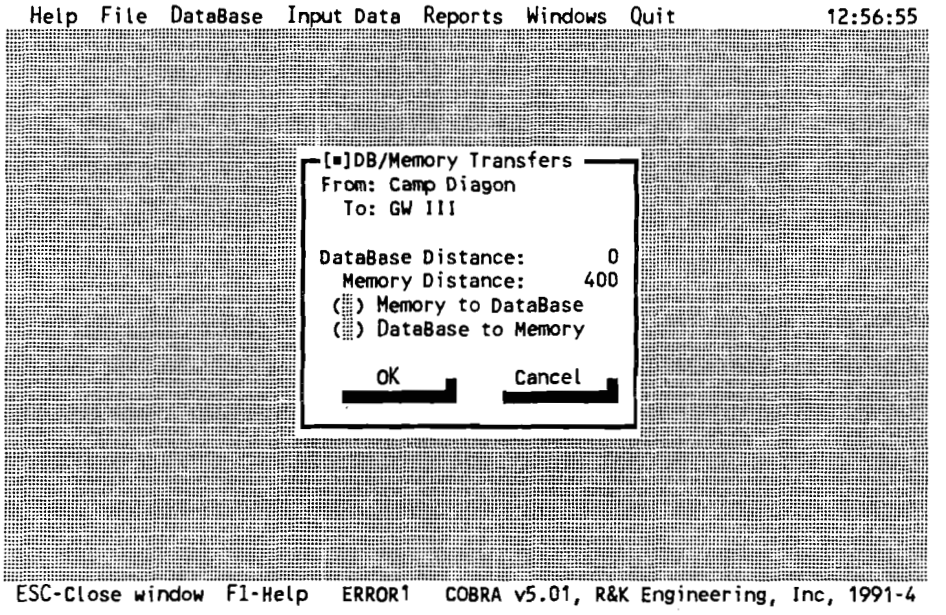

FIGURE 22 - "DB/Memory Transfers" Window

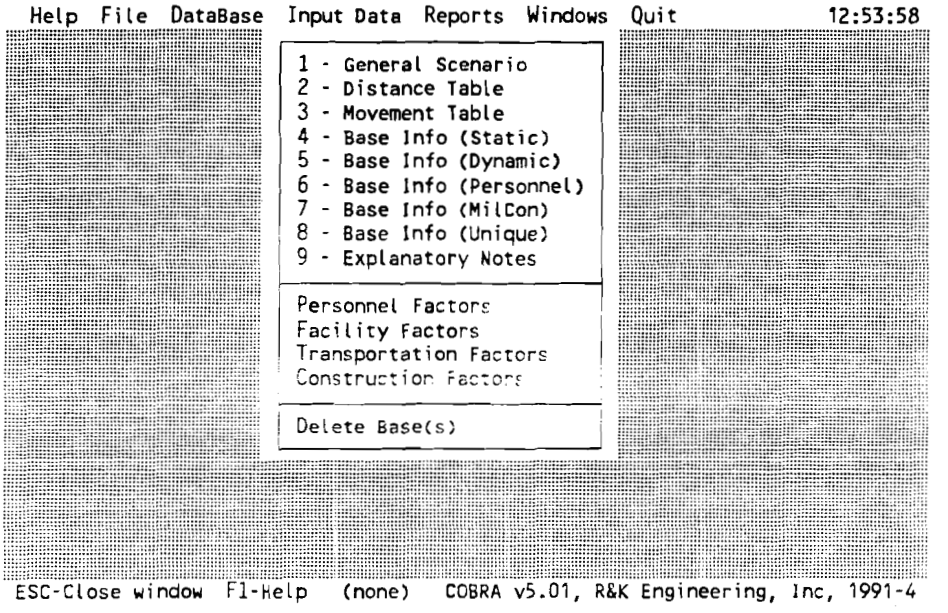

FIGURE 23 - Input Data Menu

3.6.1 Deleting a Base

The user may wish to change an existing scenario by simply removing one of the bases involved. The deletion of a base removes the specific base and all activities involving that base from the scenario. By clicking on the words "Delete Bases" on the Input Data menu or by pressing <D>, the "Delete Bases" window is displayed (see Figure 24). The deletion of a base(s) from the scenario is done by designating the base(s) listed on the window by clicking in the space in front of the base name, and then clicking on the word "Delete" or pressing <ENTER>. A base may also be selected by moving the cursor to the base (using the <↑> <↓> keys) and then pressing the Space Bar. Another way to designate the base to be deleted is to type the highlighted number/letter in front of that base name. To cancel the delete function, close the window and return to the Main Menu click on the word "Cancel", or click on the Close Window Square, or press <ESC>.

3.7 REPORTS

COBRA output Reports are created, viewed on the screen, and printed using the Reports selection on the Main Menu. The Reports selection is made by either clicking on the word "Reports" along the top of the Main Menu screen, or by pressing <ALT-R>. The Reports menu will then appear (see Figure 25). The Reports menu may be closed by clicking on another Main Menu selection, by clicking on an open area of the screen surface, by clicking on the words "ESC-Close window" on the bottom border, or by pressing <ESC>.

3.7.1 Generating Reports (Running COBRA)

The user must generate COBRA Reports using the current Data set and Standard Factors before these Reports can be viewed or printed. By clicking on the word "Execute" on the Reports menu or by pressing <E>, the COBRA program will generate all Reports. **This must be done before Reports can be viewed in the screen or printed.** Reports can also be executed from the Main Menu by pressing <ALT-E>. Output Reports are covered in detail in the Chapter 5. This option also creates an output data file (with the same filename as the COBRA scenario, but with an ".OUT" extension) for use with the ADDER program (see Chapter 6).

If while it is executing, COBRA detects inconsistencies in the scenario data a Scenario Error Report will be generated (see Section 5.13). **This Report should be reviewed, and potential errors resolved before the other COBRA Reports are used for analysis purposes.**

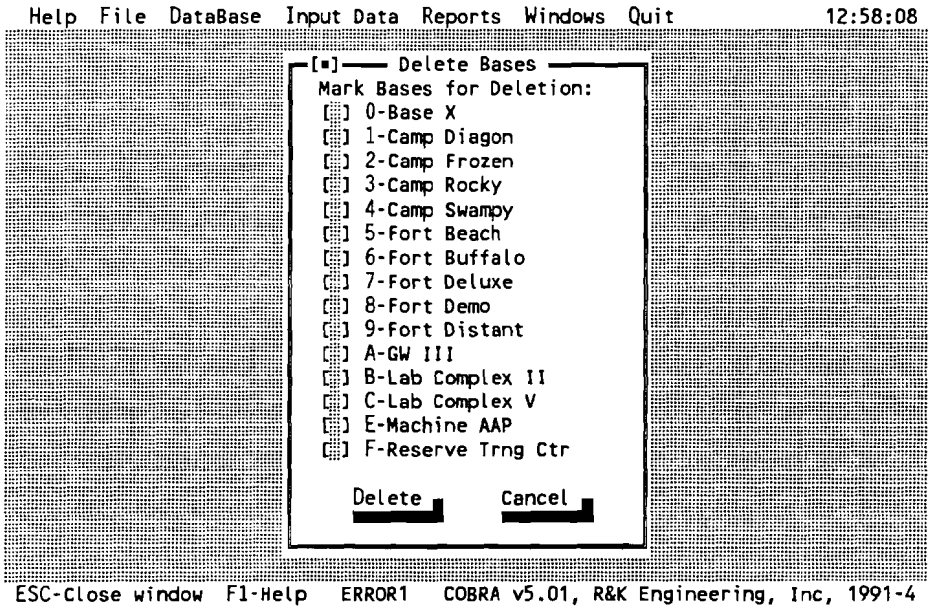

FIGURE 24 - "Delete Bases" Window

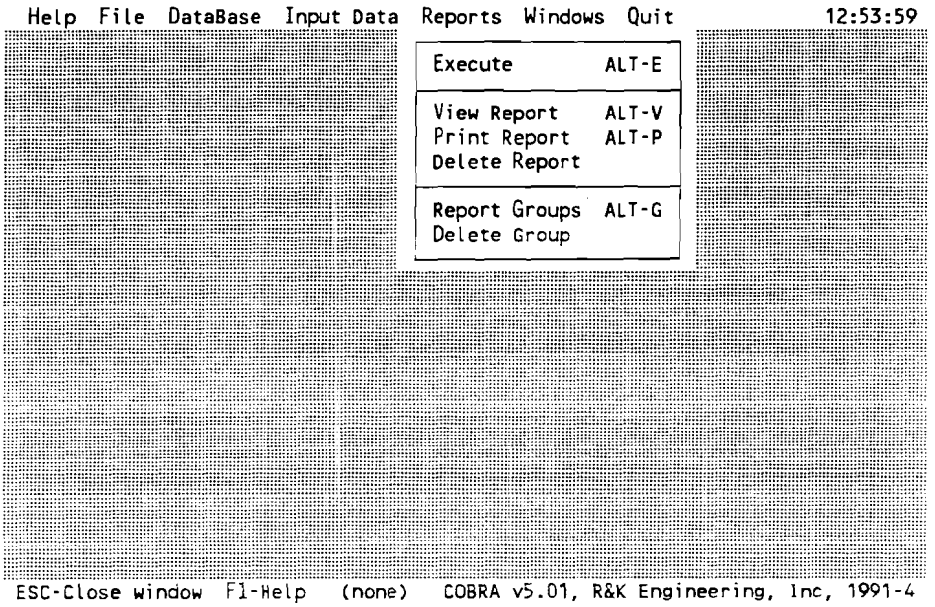

FIGURE 25 - Reports Menu

3.7.2 Viewing a Report

Analysis of COBRA outputs can be done by viewing Reports on the computer screen or by studying printed Reports. By clicking on the words "View Report" on the Reports menu or by pressing <V>, the "View Reports" window is displayed (see Figure 26). This can also be done from the Main Menu by pressing <ALT-V>. The selection of a Report for viewing on the screen is done by double clicking on the name of the desired Report. The Report file list may also be accessed by pressing <TAB> to move the cursor to the Reports file list, with the <↑> <↓> keys then being used to highlight the desired Report. The highlighted Report can then be viewed by clicking on the word "Open" or by pressing <ENTER>. This window may be closed and the user returned to the Main Menu by clicking on the word "Cancel", or by clicking on the Close Window Square, or by pressing <ESC>.

3.7.3 Printing a Report

Although COBRA output Reports can be viewed on the computer screen, eventually paper copies of at least some Reports will be needed. By clicking on the words "Print Report" on the Reports menu or by pressing <P>, a "Print Reports" window, similar to the "View Reports" window, is displayed. This can also be done from the Main Menu by pressing <ALT-P>. The Report is selected by double clicking on the name of the desired Report. The Reports file list may also be accessed by pressing <TAB> to move the cursor to the Reports file list, with the <↑> <↓> keys then being used to highlight the desired Report. The highlighted Report can then be selected by clicking on the "OK" or by pressing <ENTER>. Once a Report is selected it is immediately printed and the user is automatically returned to the Main Menu. To cancel the Report selection before printing, close the window, and return to the Main Menu, click on the word "Cancel", or click on the Close Window Square, or press <ESC>.

3.7.4 Deleting a Report

Standard COBRA Reports (Report formats) should generally not need to be deleted, as new COBRA runs overwrite previous reports. However, by clicking on the words "Delete Report" on the Reports menu or by pressing <R>, the "Delete Report" window will be displayed (see Figure 27). To delete a Report double click on the name of the Report. The Report file list may also be accessed by pressing <TAB> to move the cursor to the list, with the <↑> <↓> keys being used to highlight the desired Report. The highlighted Report can then be deleted by clicking on the "OK" or by pressing <ENTER>. To cancel the delete function, close the window and return to the Main Menu click on the word "Cancel", or click on the Close Window Square, or press <ESC>.

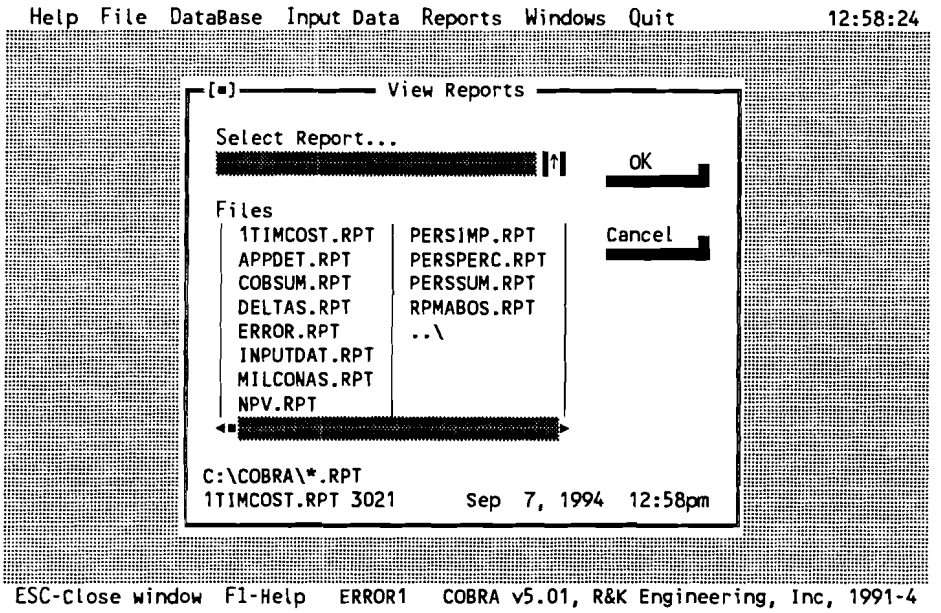

FIGURE 26 - "View Reports" Window

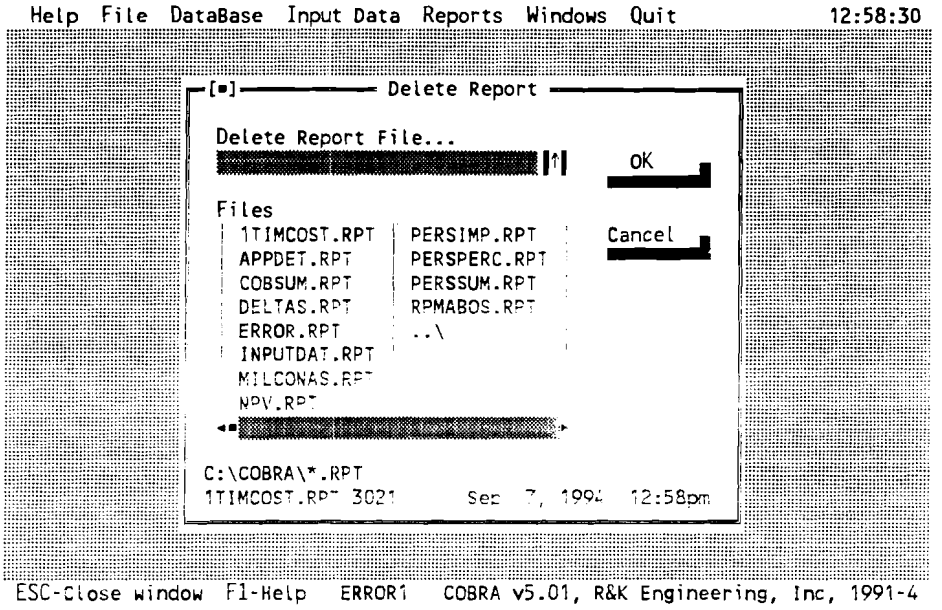

FIGURE 27 - "Delete Reports" Window

3.7.5 Viewing or Printing a Group of Reports

Many COBRA users will want to view or print two or more different Reports from an individual scenario. By clicking on the words "Report Groups" or by pressing <G> on the Reports menu, the "Report Groups" window is displayed (see Figure 28). There are several preset Report Groups already programmed, which may be viewed, modified, or added to as described below.

The Report Group is selected by double clicking on the name of desired group on the "Report Groups" window. The Report Group file list may also be accessed by pressing <TAB> to move the cursor to the list, with the <↑> <↓> keys being used to highlight the desired group. The highlighted Report Group can then be selected by clicking on the "OK" or by pressing <ENTER>. When a Report Group is selected the "Reports in Group" window is displayed (see Figure 29) showing the Reports that are currently included in that group ([X] indicates that the Report is included). When the word "Clear" is clicked or the <C> is pressed on the "Report Groups" window a blank "Reports in Group" window is displayed. When the word "Cancel" is clicked, or the Close Window Square clicked, or <ESC> pressed the "Report Groups" window is closed and the user returned to the Main Menu.

To add a Report to or delete a Report from the group on the "Reports in Group" window click on the Report name. Reports may also be added/deleted by typing the highlighted letter in front of the Report name, or by highlighting the desired Report (<TAB> to move from right to left column, and <↑> <↓> keys to move cursor to desired Report) and pressing the <Space Bar>. To view the group shown on the "Reports in Group" window click on the word "View" or press <V>. To print the group shown on the "Reports in Group" window click on the word "Print" or press <P>. To save the Report Group shown click on the word "Save" or press <S>. Any view, print, or save actions selected will be executed and the user returned to the "Reports in Group" window. See section 3.8 for a discussion of windows manipulations. To close the window and return to the Main Menu click on the word "Cancel", or click on the Close Window Square, or press <ESC>.

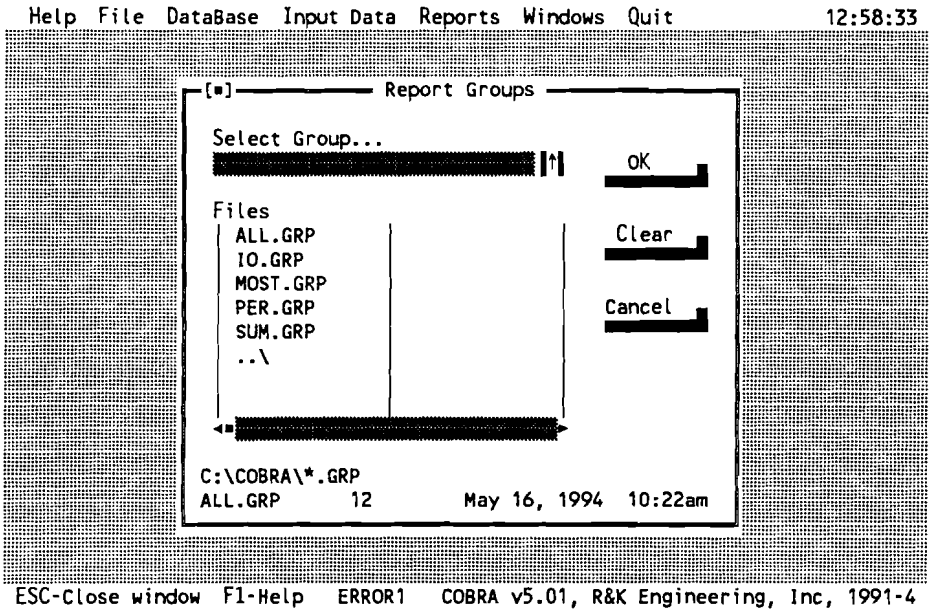

FIGURE 28 - "Report Groups" Menu

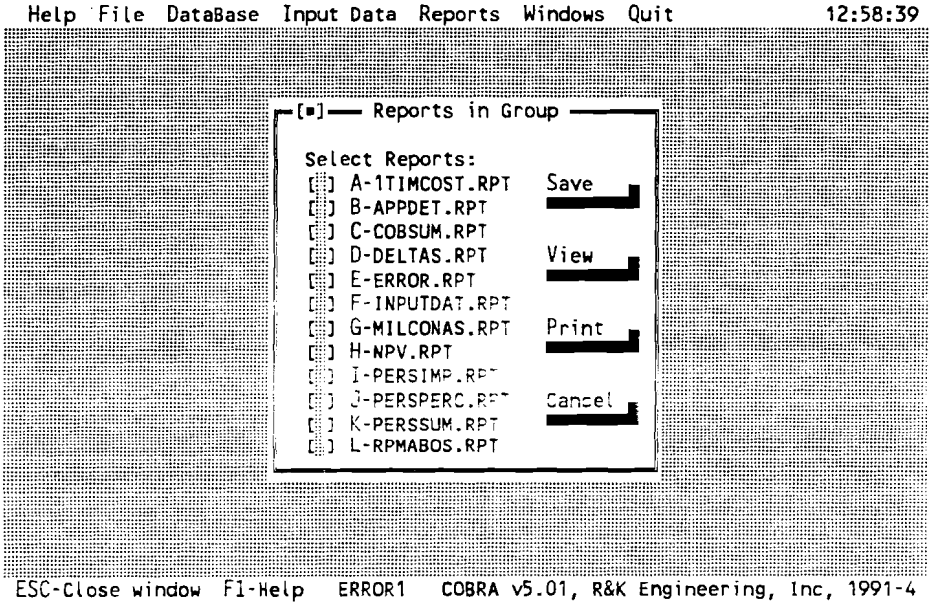

FIGURE 29 - "Reports in Group" Window

3.7.6 Saving a Group of Reports

The user will generally want to save a new or modified Report Group for future retrieval and use. By clicking on the word "Save" or pressing <S> on the "Reports in Group" window, the "Save Report Group List" window is displayed (see Figure 30). If the user has changed an existing Report Group, the old name will be displayed, otherwise that field will be blank. The modified group list can be saved under the old name by clicking on the word "Save" or by pressing <ENTER> twice. The modified group or a newly created group list can be saved in the same way, after the new name has been typed in the space indicated. The save function can be canceled and the user returned to the "Reports in Group" window by clicking on the word "Cancel", or by clicking on the Close Window Square, or by pressing <ESC>.

3.7.7 Deleting a Group of Reports

The user may at some point want to delete a Report Group from COBRA. This process will only delete the grouping of the Reports; no Report that was in the group will be deleted from COBRA when the group of Reports is deleted. By clicking on the words "Delete Group" on the Reports menu or by pressing <D>, the "Delete Report Group" window will be displayed (see Figure 31). To delete a Report Group double click on the name of the group. The Report Group file list may also be accessed by pressing <TAB> to move the cursor to the list , with the <↑> <↓> keys being used to highlight the desired group. The highlighted group can then be deleted by clicking on the "OK" or by pressing <ENTER>. To cancel the delete function, close the window and return to the Main Menu click on the word "Cancel", or click on the Close Window Square, or press <ESC>.

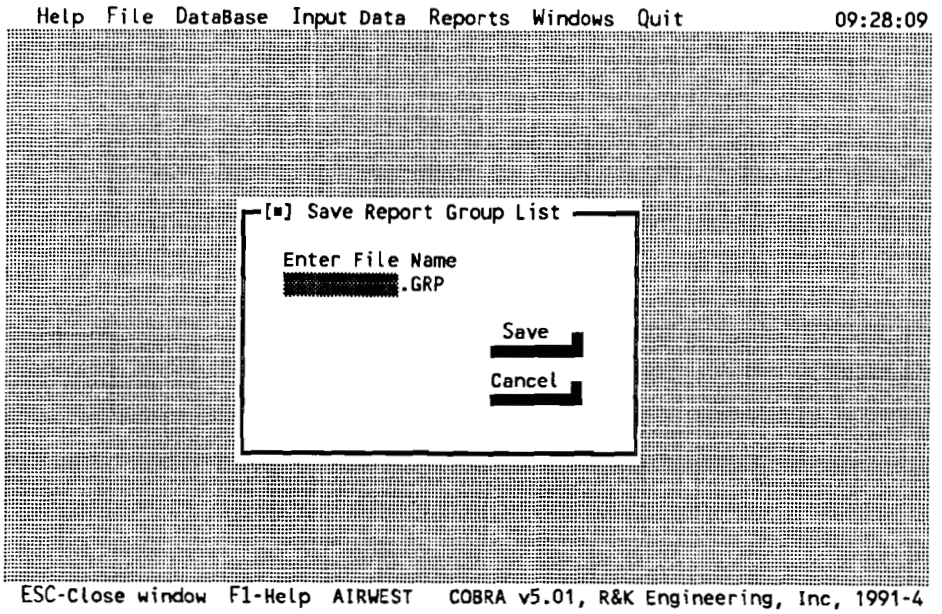

FIGURE 30 - "Save Report Group List" Window

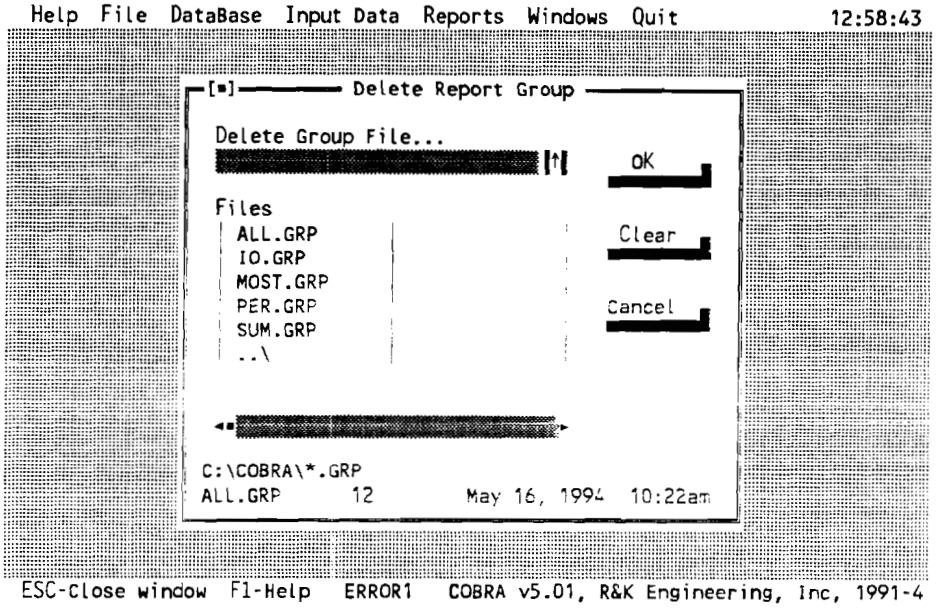

FIGURE 31 - "Delete Report Group" Window

3.8 WINDOWS

Many of the functions of COBRA, as well as inputs of data and outputs of Reports are accomplished through the use of windows displayed on the computer screen. The easiest way to operate COBRA in this windows environment is by using a mouse, however keyboard operations are also possible. The Windows menu selection is made by either clicking on the word "Windows" along the top of the Main Menu, or by pressing <ALT-W> (see Figure 32). The following discussion will describe general windows operations using mouse, keyboard, and the Windows menu. The sample COBRA window (see Figure 33) is notional; all windows features are described for it, however no actual COBRA window has all of these features active.

(1) Close Window Square. Clicking on this part of a window will close it, just as if <ESC> had been pressed. The Close Window Square is only present if the window is active.

(2) Window Title. By placing the mouse cursor on the title and pressing the mouse button, the window can be moved (dragged) to another location on the computer screen. This can also be done by pressing <CTRL-F5>, or selecting "Size/Move" on the Windows menu; the window can then be moved using the arrow keys, and placed by pressing <ENTER>.

(3) Window Number. A number is only presented when more than one window can be displayed (such as when viewing Reports). Clicking anywhere on an inactive window will make that window active (only one window can be active at a time). Pressing <ALT> and the Window number will also make the window active. Pressing <F6> or selecting "Next" on the Windows menu will shift the active window to the next window; <SHIFT-F6> will shift to the previous window.

(4) Zoom Icon. Clicking on this icon (↑) will expand the window to its full size, and place the unZoom icon in its place. Clicking on the unZoom icon (↓) will shrink the window back to its previous size. Pressing <F5> or selecting "Zoom" on the Windows menu will also toggle the active window between Zoomed and unZoomed conditions.

(5) Vertical Scroll Bar. Clicking on the triangles above or below the bar will scroll the text in the window up or down, while dragging the square will move the text proportionally. The text can also be moved using the <↑> <↓> and <PageUp> or <PageDown> keys.

(6) Horizontal Scroll Bar. Clicking on the triangles left or right of the bar will scroll the text in the window left or right, while dragging the square will move the text proportionally. The text can also be moved using the <←> <→> keys.

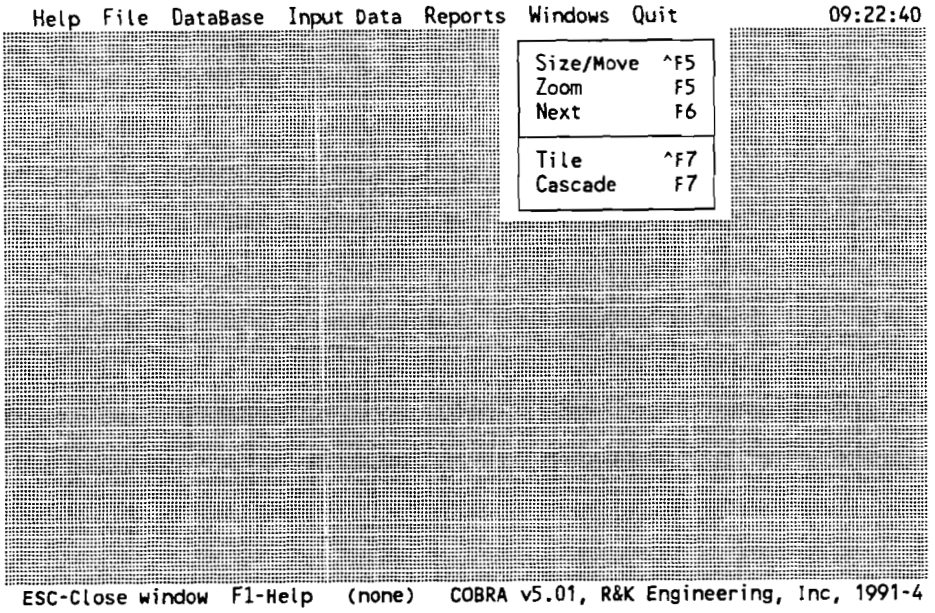

FIGURE 32 - Windows Menu

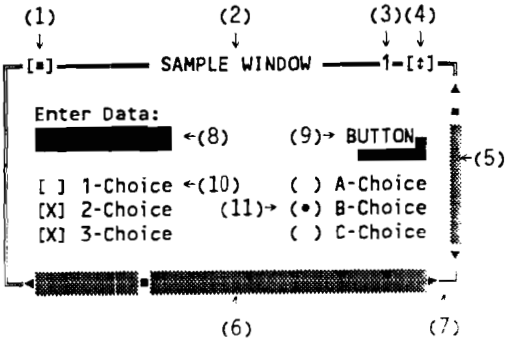

FIGURE 33 - Sample COBRA Window

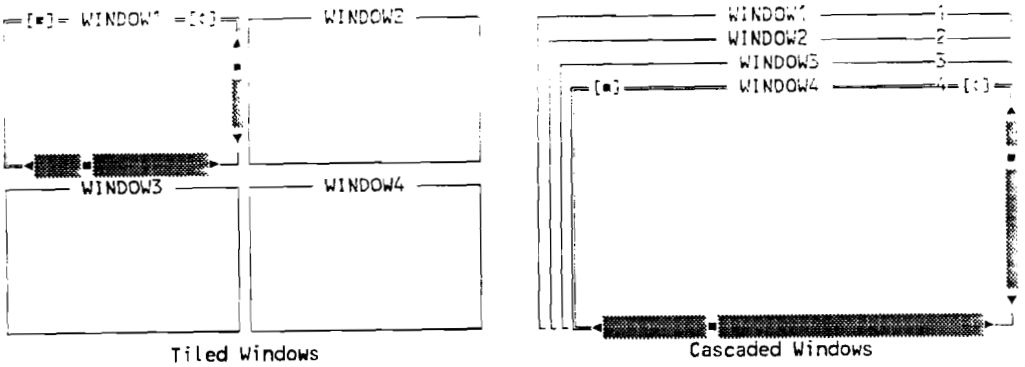

FIGURE 34 - Tiled/Cascaded Windows

(7) Grow Corner. Clicking here and dragging will allow window to be resized. This can also be done by pressing <CTRL-F5> or selecting "Size/Move" on the Windows menu; the window can then be sized using <SHIFT> and the arrow keys, and placed by pressing <ENTER>.

(8) Input Field. This is where input is entered to COBRA. All Data and Standard Factors screens contain this type of field. Other examples are windows where file names are entered. To use an input field, move the cursor to the field using the mouse or the keyboard, then type in the applicable entry and press <ENTER>.

(9) Button. Examples are "Cancel", "Next", "Save", and "OK" buttons. Clicking on a button with the mouse causes COBRA to react as though an actual button with the same function had been pressed with a finger. Buttons can also be activated by typing the highlighted character, or by pressing <ENTER> to activate the highlighted button.

(10) Checkboxes. These allow the selection of one or more items from a list (such as Reports or Bases). The item(s) are selected by clicking on it/them with the mouse, by typing the highlighted character, or by moving the cursor onto the item and pressing the <SPACE BAR>.

(11) Radio Buttons. These function just like checkboxes, except that only one item may be selected from each list (such as for Printer Setup or the Distance Database). Selecting a second item will cancel the previous selection (just like the buttons on your car radio).

When the user wants to display more than one window on the screen (several Reports for example) they may be sized and moved using the features described above, or they may be automatically displayed as either tiled or cascaded windows (see Figure 34). These automatic windows displays are invoked from the "View Reports" mode by pressing <CTRL-F7> or <F7> respectively. These can also be selected from the Windows menu by selecting "Tile" or "Cascade" or pressing <T> or <C>.

3.9 QUIT

Clicking on the Word "Quit" or pressing <ALT-Q> from the Main Menu is the same as exiting COBRA from the File Menu (see Section 3.4.9).

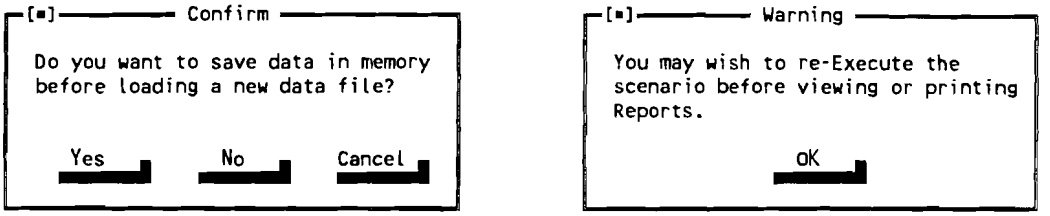

FIGURE 35 - Confirmation Boxes

3.10 WARNING/CONFIRMATION BOXES

There are several safety features built into COBRA, designed to prevent inadvertent termination of the program, deletion of files, or other possible user errors. These are presented as "Warning" or "Confirm" boxes (see Figure 35) alerting the user to the situation, and requiring the user to indicate if he or she wants to continue with the operation. The choice is made by clicking on the option desired, or by typing the highlighted letter, or by pressing <ENTER> to chose the preferred (highlighted) option.

3.11 ADVANCED OPERATIONS (Using Command-Line Parameters)

To allow for more efficient use of COBRA, or to automate some tasks, the user may issue some COBRA commands **directly** from the DOS command line by use of Command-Line Parameters. These advanced features are completely optional. The user may choose never to use them.

Entering "COBRA" is sufficient to initiate COBRA and provide access to the Main Menu. The user can then load a Data file to work with, through the COBRA menus. If the user wished to have COBRA automatically load a certain Data file when COBRA was initiated, he or she would enter "COBRA /L=filename" at the command prompt. COBRA will be then loaded, and the Data file named "filename" will be in memory when the user is given access to the Main Menu.

To initiate COBRA, load a Data file, and execute it to create Reports, the user would enter "COBRA /E=filename". COBRA will then be initiated, and the user will be given access to the Main Menu after the Data file named "filename" has been loaded and the Reports executed.

If the user wishes to create Reports from a Data file without modifying data before (or after); entering "COBRA /X=filename" will cause COBRA to load the scenario and execute the Reports, after which COBRA will return the computer to the MS-DOS command line. This option is most useful for automating COBRA Report generation through MS-DOS batch files.

Additionally, another parameter can be used to change the directory into which the Reports will be created. By using "/D=directory" after "COBRA" (and another parameter, if specified), the default Reports directory specified in the Set-Up file (see Section 3.8.2) will be overridden by the directory specified in this parameter.

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CHAPTER 4

COBRA DATA INPUT

CHAPTER 4 - COBRA DATA INPUT

The COBRA model requires the input of specific data before it can execute its Reports. This is done through the Data Entry screens and the Standard Factors tables which were briefly described in Section 3.6. Whether data is being input for the first time, or it is being modified from a saved data file, it is important to understand all of the inputs that are components of the COBRA model and therefore impact the reported results. Data Entry screens are constructed so that the user need only select one screen for the initial input/update of data, thereafter moving between screens/pages by clicking on the words "Next" and "Previous"; respective keyboard commands are <ALT-N> and <ALT-P>. This saves the data on a screen/page to Program memory. The screen/page can also be saved and the user return to the Main Menu by clicking on "Done" or pressing <ALT-D>. To close the Data Entry screens without saving and return to the Main Menu click on the Close Window Square or press <ESC>. **Be sure to save new data to Program memory before closing a screen/page, or it will be lost.** The cursor is moved from place to place on a screen by using the mouse or by repeated pressing of the <ENTER>, <TAB>, <Shift-TAB>, or the < ↑ > < ↓ > keys. The four Standard Factors tables are similarly completed. Detailed screen inputs are described below. See Section 3.4.2 for saving current scenario data to disk.

4.1 DATA ENTRY SCREEN 1 - GENERAL SCENARIO

This is the first Data Entry screen, where the general information is entered which defines the scenario being analyzed. Screen 1 (see Figure 36) is contained on one page.

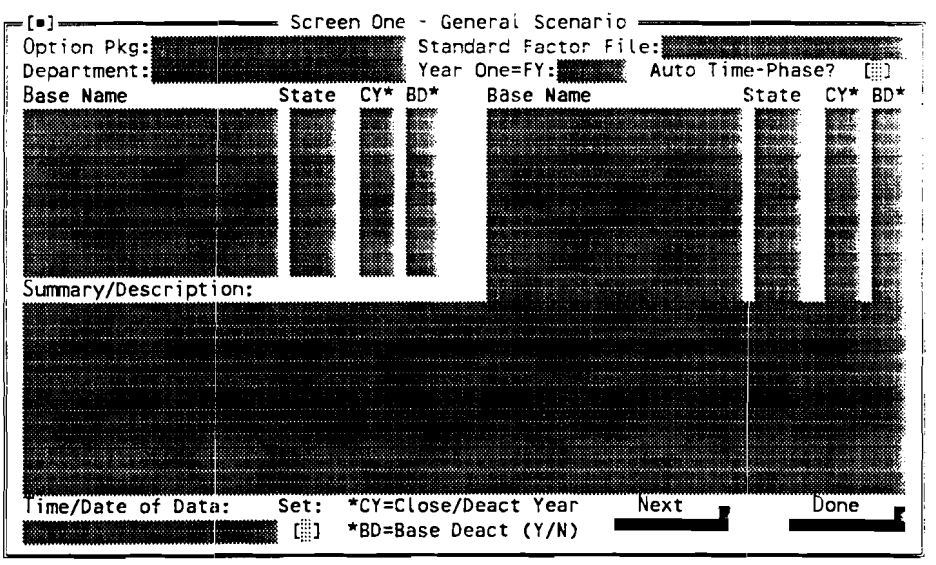

FIGURE 36 - Screen One - General Scenario

Option Package Name

This is a free text name for the realignment/closure option. This appears on most output Reports and on the File Directory (see Section 3.4.3) (Allowed entries up to 20 characters)

Department

The department running the scenario (Army, Navy, Marine Corps, Air Force, or other agency). This entry is only for information, all calculations are identical for the various Military Departments, except that the Army uses vehicle tons rather than numbers of vehicles moved, and ships all vehicles (see Section 4.3). (Allowed entries up to 20 characters; default algorithms are non-Army)

Standard Factor File

The Standard Factor file that is to be used with this scenario. When a Data set has been loaded the previously used Standard Factors file will be displayed here. When the user enters a different name, that new Standard Factors file replaces the old one and becomes the one to be used. When entering a new (never saved) name, users need not enter the path and extension; these will be automatically added. (Allowed entries up to 79 characters)

Year One is Fiscal Year

The first fiscal year of modeled scenario. COBRA will automatically show the correct years on other screens and Reports based on this year. (Allowed entries four digits, 1990 to 2100; the default is 1996)

Auto Time-Phase?

The default ([X], or on) will cause the model to automatically schedule construction and shut downs based on the movement of personnel. Disabling this field (a value of [ ], or off) by clicking on the field allows user entered scheduling (on Screen 5) to be applied to construction and shut downs. (Allowed entries [X] or [ ], default is [X])

Base Name

The name of each base involved in the scenario (up to 15 individual bases per scenario). The names entered will automatically be entered where appropriate in the remainder of the Data Entry screens. See Section 3.5.1 for a discussion of loading bases from the database. (Allowed entries up to 20 characters)

State

The two letter abbreviation of the state where the base is located. (Allowed entries 2 characters)

Close Year (or Deactivate Year)

If the base is to be closed or deactivated, the year that the action will be accomplished. This is used in calculating Return On Investment years (see Section 5.1). (Allowed entries 0 to 6) Entry of the default (0) means that the activity at the base is realignment only. Cost/savings algorithms are different for closing, deactivating, and realigning bases.

Base Deactivated

If the base is to be deactivated rather than closed, enter "Y" for yes. Cost/savings algorithms are different if the base is deactivating rather than closing. (Allowed entries Y or N; Default value is 'N')

Summary/Description

This is an eight-line, free text field for the user to enter a summary description of the scenario being modeled. This is for information only, but if entered, it will be printed on the Realignment Summary Report (see Section 5.1) and will appear in the File Directory (see Section 3.4.3). (Allowed entries up to 78 characters per line)

Time/Date of Data

The time/date of the data used in the scenario; this will be printed on each COBRA output Report. If a saved data file is used the time/date of that file will automatically be displayed here. The user can type in a new time/date in any desired format, or use the Set entry to enter the actual time/date. (Allowed entries up to 20 characters)

Set

This allows the user to enter the actual time/date in the Time/Date of Data field. Entering [X] in the Set space will enter the current time/date in the format HH:MM MM/DD/YYYY. (Allowed entries [X] or [ ])

4.2 DATA ENTRY SCREEN 2 - DISTANCE TABLE

Screen 2 (see Figure 37) will be displayed on one or more pages, depending on the number of bases entered on Screen 1.

```
[■]──────────────── Screen Two - Distance Table ────────────────
                    Distance between Bases (in Miles)

From:  Camp Diagon, VA          To:  GW III, RI
From:  Camp Diagon, VA          To:  Camp Frozen, NY
From:  Camp Diagon, VA          To:  Camp Rocky, OH
From:  Camp Diagon, VA          To:  Camp Swampy, LA
From:  Camp Diagon, VA          To:  Fort Beach, CA
From:  Camp Diagon, VA          To:  Fort Buffalo, KS
From:  Camp Diagon, VA          To:  Fort Deluxe, CA
From:  Camp Diagon, VA          To:  Fort Demo, AR
From:  Camp Diagon, VA          To:  Fort Distant, AK
From:  Camp Diagon, VA          To:  Lab Complex II, MD
From:  Camp Diagon, VA          To:  Lab Compex V, MA
From:  Camp Diagon, VA          To:  Machine AAP, MN
From:  Camp Diagon, VA          To:  Base X
From:  GW III, RI               To:  Camp Frozen, NY
From:  GW III, RI               To:  Camp Rocky, OH
From:  GW III, RI               To:  Camp Swampy, LA

                                Next      Previous      Done
```

FIGURE 37 - Screen Two - Distance Table

Distance Between Bases

The distance in miles between bases involved in movements of personnel or equipment. All combinations of bases which were entered on Screen 1 will be presented with a place to enter the distance between them. The user will enter only the distances between bases which, in the scenario, will have movements take place (eg. If the scenario shows movements from Base A to Base B, and from Base B to Base C, the user will enter distances between A and B, and between B and C, but not enter the distance between A and C.). The combinations of bases shown to have moves planned (distances between them entered) will be automatically entered where appropriate on the remainder of the Data Entry screens. See Section 3.5.3 for a discussion of loading distances from the database. (Allowed entries 0 to 15,000 miles)

4.3 DATA ENTRY SCREEN 3 - MOVEMENT TABLE

For each pair of bases with movements planned (as defined by Screen 2 entries), the user will enter the personnel, equipment, and vehicles moving in each of the scenario years. The model will use these figures to calculate personnel and transportation costs and to automatically schedule construction and shutdown at each base. The pairs of bases will be entered automatically; the user need only enter the data below for the appropriate pair of bases. A separate page will be presented for each pair of bases (see Figure 38).

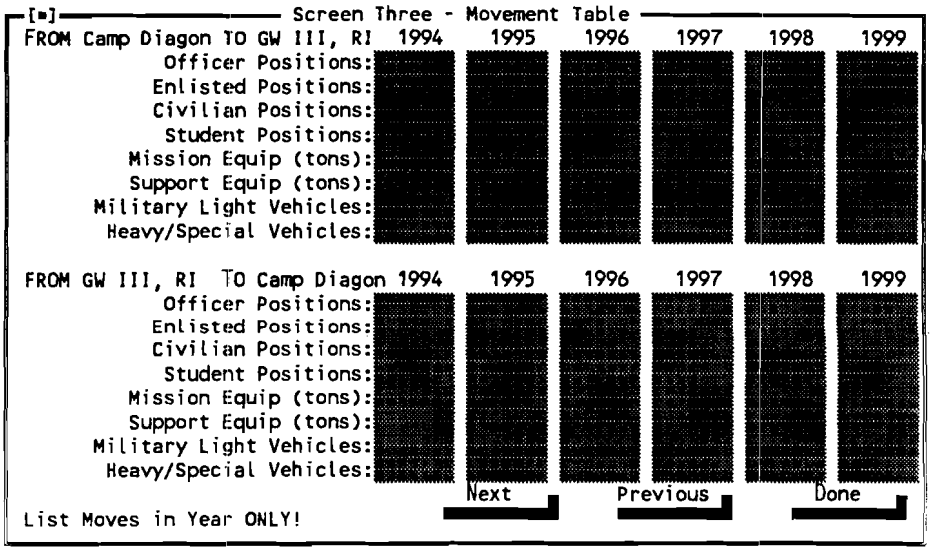

FIGURE 38 - Screen Three - Movement Table

Officer Positions

The total number of officer and warrant officer positions moving from one base of a pair to the other base in each year of the scenario. (Allowed entries 0 to 30,000 officers)

Enlisted Positions

The total number of enlisted personnel positions moving from one base of a pair to the other base in each year of the scenario. (Allowed entries 0 to 30,000 enlisted personnel)

Civilian Positions

The total number of civilian government employee positions (not contractors) moving from one base of a pair to the other base in each year of the scenario. (Allowed entries 0 to 30,000 civilians)

Student Positions

The total number of military student slots (PCS and TDY) moving from one base of a pair to the other in each year of the scenario. (Allowed entries 0 to 30,000 students)

Mission Equipment

The total tons (2000 pounds/ton) of mission equipment moving from one base of a pair to the other base in each year of the scenario. (Allowed entries 0 to 99,999 tons)

Support Equipment

The total tons (2000 pounds/ton) of support equipment moving from one base of a pair to the other base in each year of the scenario. (Allowed entries 0 to 99,999 tons)

Military Light Vehicles

The total number of vehicles which will be driven from one base of a pair to the other base in each year of the scenario. The Army enters tons rather than number of vehicles. (Allowed entries 0 to 99,999 vehicles, or tons for Army)

Heavy/Special Vehicles

The total number of large/special vehicles which will be transported (not driven) from one base of a pair to the other base in each year of the scenario. The Army enters tons rather than number of vehicles. (Allowed entries 0 to 99,999 vehicles, or tons for Army)

go back and fix

4.4 DATA ENTRY SCREEN 4 - BASE INFORMATION (STATIC)

For each base identified in the scenario (listed on Screen 1) the user will enter the specific information below. This data defines the starting point at each base as well as lists values which are expected to remain relatively constant at the base over the period of analysis. It will not change over the scenario years, and will change very little, if at all, from one scenario to another. A separate page will be presented for each base (see Figure 39). The user should save this data for each base so that time can be saved when the same base is part of another scenario. See Section 3.5.1 and 3.5.4 for discussions of loading this data from/to the database.

```
[■]──────── Screen Four - Base Information (Static) ────────
Base:  Fort Deluxe, CA
    Total Officers (1993):                RPMA Non-Payroll ($K/Yr):
    Total Enlisted (1993):            Communication Costs ($K/Yr):
    Total Students (1993):                BOS Non-Payroll ($K/Yr):
   Total Civilians (1993):                    BOS Payroll ($K/Yr):
                                        Fam Housing Costs ($K/Yr):
   % Mil Families On Base:        %
  % Civs Not Will to Move:        %                Area Cost Factor:

 Off Housing Units Vacant:              CHAMPUS In-Patient($/Vis):
 Enl Housing Units Vacant:             CHAMPUS Out-Patient($/Vis):
   Total Facilities (KSF):              CHAMPUS Shift to Medicare:        %

    Officer VHA ($/Month):                         Activity Code:
   Enlisted VHA ($/Month):
                                        [ ] Homeowner Assistance Program
    Per Diem Rate ($/Day):              [ ] Unique Activity Information
 Freight Cost ($/Ton/Mi):

                                   Next        Previous        Done
```

FIGURE 39 - Screen Four - Base Information (Static)

Total Officers (Year 0)

The total number of officers assigned to the base at the beginning of the scenario. (Allowed entries 0 to 50,000 officers)

Total Enlisted Personnel (Year 0)

The total number of enlisted personnel assigned to the base at the beginning of the scenario. (Allowed entries 0 to 50,000 enlisted personnel)

Total Military Students (Year 0)

The total number of military students assigned to the base at the beginning of the scenario. (Allowed entries 0 to 50,000 students)

Total Civilian Employees Year (0)

The total number of civilian government employees (not contractors) assigned to the base at the beginning of the scenario. (Allowed entries 0 to 50,000 civilians)

Percent of Military Families Living On Base

The percent of assigned military families which live on the base at the beginning of the scenario. (Allowed entries 0.0 to 100.0 percent)

Percent Civilians Not Willing to Move

The percent of assigned civilian employees who if their positions were moved to a new base would not be willing to relocate to the new base. (Allowed entries 0.0 to 100.0 percent)

Officer Housing Units Vacant

The total number of officer family housing units (sets of quarters) which are vacant at the beginning of the scenario. (Allowed entries 0 to 9,000 units; usually 0)

Enlisted Housing Units Vacant

The total number of enlisted family housing units (sets of quarters) which are vacant at the beginning of the scenario. (Allowed entries 0 to 9,000 units; usually 0)

Total Facilities

The total thousands of square feet of facilities, **except for Family Housing**, existing on the base at the beginning of the scenario. Family housing units and costs are treated separately from the rest of the base facilities. (Allowed entries 0 to 20,000,000 thousand square feet)

Officer VHA

The average monthly Variable Housing Allowance for officers who live off-base. (Allowed entries 0 to 20,000 $/month)

Enlisted VHA

The average monthly Variable Housing Allowance for enlisted personnel who live off-base. (Allowed entries 0 to 20,000 $/month)

Per Diem Rate

The per diem rate at the base. (Allowed entries 0 to 400 $/day).

Freight Cost

The average cost of freight movement expected at the base. (Allowed entries 0.00 to $100.00 $/ton/mile)

RPMA Non-Payroll

The Real Property Maintenance Activities budget for the base at the beginning of the scenario which does not include either payroll or family housing costs (which are accounted for separately). (Allowed entries 0 to 99,999,999 $K/Yr)

Communications Costs

The base communications budget at the beginning of the scenario. If not separated from other Base Operations Costs they may be entered as part of the Base Operations Non-Payroll Costs, and no communications costs entered here. (Allowed entries 0 to 99,999,999 $K/Yr)

Base Operations Non-Payroll

The base operations budget for the base at the beginning of the scenario which does not include military or government civilian payroll costs (which are accounted for separately). Department contracts, which do include contractor payroll costs, should be included in this figure. (Allowed entries 0 to 99,999,999 $K/Yr)

Base Operations Payroll

The base operations payroll budget at the beginning of the scenario. (Allowed entries 0 to 99,999,999 $K/Yr)

Family Housing Costs

The total family housing budget for the base at the beginning of the scenario. (Allowed entries 0 to 99,999,999 $K/Yr)

Area Cost Factor

The published Area Cost Factor for construction costs at the base. (Allowed entries 0.00 to 5.00; Default value is 1.00)

CHAMPUS In-Patient

The average cost paid by CHAMPUS for each in-patient visit of retirees and their dependents to civilian (off-base) hospitals/treatment facilities. (Allowed entries 0 to 99,999,999 $/visit)

CHAMPUS Out-Patient

The average cost paid by CHAMPUS for each out-patient visit of retirees and their dependents to civilian (off-base) hospitals/treatment facilities. (Allowed entries 0 to 99,999,999 $/visit)

CHAMPUS Shift to Medicare

The percent of retirees and dependents who are eligible for Medicare rather than CHAMPUS. This is used to adjust CHAMPUS costs for those entitled to Medicare coverage. (Allowed entries 0.00 to 100.00 percent; Default value is 20.9%)

Activity Code

A unique code for each installation, so that ADDER can identify installations in multiple scenarios for the Economic Impact Database (see Chapter 6). (Allowed entries up to six alphanumeric characters; installations with no activity code will be ignored by ADDER when making an Economic Impact Database file.

Homeowner Assistance Program

Designated [X] if the base will have Homeowner Assistance Program costs incurred. When HAP is not applied at a base Relocation Services Entitlement (RSE) costs may be incurred for civilian employees. (Allowed entries On [X] or Off [ ])

Unique Activity Information

Designated [X] if the activity being modeled can not be modeled using standard calculations. Marking this field with an "X" will disconnect several of the model's algorithms and make Screen 8 - "Unique Activities" available for data entry (see Section 4.8). (Allowed entries On [X] or Off [ ])

4.5 DATA ENTRY SCREEN 5 - BASE INFORMATION (DYNAMIC)

For each base identified in the scenario (listed on Screen 1) the user will enter the specific information below. A separate page will be presented for each base (see Figure 40). This data does change over the scenario years, and will be greatly different from one scenario to another.

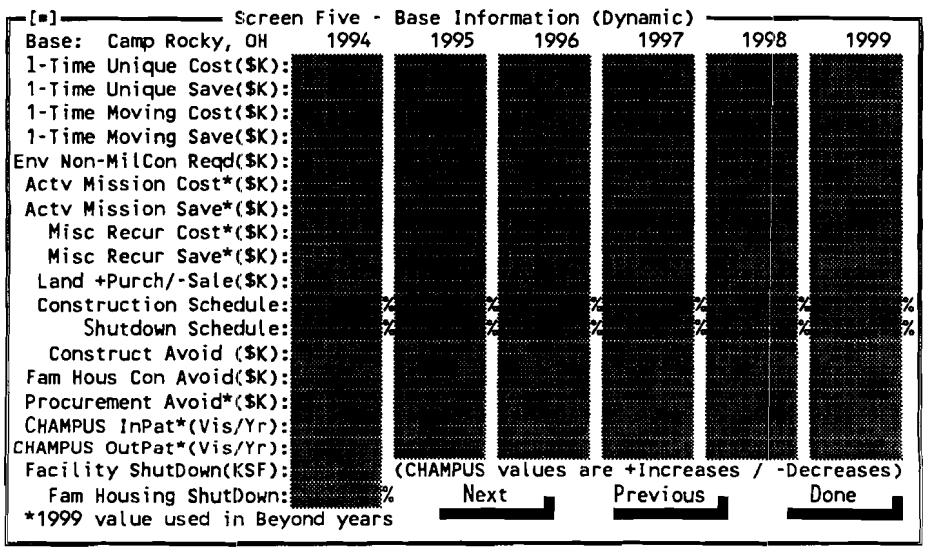

FIGURE 40 - Screen Five - Base Information (Dynamic)

One-Time Unique Costs

The unique non-recurring expenditures during each year which can not be portrayed properly elsewhere. (Allowed entries 0 to 999,999 $K)

One-Time Unique Savings

The unique non-recurring savings during each year which can not be portrayed properly elsewhere. (Allowed entries 0 to 999,999 $K)

One-Time Moving Costs

The unique costs of moving during each year. Examples are special equipment or munitions transportation or calibration of laboratory equipment after it is moved. (Allowed entries 0 to 999,999 $K)

One-Time Moving Savings

The unique savings of moving during each year. (Allowed entries 0 to 999,999 $K)

Environmental Non-Construction Required

The costs (negative if savings) in each scenario year of environmental mitigation, which are not construction. An example would be the purchase of additional sewage treatment, or solid waste disposal from off base. (Allowed entries -99,999 to 999,999 $K)

Activity Mission Costs

The change in mission costs each year realized by the activity(ies) which are involved in the closure/realignment. These are costs incurred by the activity; not part of the normal operations of the base. Examples of activity mission costs are fuel to travel to training areas, supplies, contracts, etc. not part of normal base overhead costs. These costs should be entered for the base the activity is located at. The figure entered in the last year will be assumed to continue throughout the remainder of the modeled years. (Allowed entries 0 to 999,999 $K)

Activity Mission Savings

The change in mission savings each year realized by the activity(ies) which are involved in the closure/realignment. These are savings incurred by the activity; not part of the normal operations of the base. These savings should be entered for the base the activity is located at. The figure entered in the last year will be assumed to continue throughout the remainder of the modeled years. (Allowed entries 0 to 999,999 $K)

Miscellaneous Recurring Costs

Recurring costs in each year, which are not covered in other entries above. The figure entered in the last year will be assumed to continue throughout the remainder of the modeled years. (Allowed entries 0 to 999,999 $K)

Miscellaneous Recurring Savings

Recurring savings in each year, which are not covered in other entries above. The figure entered in the last year will be assumed to continue throughout the remainder of the modeled years. (Allowed entries 0 to 999,999 $K)

Land Purchases/Sales

The purchase or sale price of land during each scenario year. (Allowed entries -99,999 to 999,999 $K)

Construction Schedule

The user may enter the percent of construction to be completed (and therefore the percent of construction costs incurred) in each year. User must have turned on Auto Time-Phase? on Screen 1; otherwise COBRA will calculate the construction schedule based on percentage of personnel moving in the next year (this is so construction is finished before the people who require those facilities are moved. (Allowed entries 0 to 100 percent)

Shutdown Schedule

The user may enter the percent of facilities shutdown to be completed in each year. User must have turned on Auto Time-Phase? on Screen 1; otherwise COBRA will calculate the shutdown schedule based on percentage of personnel moving out. (Allowed entries 0 to 100 percent)

Construction Avoidance

The savings during each year generated by not having to construct projects (less Family Housing projects) which are no longer necessary because of the closure/realignment action. (Allowed entries 0 to 999,999 $K)

Family Housing Construction Avoidance

The savings during each year generated by not having to construct Family Housing projects which are no longer necessary because of the closure/realignment action. (Allowed entries 0 to 999,999 $K)

Procurement Avoidance

The savings during each year generated by the reduction/cancellation of current contracts (not already included in mission, RPMA, or Base Ops costs). If reduction/cancellation of a contract will result in penalty costs, they should be subtracted from the savings in the first year that savings are reported. Also any termination penalties for mission, RPMA, and Base Ops contracts should be reflected here. The figure entered in the last year will be assumed to continue throughout the remainder of the modeled years. (Allowed entries 0 to 999,999 $K)

On-Base In-Patient Retiree Visits

The yearly change in the number of in-patient visits of retirees and their dependents to the on-base hospital/treatment facilities. This is used to calculate costs/savings of changes in CHAMPUS load. (Allowed entries -30,000 to 30,000 visits)

On-Base Out-Patient Retiree Visits

The yearly change in the number of out-patient visits of retirees and their dependents to the on-base hospital/treatment facilities. This is used to calculate costs/savings of changes in CHAMPUS load. (Allowed entries -30,000 to 30,000 visits)

Facilities Shut Down

The total thousands of square feet of buildings to be closed. (Allowed entries 0 to 999,999 thousand square feet)

Family Housing Shutdown

The percent of Family Housing that is to be shutdown. (Allowed entries 0.0 to 100.0 percent)

4.6 DATA ENTRY SCREEN 6 - BASE INFORMATION (PERSONNEL)

For each base identified in the scenario (listed on Screen 1) the user will enter the specific information below. A separate page will be presented for each base (see Figure 41). This data does change over the scenario years, and will be greatly different from one scenario to another.

```
[■]──────── Screen Six - Base Information (Personnel) ────────
Base:  Fort Distant, AK
                                 1994     1995     1996     1997     1998     1999
Force Structure Changes by Year (+Increases / -Decreases)
        Officer Changes:
       Enlisted Changes:
       Civilian Changes:
        Student Changes:
Scenario Changes by Year (+Additions / -Eliminations)
        Officer Changes:
       Enlisted Changes:
       Civilian Changes:
Scenario Changes (No Salary Savings) by Year (-Eliminations)
        Officer Changes:
       Enlisted Changes:
       Civilian Changes:
Caretaker Staff Changes by Year (+Increases / -Decreases)
    Military Caretakers:
    Civilian Caretakers:

                                        Next        Previous        Done
List Changes in Year ONLY!
```

FIGURE 41 - Screen Six - Base Information (Personnel)

Officer Force Structure Changes

The total number of officer and warrant officer position changes at the base in each year, **independent of the closure/realignment action**. Costs/savings resulting from force structure changes are excluded from COBRA calculations. (Allowed entries -30,000 to 30,000 officers)

Enlisted Force Structure Changes

The total number of enlisted position changes at the base in each year, **independent of the closure/realignment action**. Costs/savings resulting from force structure changes are excluded from COBRA calculations. (Allowed entries -30,000 to 30,000 enlisted)

Civilian Force Structure Changes

The total number of civilian position changes at the base in each year, **independent of the closure/realignment action**. Costs/savings resulting from force structure changes are excluded from COBRA calculations. (Allowed entries -30,000 to 30,000 civilians)

Student Force Structure Changes

The total number of military student position changes at the base in each year, **independent of the closure/realignment action**. Costs/savings resulting from force structure changes are excluded from COBRA calculations. (Allowed entries -30,000 to 30,000 civilians)

Officer Scenario Changes

The total number of officer and warrant officer positions added or eliminated at the base in each year, **as a direct result of the closure/realignment action**. Savings resulting from positions eliminated are included in COBRA calculations. (Allowed entries -30,000 to 30,000 officers)

Enlisted Scenario Changes

The total number of enlisted positions added or eliminated at the base in each year, **as a direct result of the closure/realignment action**. Savings resulting from positions eliminated are included in COBRA calculations. (Allowed entries -30,000 to 30,000 enlisted)

Civilian Scenario Changes

The total number of civilian positions added or eliminated at the base in each year, **as a direct result of the closure/realignment action**. Savings resulting from positions eliminated are included in COBRA calculations. (Allowed entries -30,000 to 30,000 civilians)

Officer Scenario Changes (No Salary Savings)

The total number of officer and warrant officer positions eliminated at the base in each year, **as a direct result of the closure/realignment action**. There are no salary savings resulting from these positions eliminated. (Allowed entries 0 to -30,000 officers)

Enlisted Scenario Changes (No Salary Savings)

The total number of enlisted positions eliminated at the base in each year, **as a direct result of the closure/realignment action**. There are no salary savings resulting from these positions eliminated. (Allowed entries 0 to -30,000 enlisted)

Civilian Scenario Changes (No Salary Savings)

The total number of civilian positions eliminated at the base in each year, **as a direct result of the closure/realignment action**. There are no salary savings resulting from these positions eliminated. (Allowed entries 0 to -30,000 civilians)

Military Caretakers

The total number of military personnel added to or subtracted from a caretaker force at the base for each year. It is assumed that military caretakers are enlisted personnel. This should be used only if the base is deactivating. (Allowed entries -30,000 to 30,000 military)

Civilian Caretakers

The total number of government civilian personnel added to or subtracted from a caretaker force at the base for each year. This should be used only if the base is deactivating. (Allowed entries -30,000 to 30,000 civilians)

go back to pattern between screen 7 + table 4

4.7 DATA ENTRY SCREEN 7 - BASE INFORMATION (CONSTRUCTION)

For each base identified in the scenario (listed on Screen 1) the user will enter the specific information below. A separate page will be presented for each base (see Figure 42). If construction is not needed at the base, the Screen should be left blank.

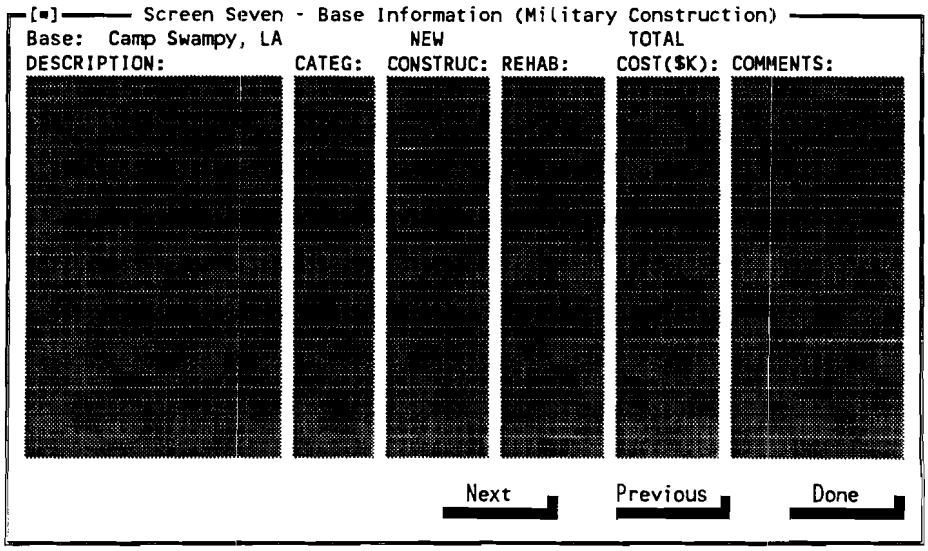

FIGURE 42 - Screen Seven - Base Information (Military Construction)

Description

The description of a construction and/or rehabilitation effort required to support the closure/realignment scenario. (Allowed entries up to 20 characters)

Category

The MILCON category of the requirement, from Standard Factors Table 4 (see Section 4.13). The user may, if desired, only type in the first three letters, and the program will automatically complete the entry from those categories on the Construction Standard Factors Table. If the entry is not listed on Standard Factors Table 4, COBRA will change it to "OTHER". (Allowed entries up to 5 characters)

New Construction

The size of the new construction required, in the appropriate units of measure (SF, SY, LF, BL), from Standard Factors Table 4 (see Section 4.13). This value times the unit cost on Standard Factors Table 4, is the basis of new construction costs. (Allowed entries 0 to 99,999,999 of the unit of measure)

Rehabilitation

The size of the rehabilitation requirement, in the appropriate units of measure (SF, SY, LF, BL), from Standard Factors Table 4 (see Section 4.13). This value times the unit cost and rehabilitation vs new construction, on Standard Factors Table 2, is the basis of rehabilitation costs. (Allowed entries 0 to 99,999,999 of the unit of measure)

Total Cost

The total cost, for the requirement where it is listed, for new construction and/or rehabilitation needed to support the closure/realignment action. **When the user enters a figure here construction costs are not calculated but the figure entered here is accepted as the total cost; COBRA then disregards the New Construction and Rehab figures for Military Construction cost calculations (although these figures are used elsewhere, and must be entered).** Requirements in the "OTHER" category have no unit costs in the Standard Factors table, and must have their Total Costs entered here. (Allowed entries 0 to 99,999,999 $K)

Comments

This is a place for the user to enter up to a full line of text to describe or clarify the scope of the construction listed. The screen only shows a small window of this text at one time, however when printed on the Military Construction Assets Report (see Section 5.8) the entire line will appear on the line right below that showing the numerical information for the requirement. (Allowed entries up to 78 characters)

4.8 DATA ENTRY SCREEN 8 - BASE INFORMATION (UNIQUE ACTIVITIES)

This Data Entry screen is available for those situations where the model's standard algorithms do not apply. "Unique Activities" are defined as those installations for which the model's overhead, support for move, caretaker/mothball, and equipment/vehicle movement algorithms cannot be used. Most industrial activities can be accommodated without the use of this screen. In those cases where Screen 8 is required, the user must first designate the base as a Unique Activity on Screen 4 (see Section 4.4). A separate page will be presented for each indicated base (see Figure 43).

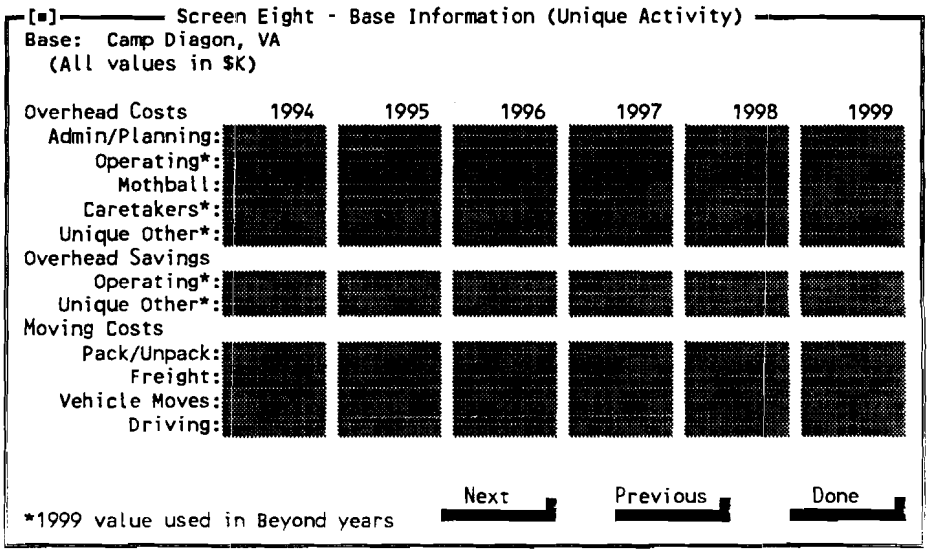

FIGURE 43 - Screen Eight - Base Information (Unique Activities)

Administrative and Planning Overhead Costs

The administrative and planning overhead costs for each scenario year. (Allowed entries 0 to 9,999,999 $K)

Operating Overhead Costs

The operating overhead costs for each scenario year: the figure entered for the last year will be assumed to continue through the remainder of the study years. (Allowed entries 0 to 9,999,999 $K)

Mothball Overhead Costs

The mothball overhead costs for each scenario year. (Allowed entries 0 to 9,999,999 $K)

Caretaker Overhead Costs

The caretaker overhead costs for each scenario year; the figure entered for the last year will be assumed to continue through the remainder of the study years. (Allowed entries 0 to 9,999,999 $K)

Other Overhead Costs

The overhead costs for each scenario year which are not included in the overhead costs listed above; the figure entered for the last year will be assumed to continue through the remainder of the study years. (Allowed entries 0 to 9,999,999 $K)

Operating Overhead Savings

The operating overhead savings for each scenario year; the figure entered for the last year will be assumed to continue through the remainder of the study years. (Allowed entries 0 to 9,999,999 $K)

Other Overhead Savings

The overhead savings for each scenario year which are not included in the operating overhead savings listed above; the figure entered for the last year will be assumed to continue through the remainder of the study years. (Allowed entries 0 to 9,999,999 $K)

Packing/Unpacking Moving Costs

The packing and unpacking moving costs for each scenario year. (Allowed entries 0 to 9,999,999 $K)

Freight Moving Costs

The freight moving costs for each scenario year. (Allowed entries 0 to 9,999,999 $K)

Vehicle Moving Costs

The vehicle moving costs for each scenario year, **excluding those vehicles which are driven**. (Allowed entries 0 to 9,999,999 $K)

Driving Moving Costs

The costs of driving vehicles during their movement. (Allowed entries 0 to 9,999,999 $K)

4.9 DATA ENTRY SCREEN 9 - EXPLANATORY NOTES

A single page screen is provided for the user to make any end notes that are desired (see Figure 44). These may explain the overall scenario or expand on information input on a specific Data Entry or Standard Factors screen. This information will be printed only on the Input Data Report (see Section 5.12).

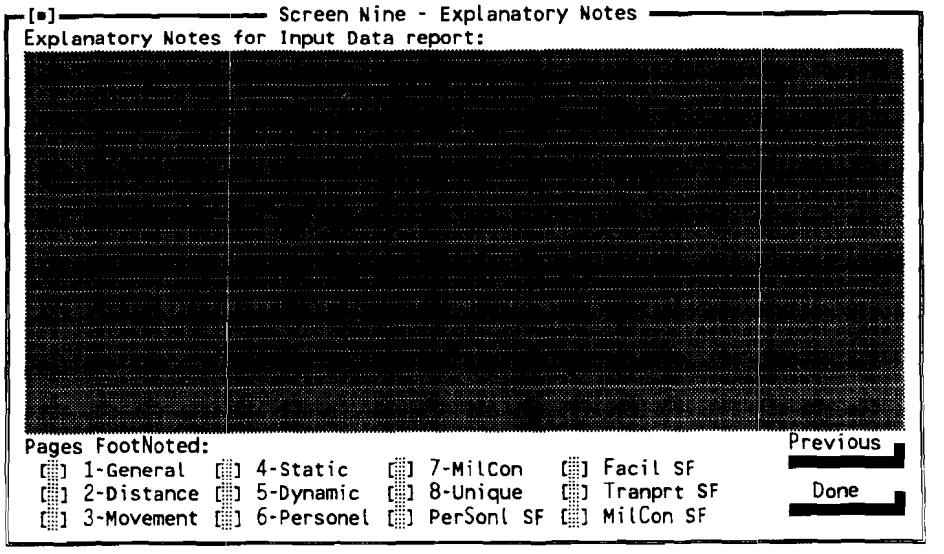

FIGURE 44 - Screen Nine - Explanatory Notes

Explanatory Notes for Input Data Report:

A free text input of user's notes referring to one or more screens. (Allowed entries 10 lines of up to 78 characters; although only 74 characters show per line on this screen at one time.)

Pages Footnoted:

User indicates screen(s) to which the note(s) apply, by clicking on the space for that screen, or by moving the cursor to highlight that screen and pressing the Space Bar, or by typing the highlighted number/letter of the screen. These screens will then be identified as having note(s) on the Input Data Report (see Section 5.12). (Allowed entries On [X] or Off [ ])

4.10 STANDARD FACTORS TABLE 1 - PERSONNEL (see Figure 45)

This and the other Standard Factors Tables contain information common to all bases in the scenario. This data will not change for any one scenario, and should change very little, if at all, from one scenario to another. These Standard Factors tables should be saved for use in subsequent scenarios (see Section 3.4.6).

```
[■]──────────── Table One - Standard Personnel Factors ────────────

        Officers Married:                %   Civ Retired Pay Factor:                %
        Enlisted Married:                %       Priority Placement:                %
  Enlisted Housing MilCon:               %     PPS Place Involv PCS:                %
                                                    Civ PCS Cost ($):
  Officer Salary ($/Year):                        New Hire Cost ($):
 Officer BAQ w/Depdts ($):
 Enlisted Salary ($/Year):                 Nat Median Home Price($K):
Enlisted BAQ w/Depdts ($):                  Home Sale Reimburse Rate:                %
Avg Unemploy Cost($/Week):                Max Home Sale Reimburs($):
Unemploy Eligible (Weeks):                Home Purch Reimburse Rate:                %
 Civilian Salary ($/Year):                Max Home Purch Reimbur($):
                                                 Home Ownership Rate:                %
       Civilian Turnover:                %       HAP Home Value Rate:                %
Civilian Early Retirement:               %        HAP Receiving Rate:                %
  Civilian Regular Retire:               %       RSE Home Value Rate:                %
  Civilian RIF Pay Factor:               %        RSE Receiving Rate:                %

   Standard Factors File
  Description:                                   Next          Done
```

FIGURE 45 - Table One - Standard Personnel Factors

Officers Married

The percent of total officers who are married. Married officer couples, assigned to the same base should be counted as one married officer (i.e. Do not double-count two officers who are married to each other). This is used to calculate HAP, HHG transportation, and Family Housing budget. (Allowed entries 0.00 to 100.00 percent)

Enlisted Married

The percent of total enlisted personnel who are married. Married enlisted couples, assigned to the same base should be counted as one married member (i.e. Do not double-count two enlisted members who are married to each other). This is used to calculate HAP, HHG transportation, and Family Housing budget. (Allowed entries 0.00 to 100.00 percent)

Enlisted Housing MILCON

The percent of new Family Housing and Bachelor Quarters construction to be assigned to enlisted personnel. This is used to determine the allocation of newly constructed on-post housing/barracks. (Allowed entries 0.00 to 100.00 percent)

Officer Salary

The average officer annual salary. This is used to calculate the savings of elimination of officer positions. (Allowed entries 0.00 to 99,999.99 $/Year)

Officer BAQ - With Dependents

The average Basic Allowance for Quarters for officers, with dependents. This is used to calculate costs/savings of changes in the officer population living off-post. (Allowed entries 0.00 to 20,000.00 $/month)

Enlisted Salary

The average enlisted annual salary. This is used to calculate the savings of elimination of enlisted positions. (Allowed entries 0.00 to 99,999.99 $/Year)

Enlisted BAQ - With Dependents

The average Basic Allowance for Quarters for enlisted, with dependents. This is used to calculate costs/savings of changes in the enlisted population living off-post. (Allowed entries 0.00 to 20,000.00 $/month)

Average Unemployment Costs

The average weekly unemployment cost. This is used to calculate unemployment costs over the period of unemployment eligibility. (Allowed entries 0.00 to 2,000.00 $/week; Default is $216/week)

Unemployment Eligibility

The number of weeks over which unemployment payments are paid. Used in conjunction with Average Unemployment Costs and personnel positions lost to calculate unemployment costs. (Allowed entries 0 to 52 weeks; Default is 26 weeks)

Civilian Salary

The average annual salary for government civilian employees. This is used to calculate costs/savings of changes in the size of the civilian workforce. (Allowed entries 0.00 to 99,999.99 $/Year)

Civilian Turnover

The average percent of government civilian employees who normally leave their positions each year for reasons **not related to closure/realignment actions**. This is used to adjust the size of the civilian workforce for normal turnovers. (Allowed entries 0.00 to 100.00 percent)

Civilian Early Retirement

The average percent of government civilian employees who retire early each year **as a result of closure/realignment actions**. This is used to adjust the size of the civilian workforce for early retirements, and to calculate early retirement costs. (Allowed entries 0.00 to 100.00 percent)

Civilians regular Retirement

The average percent of government civilian employees expected to retire each year but **not as a result of closure/realignment actions**. This is used to adjust the size of the civilian workforce for normal retirement. (Allowed entries 0.00 to 100.00 percent)

Civilian RIF Pay Factor

The average percent of government civilian employee annual pay that will be paid as severance pay to those losing their jobs **as a result of Reduction In Force associated with the closure/realignment action**. (Allowed entries 0.00 to 100.00 percent)

Civilian Retired Pay Factor

The average percent of increase in government civilian retirement pay as a result of early retirements. This is used to calculate the costs of early retirements. (Allowed entries 0.00 to 100.00 percent)

Priority Placement

The average percent of government civilian employees who receive other government jobs as a result of the Priority Placement System. (Allowed entries 0.00 to 100.00 percent)

PPS Placements Involving PCS

The percent of personnel who receive jobs through the Priority Placement System who must move more that 50 miles. This is used to calculate moving costs. (Allowed entries 0.00 to 100.00 percent)

Civilian PCS Cost

The average cost of relocating a government civilian employee to a new location, who has received a job through the Priority Placement System (if the move is over 50 miles). An average Permanent Change of Station cost is used since PPS placements will result in relocations to undetermined locations. (Allowed entries 0.00 to 99,999.99 $)

New Hire Cost

The average cost to hire a new civilian employee. (Allowed entries 0.00 to 10,000.00 $)

National Median Home Price

The median home cost over the entire United States. This is adjusted by the base Area Cost Factor, and then used to calculate HAP and RSE costs. (Allowed entries 0.00 to 2,500.00 $K)

Home Sale Reimbursement Rate

The average percent of home sales reimbursement. (Allowed entries 0.00 to 100.00 percent)

Maximum Home Sale Reimbursement

The maximum reimbursement for home sales. (Allowed entries 0.00 to 25,000.00 $)

Home Purchase Reimbursement Rate

The average percent of home purchase reimbursement. (Allowed entries 0.00 to 100.00 percent)

Maximum Home Purchase Reimbursement

The maximum reimbursement for home purchase. (Allowed entries 0.00 to 25,000.00 $)

Home Ownership Rate

The average percent of military personnel and government civilian employees who own their homes. (Allowed entries 0.00 to 100.00 percent)

Homeowners Assistance Program (HAP) Home Value Rate

The percent of house value that HAP will pay. This is used to calculate HAP costs, which reported on the HAP/RSE line of the output Reports. (Allowed entries 0.00 to 100.00 percent; Default is 37%)

Homeowners Assistance Program (HAP) Receiving Rate

The average percent of homeowners who will be provided with this service. HAP will only be costed at a base when RSE is not applied, and it will be reported on the HAP/RSE line of output Reports. (Allowed entries 0.00 to 100.00 percent; Default is 20%)

Relocation Service Entitlement (RSE) Home Value Rate

The percent of house value that RSE will pay. This is used to calculate RSE costs, which reported on the HAP/RSE line of the output Reports. (Allowed entries 0.00 to 100.00 percent; Default is 23%)

Relocation Service Entitlement (RSE) Receiving Rate

The average percent of Civilian homeowners who will be provided with this service. RSE will only be costed at a base when HAP is not applied, and it will be reported on the HAP/RSE line of output Reports. (Allowed entries 0.00 to 100.00 percent; Default is 15%)

Standard Factors File Description

A free-text entry for the user to describe the Standard Factors file. This is only used when the user calls-up the File Directory (see Section 3.4.3). (Allowed entries up to 20 characters)

4.11 STANDARD FACTORS TABLE 2 - FACILITIES (see Figure 46)

```
[■]──────── Table Two - Standard Facilities Factors ────────

RPMA/BOS MODIFIERS                      MILCON PERCENTAGES
   RPMA Building SF Index:                 Rehab vs. New Construct:      %
     BOS Population Index:                 Info Management Account:      %
  Program Managemt Factor:      %                Design Percentage:      %
     (Indices are used as exponents)              SIOH Percentage:      %
                                            Contingency Percentage:      %
CARETAKER COSTS                               Site Prep Percentage:      %
    Admin Space (SF/Pers):
     Mothball Cost ($/SF):                 NET PRESENT VALUE REPORT
                                                NPV/ROI Discount Rate:    %
AVERAGE SIZES                               NPV/ROI Inflation Rate:     %
   Bachelor Quarters (SF):
     Family Quarters (SF):

APPROPRIATION REPORT INFLATION RATES
        1994      1995      1996      1997      1998      1999     Beyond
        %         %         %         %         %         %         %

                                   Next      Previous      Done
```

FIGURE 46 - Table Two - Standard Facilities Factors

RPMA Buildings Index

The exponent of base building square footage, used in Real Property Maintenance Activity Non-Payroll cost calculations. This represents the nonlinearity of the relationship between change in base building area and the change in RPMA costs; normal value of this index is $\leq$ 1.0. (Allowed entries 0.00 to 5.00)

BOS Population Index

The exponent of base population, used in Base Operations Support Non-Payroll cost calculations. This represents the nonlinearity of the relationship between change in base population and the change in BOS costs; normal value of this index is $\leq$ 1.0. (Allowed entries 0.00 to 10.00)

Program Management Factor

Coefficient that the Base Operations Support (Payroll and Non-Payroll) is multiplied by to calculate the costs of administrative support for movements of personnel and equipment. (Allowed entries 0.0 to 100.0)

Caretaker Admin Space Needs

The average administrative space required for each caretaker. (Allowed entries 0.0 to 1,000,000.0 SF)

Mothball Cost

The average cost to mothball facilities. (Allowed entries 0.00 to 100.00 $/square feet)

Average Bachelor Quarters Size

The average square feet of bachelor quarters. This is used to convert square feet of construction into sets of bachelor quarters. (Allowed entries 0 to 500 square feet)

Average Family Quarters Size

The average square feet of family quarters. This is used to convert square feet of construction into sets of family quarters. (Allowed entries 0 to 2,000 square feet)

Rehabilitation vs New Construction Costs

The average percent of new construction costs required to rehabilitate a space of equal size. This is used to adjust costs for rehabilitation rather than new construction requirements. (Allowed entries 0.0 to 100.0 percent)

Information Management Account Percentage

The average percent of construction cost required to provide communications; only used for categories measured in square feet. (Allowed entries 0.0 to 100.0 percent)

Design Percentage

The average percent of construction cost which must be added to accomplish planning and design. (Allowed entries 0.0 to 100.0 percent)

SIOH Percentage

The average percent of construction cost which must be added to cover project supervision, inspection, and overhead. (Allowed entries 0.0 to 100.0 percent)

Contingency Percentage

The average percent of construction cost which must be added to cover unforseen (contingency) requirements. (Allowed entries 0.0 to 100.0 percent)

Site Preparation Percentage

The average percent of construction cost which must be added to cover site preparation of the construction area. (Allowed entries 0.0 to 100.0 percent)

NPV/ROI Discount Rate

The discount rate to be used for the Net Present Value and Return On Investment calculations (see Sections 5.1 and 5.2). (Allowed entries 0.00 to 100.00 percent)

NPV/ROI Inflation Rate

The inflation rate to be used for the Net Present Value and Return On Investment calculations (see Sections 5.1 and 5.2). (Allowed entries 0.00 to 100.00 percent)

Appropriation Report Inflation Rates

The inflation rate projected for each of the six years of the scenario. These are used for the Appropriations Detail Report only (see Section 5.3) in inflation is enabled (see Section 3.3.7). (Allowed entries 0.00 to 100.00 percent)

4.12 STANDARD FACTORS TABLE 3 - TRANSPORTATION (see Figure 47)

```
[■]──────── Table Three - Standard Transportation Factors ────────

Material/Assignd Pers(Lb):                Equip Pack & Crate($/Ton):
                                            Milit Light Vehic($/Mi):
   Officer HHG(Lb/Family):                   Heavy/Spec Vehic($/Mi):
  Enlisted HHG(Lb/Family):                  POV Reimbursement($/Mi):
  Military HHG(Lb/Single):                 Air Transport($/Pass Mi):
  Civilian HHG(Lb/Person):                  Misc($/Direct Employee):

 Total HHG Costs($/100Lb):                 Avg Mil Tour Length(Yrs):
                                          Routine PCS($/Pers/Tour):
                                          One-Time Off PCS Cost($):
                                          One-Time Enl PCS Cost($):

                                  Next        Previous        Done
```

FIGURE 47 - Table Three - Standard Transportation Factors

Material Per Assigned Person

The average weight of material per person assigned, other than mission and support equipment which is included on Screen 3. (Allowed entries 0.0 to 10,000.00 pounds per person)

Officer HHG

The average pounds of household goods per officer family. (Allowed entries 0 to 100.000 pounds/family)

Enlisted HHG

The average pounds of household goods per enlisted family. (Allowed entries 0 to 100.000 pounds/family)

Military HHG

The average pounds of household goods per single military member. (Allowed entries 0 to 10,000 pounds/military)

Civilian HHG

The average pounds of household goods per government civilian employee. (Allowed entries 0 to 100.000 pounds/employee)

Total HHG Costs

The average cost of packing, storing, and unpacking 100 pounds of household goods. (Allowed entries 0.00 to 100.00 $/100lb.)

Equipment Packing and Crating

The cost for packing and crating of material to be moved. (Allowed entries 0.0 to 100,000.00 $/ton)

Military Light Vehicle

The average cost per mile of driving military light vehicles. (Allowed entries 0.00 to 1,000.00 $/mile)

Heavy/Special Vehicle

The average cost per mile of transporting (not driving) heavy or special military vehicles. (Allowed entries 0.00 to 1,000.00 $/mile)

POV Reimbursement

The average reimbursement rate for driving Personally Owned Vehicles. (Allowed entries 0.00 to 100,000.00 $/mile)

Air Transport

The average cost of air transporting a passenger. (Allowed entries 0.00 to 100,000.00 $/mile)

Miscellaneous

The average moving cost per direct employee, not covered by other moving costs. (Allowed entries 0.00 to 100,000.00 $/employee)

Average Military Tour Length

The average length of military assignments. This is used to adjust the moving costs to account for those personnel who would move each year, independent of the closure/realignment action. (Allowed entries 1.00 to 20.00 years; Default is 3.00 years)

Routine PCS Costs

The average routine PCS costs per military position, per move. This is used in conjunction with the Average Military Tour Length to offset PCS costs to account for personnel who would move each year, independent of the closure/realignment action. (Allowed entries 0.00 to 100,000.00 $/person/move)

One-Time Officer PCS Costs

The average one-time costs of officer PCSs, per person. This is used in conjunction with the number of officer positions eliminated to estimate costs of moving officers to their "final" locations. (Allowed entries 0.00 to 100,000.00 $/person)

One-Time Enlisted PCS Costs

The average one-time costs of enlisted PCSs, per person. This is used in conjunction with the number of enlisted positions eliminated to estimate costs of moving enlisted personnel to their "final" locations. (Allowed entries 0.00 to 100,000.00 $/person)

4.13 STANDARD FACTORS TABLE 4 - CONSTRUCTION (see Figure 48)

```
[■]──────── Table Four - Standard Construction Factors ────────
MilCon Categories    Units  Cost/UM     Optional Categories   Units  Cost/UM
Horizontal           (SY)                A:
Waterfront           (LF)                B:
Air Operations       (SF)                C:
Operational          (SF)                D:
Administrative       (SF)                E:
School Buildings     (SF)                F:
Maintenance Shops    (SF)                G:
Bachelor Quarters*                       H:
Family Quarters*                         I:
Storage Facilities   (SF)                J:
Dining Facilities    (SF)                K:
Recreation Facil     (SF)                L:
Communications Facil (SF)                M:
Shipyard Maintenance (SF)                N:
RDT&E Facilities     (SF)                O:
POL Storage          (BL)                P:
Ammunition Storage   (SF)                Q:
Medical Facilities   (SF)                R:
Environmental                                          Previous      Done
*Units:  SF or EA (each)
```

Figure 48 - Table Four - Standard Construction Factors

Cost per Unit of Measure

The average cost per Unit of Measure (UM) for new construction of each of the military construction categories listed. (Allowed entries 0.00 to 99,999.99 $/UM)

Bachelor Quarters Construction Units

This construction category unit of measure is entered by the user as either SF or EA. (Allowed entries up to two characters; Default value is 'SF')

Family Quarters Construction Units

This construction category unit of measure is entered by the user as either SF or EA. (Allowed entries up to two characters; Default value is 'SF')

Environmental Construction Units

This construction category line is for construction required for environmental mitigation. The units of measure for this category may be filled in by the user (Allowed entries 2 characters e.g. KG, TN, etc.). Only include actual on-base construction here; non-construction environmental mitigation costs are entered on Screen 5.

Optional Categories/Units

These are lines for entry of up to 18 construction requirements (and UM) which do not fit into the listed categories, or that the user wishes to specifically separate from other requirements in a category which is listed. (Allowed entries up to 20 characters for categories, 2 characters for units)

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CHAPTER 5

COBRA REPORT OUTPUT

CHAPTER 5 - COBRA REPORT OUTPUT

This chapter will cover the various Reports that COBRA generates. Although most Reports provide outputs in terms of dollar costs and savings, several also provide non-dollar value information (such as numbers of personnel, square feet of construction, etc.). Both costs and savings can be reported as positive or negative numbers. A cost reported as a positive number represents an actual cost, and a negative cost represents an actual savings. Similarly, a savings reported as a positive number represents an actual savings, and a negative savings represents an actual cost. The viewing and printing of individual and group Reports was discussed earlier (see Section 3.7.5) and therefore, will not be discussed again here. Appendix B contains sample COBRA Reports.

5.1 REALIGNMENT SUMMARY REPORT (File name COBSUM.RPT)

The key output of the COBRA model is the Realignment Summary. This Report is contained on one or two pages (see Section 3.3.7), which display key values with which to evaluate the modeled scenario and to compare it with other scenarios.

ROI Year (Years to Break Even)

This is Fiscal Year (and the years it takes, after completion of the closure/realignment action) to generate enough savings to offset the Total Costs and reach the break even point. In other terms, this is the Payback Period.

Option NPV in (Year 20)

The Net Present Value of the costs (if negative number, savings) of the realignment in discounted constant First Year dollars. This is a measure of the total costs (over the 20-year period of analysis) to be realized by taking the closure/realignment actions in the scenario. The larger the negative value of NPV, the more the net savings and the more advantage there is to the realignment. If the NPV is not a negative number the realignment will result in a net cost over the 20-year period.

Total One-Time Cost

The cost of doing the closure/realignment modeled. This is the amount that must be offset by the net savings generated by the action.

Net Costs, Military Construction

The net costs (if negative number, savings) in each year, due to changes in construction requirements.

Net Costs, Personnel

The net costs (if negative number, savings) in each year, due to changes in housing allowances, salary savings for eliminated personnel positions and associated costs such as severance pay.

Net Costs, Overhead

The net costs (if negative number, savings) in each year, due to changes in overhead; primarily caused by changes on Real Property Maintenance Activities, Base Operations Support, and Program Planning.

Net Costs, Moving

The net costs (if negative number, savings) in each year, due to movement of personnel and material.

Net Costs, Mission

The net costs (if negative number, savings) in each year, realized by the operations of the organizations that are involved in the closure/realignment. These are in such areas as fuel, supplies, contracts, etc. which are not part of normal base overhead functions.

Net Costs, Other

The net costs (if negative number, savings) in each year, due to factors not covered in the other net costs lines. Examples are sales of real estate, non-construction environmental mitigation, procurement changes, and CHAMPUS.

Officer Positions Eliminated

The total number of officer positions eliminated each year at the bases, **as a direct result of the closure/realignment action**. Does not include positions eliminated with no salary savings.

Enlisted Positions Eliminated

The total number of enlisted positions eliminated each year at the bases, **as a direct result of the closure/realignment action**. Does not include positions eliminated with no salary savings.

Civilian Positions Eliminated

The total number of civilian positions eliminated each year at the bases, **as a direct result of the closure/realignment action**. Does not include positions eliminated with no salary savings.

Officer Realignments

The total number of officer positions realigned each year.

Enlisted Realignments

The total number of enlisted positions realigned each year.

Student Realignments

The total number of student positions realigned each year.

Civilian Realignments

The total number of civilian positions realigned each year.

Total Realignments

The total number of all types of positions realigned each year.

Summary/Description:

If the user has entered a text description of the scenario, it will be printed here (see Section 4.1)

Note: The following values will not be included if the "COBRA Summary Second Page" option in COBRA Setup is disabled (see Section 3.3.7).

Costs, Military Construction

The costs (if negative number, savings) in each year, due to changes in construction requirements.

Costs, Personnel

The costs (if negative number, savings) in each year, due to changes in housing allowances, salary savings for eliminated personnel positions and associated costs such as severance pay.

Costs, Overhead

The costs (if negative number, savings) in each year, due to changes in overhead; primarily caused by changes on Real Property Maintenance Activities, Base Operations Support, and Program Planning.

Costs, Moving

The costs (if negative number, savings) in each year, due to movement of personnel and material.

Costs, Mission

The costs (if negative number, savings) in each year, realized by the operations of the organizations that are involved in the closure/realignment. These are in such areas as fuel, supplies, contracts, etc. which are not part of normal base overhead functions.

Costs, Other

The costs (if negative number, savings) in each year, due to factors not covered in the other net costs lines. Examples are non-construction environmental mitigation, procurement changes, and CHAMPUS.

Savings, Military Construction

The savings (if negative number, costs) in each year, due to changes in construction requirements.

Savings, Personnel

The savings (if negative number, costs) in each year, due to changes in housing allowances, salary savings for eliminated personnel positions and associated costs such as severance pay.

Savings, Overhead

The savings (if negative number, costs) in each year, due to changes in overhead; primarily caused by changes on Real Property Maintenance Activities and Base Operations Support.

Savings, Moving

The savings (if negative number, costs) in each year, due to movement of personnel and material.

Savings, Mission

The savings (if negative number, costs) in each year, realized by the operations of the organizations that are involved in the closure/realignment activities. These are in such areas as fuel, supplies, contracts, etc. which are not part of normal base overhead functions.

Savings, Other

The savings (if negative number, costs) in each year, due to factors not covered in the other net savings lines. Examples are sales of real estate, procurement changes, and CHAMPUS.

5.2 NET PRESENT VALUES REPORT (File name NPV.RPT)

Another key COBRA Report is the Net Present Values (NPV) Report. This is usually contained on a single page, which displays the Cost and Inflated Cost for each year, and NPV of the cost of the realignment for each of the years of the analysis period (only uses more than one page if the years to achieve a net savings is large). The point where the NPV goes from a positive value (a cost) to a negative value (a savings) is the ROI of the scenario; also shown on the COBRA Realignment Summary Report.

Year

The scenario year for which the costs are reported.

Cost

The cost in each year of the analysis (Base-Year dollars).

Adjusted Cost

The inflated/discounted cost in each year of the analysis (Then-Year dollars).

NPV

The Net Present Value of the cumulative cost in each year of the analysis. These are the discounted values of the respective inflated costs for each year.

5.3 APPROPRIATIONS DETAIL REPORT (File name APPDET.RPT)

This Report provides detailed yearly costs, savings, and net costs of the closure/realignment. If the total net costs have not become a negative number (meaning a net savings) at or before the "Beyond" year, no savings are realized for the closure/realignment action. Note that this report may contain pages for each individual base, or be inflated, depending upon the options in the COBRA Setup (see Section 3.3.7).

5.4 ONE-TIME COST REPORT (File name 1TIMCOST.RPT)

This Report provides the total one-time costs, savings, and net costs for the total scenario. The total of the yearly one-time net costs shown on the Appropriations Detail Report is identical to the Total Net One-Time Costs shown on this Report. Note that this report may contain pages for each individual base, depending upon the options in the COBRA Setup (see Section 3.3.7).

5.5 RPMA/BOS CHANGE REPORT (File name RPMABOS.RPT)

This Report shows changes in Real Property Maintenance Activity, Base Operations Support, and Housing costs for each year of the scenario.

5.6 BOS, LAND, SF, AND RPMA DELTAS REPORT (File name DELTAS.RPT)

This Report shows, for each base, the number and percent change in personnel, Base Operations Support costs, Real Property Maintenance Activity costs, combined RPMA and BOS costs, and building square footage. Also shown are the ratio of changes in BOS, RPMA, RPMA plus BOS, acreage, and square footage to changes in personnel.

5.7 MILITARY CONSTRUCTION ASSETS REPORT (File name MILCONAS.RPT)

This Report provides a single-page summary of costs for all bases involved in the closure/realignment where construction or rehabilitation will be required. The cost of each requirement includes not only the construction costs, but also the design, SIOH, site preparation, information management, and contingency costs; also shown are land purchases and construction avoidances. Note that this report may contain pages showing requirements and costs for each individual base, depending upon the options in the COBRA Setup (see Section 3.3.7).

5.8 PERSONNEL IMPACT REPORT (File name PERSIMP.RPT)

This Report shows a one-page summary of yearly civilian personnel realignments and eliminations for the entire scenario. Note that this report may contain pages for each individual base, depending upon the options in the COBRA Setup (see Section 3.3.7).

5.9 PERSONNEL SUMMARY REPORT (File name PERSSUM.RPT)

This Report totals of all personnel Force Structure Changes, Scenario Changes, and Positions Realigning to and from each base.

5.10 PERSONNEL YEARLY PERCENTAGES REPORT (File name PERSPERC.RPT)

This Report shows the yearly number and percentage of personnel changes at each base (percentages are used for automatic scheduling of construction and facilities to be shut down). Also shown are the time-phasings as calculated from the yearly personnel changes. This report is only generated if the "Auto Time-Phase" option on Screen 1 is enabled (see Section 4.1).

5.11 INPUT DATA REPORT (File name INPUTDAT.RPT)

This Report is a print-out of all Data Entry Screens and Standard Factors Tables selected on the COBRA Setup screen (see Section 3.3.7), showing the scenario inputs upon which the other Reports are based.

5.12 SCENARIO ERROR REPORT (File name ERROR.RPT)

This Report is created only if COBRA finds inconsistencies in scenario data. Since all Reports are generated at once, the other Reports will have been made using potentially incorrect data. When a Scenario Error Report is present, therefore, it should be checked immediately to determine if data corrections should be made. Once corrections are made to scenario data the Reports must be executed again before they are used for analysis purposes. The specific data inconsistencies that COBRA checks for are:

Option Package Name, Department

If the Department is not recognized by COBRA, the Report will say so. COBRA will also remind the user if no Option Package Name has been entered.

Base Names

COBRA will alert the user if there are two bases with the same Name, or if a base has no name.

Close Year/Deactivate

COBRA will alert the user if a base is deactivating with no year to be deactivated entered.

Activity Code

COBRA will list all bases with no Activity Code defined on Input Screen 4 (Section 4.4).

Time-Phasing of Construction or Shutdown

If the user is entering these schedules (rather than letting COBRA do them automatically) COBRA will alert if the yearly percentages do not total to 100%.

Caretakers

COBRA will check that no base loses more caretakers than it has, and than none are assigned to a base unless it is to be deactivated.

Personnel Movement/Migration

COBRA will check that no base loses more personnel than it has, and that none remain or move, after it closes.

Personnel Realignments

COBRA checks that civilians retiring, civilian turnover, civilians quitting, and civilians not willing to move never exceed 100%.

Military Construction

COBRA will alert the user if a requirement uses a unit cost of $0. Also, no requirement with an "OTHER" category must have the total cost specified.

RPMA Calculations

COBRA will alert the user if a base has more square feet shutdown than it had, or if a base will [illegible]

CHAPTER 6

OPERATING ADDER

CHAPTER 6 - OPERATING ADDER

ADDER has been designed to operate as closely to COBRA as possible; so that users of COBRA will find ADDER's operation relatively familiar. However, this section should be read completely; and after an initial reading, users need generally refer only to the section(s) where he or she has a question.

6.1 INITIATING ADDER

To open the ADDER program, access the disk/directory where COBRA and ADDER have been installed (see Chapter 2), type "ADDER" and press <ENTER>. The "About ADDER" window will then appear (see Figure 49).

This welcome screen identifies the ADDER model and its version number; the telephone number of R&K Engineering, the COBRA developer, is also provided.

To close the "About ADDER" window and access the Main Menu, click on the "OK" at the bottom-center of the window. Other methods of closing the window are: clicking on the Close Window Square [■] at the upper-left of the window border; clicking on the words "ESC-Close window" on the bottom border; pressing <ENTER>; or pressing <ESC>.

6.2 THE MAIN MENU

The Main Menu is the starting point for using the ADDER program. Upon closing the initial display of the "About ADDER" window, the screen will display the Main Menu (see Figure 50). Along the top of this screen are displayed the "Help", "File", "Reports", "Windows", and "Quit" menu selections. During the use of ADDER additional menu windows, reports, and other data are displayed on the screen; however, the Main Menu selections will always remain displayed behind any other active displays. Each of the Main Menu selections is summarized below.

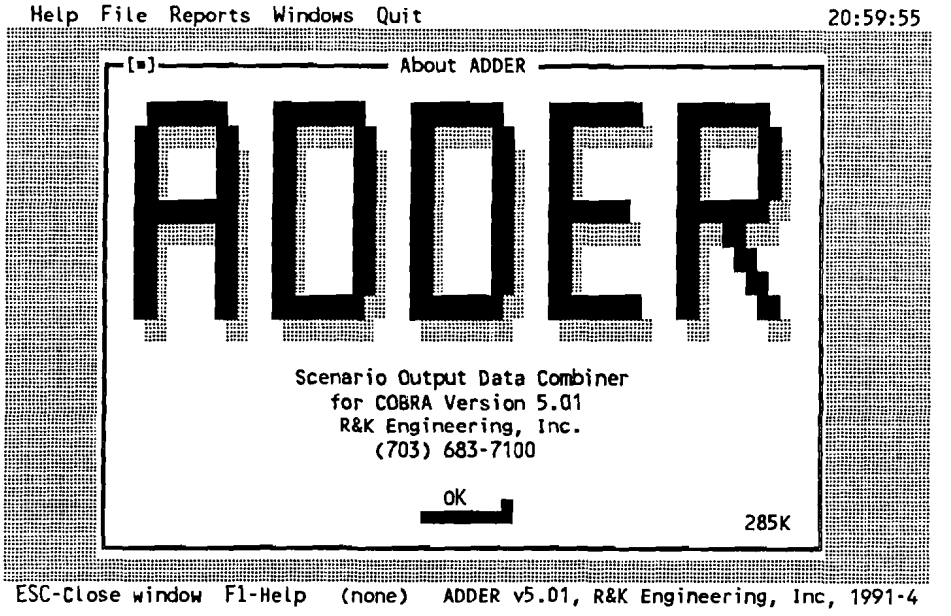

FIGURE 49 - "About ADDER" Window

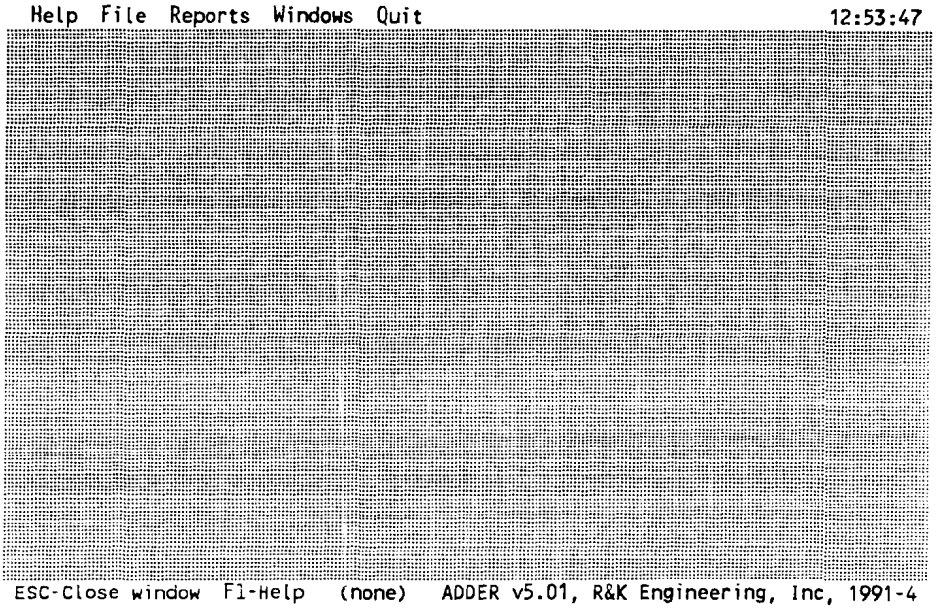

FIGURE 50 - Main Menu

6.3 HELP

From the Main Menu the Help selection is made by either clicking on the word "Help" along the top of the Main Menu screen, or by pressing <ALT-H>. The Help menu will appear (see Figure 51). By clicking on the words "About ADDER" or by pressing <A>, the "About ADDER" window will again be displayed (see Section 6.1, above). The Help menu may be closed by clicking on another Main Menu selection, by clicking on an open area of the screen surface, by clicking on the words "ESC-Close window" on the bottom border, or by pressing <ESC>. Note that the ADDER Help Menu is identical to the COBRA Help Menu (see Section 3.3) except for the lack of a "Files Used" command, and for differences in the ADDER Setup (described below).

6.3.1 Changing ADDER Set-Up

ADDER has several options for generating and printing its reports that can be changed by using the "ADDER Setup" Window (see Figure 52). By clicking on the words "ADDER Setup" or by pressing <S> from the Help Menu, the "ADDER Setup" window is displayed. To cancel any change(s), close the window and return to the Main Menu click on the word "Cancel", or click on the Close Window Square, or press <ESC>. Click on "OK" to save changes. Note that COBRA and ADDER use the same configuration file (COBRA.INI), so that any changes made in one affect them both.

ADDER will format its output for most dot matrix (those that are EPSON/IBM compatible) and laser (those that are are HP LaserJet compatible) printers, or print them unformatted (requiring a wide-carriage printer for most reports). The user can select which type of printer is to be used, along with a printer device name for that printer. The default device name is "PRN" which will work with most system configurations. Should a system not be able to print with this setting (a LAN for example), or should the system have multiple printers (a LaserJet on LPT1: and a dot matrix on LPT2:, for example) the correct device name can be entered in the appropriate "Device Name" field.

If the user wants to change the directory to be used to store Reports, the new entry can be typed into the "Report Directory" field. This may be useful if the user wants to run a new scenario or set of Reports, while continuing to save the current Reports in memory. Unless the directory is changed, any new Reports will automatically overwrite the old ones.

Other options available are whether or not inflation will be applied to the ADDER Appropriation Detail report, and whether or not to include a second page with the ADDER Summary report listing total Costs and Savings. Click on the desired options, or press <ALT> and the highlighted letter, to turn that option on or off (those options with an "X" next to them will be used in future reports.

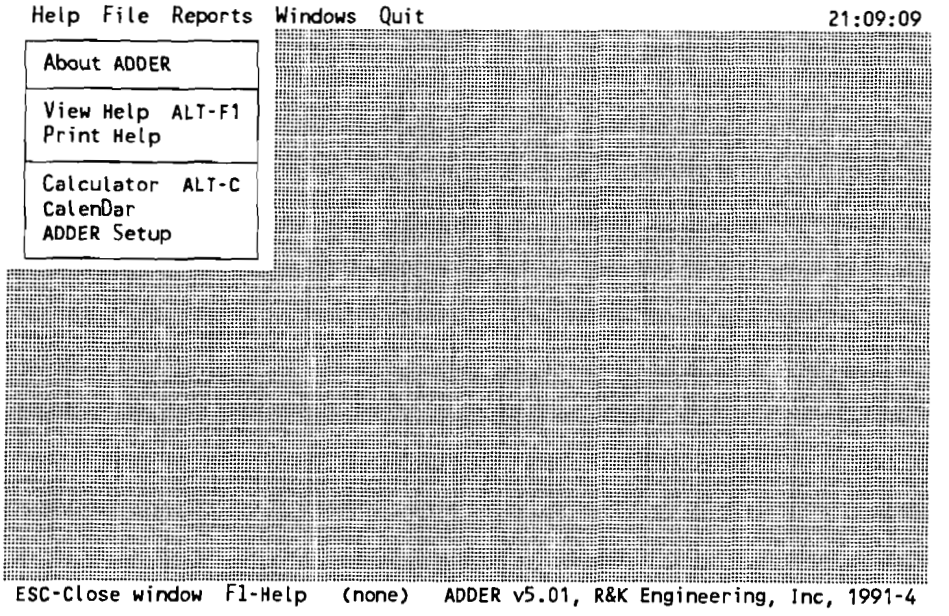

FIGURE 51 - Help Menu

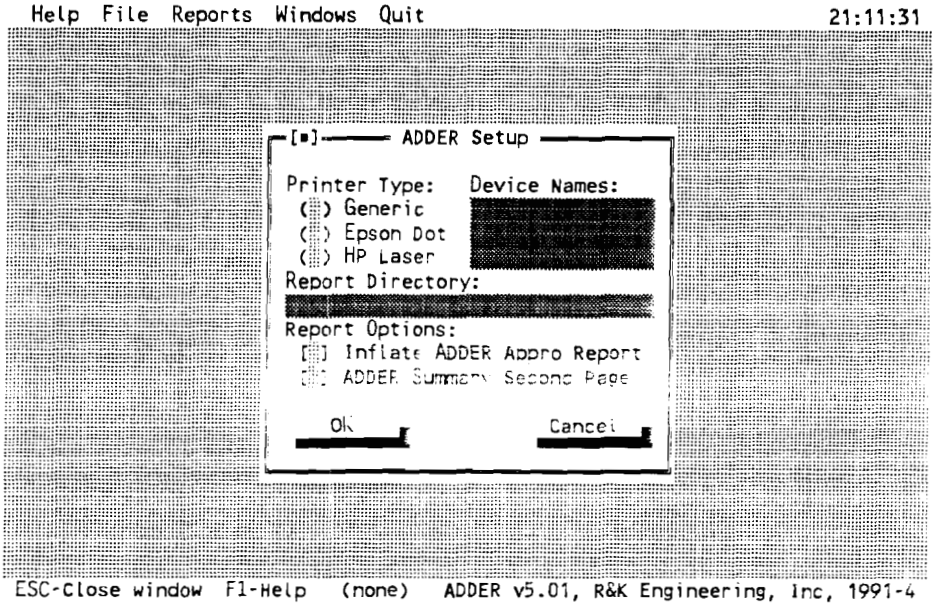

FIGURE 52 - "ADDER Setup" Window

6.4 FILE

The File selection is made by either clicking on the word "File" along the top of the Main Menu screen, or by pressing <ALT-F>. The File menu will appear (see Figure 53). The File menu may be closed by clicking on another Main Menu selection, by clicking on an open area of the screen surface, by clicking on the words "ESC-Close window" on the bottom border, or by pressing <ESC>. Note that the DOS Shell, Change Dir, and Exit options operate in the same manner for ADDER as the do for COBRA (see section 3.4).

6.4.1 Loading Data Files

By clicking on the words "Load Data File" on the File menu or by pressing <L>, the "Select File(s) to Load" window is displayed (see Figure 54). This window consists of one or more pages listing all COBRA output files (in the form "*.OUT") in the current directory. The user may now select as many files as desired to be loaded from the disk into Program memory. The files are selected by clicking on the space in front of the file name, or by typing the highlighted number/letter for the file, or by scrolling to the file name and pressing <SPACE BAR> to select it. A selected file will appear with [X] in front of it on the list. The selected file(s) are loaded into Program memory by clicking on the word "Open", by pressing <O>, or by pressing <ENTER>. To see other pages of this window, click on "Next" or "Previous", or press <N> or <P>. The "Next" and "Previous" selections load the files selected on the current page, and then move to the new page. To do a quick search for a file, type the file name in the "Search for:" field and click on "Open" or press <O>. Search can also be invoked by pressing <ENTER> once to complete the file name entry, and again pressing <ENTER> to start the search. ADDER will load any files selected on the current page, and then move to the page containing the name of the file searched for. This window may be closed with no further loading, and the user returned to the Main Menu, by clicking on the word "Cancel", by clicking on the Close Window Square, or by pressing <ESC>. This window may also be opened from the Main Menu, by pressing <ALT-L>. **Any new files loaded are added to whatever data is already in ADDER Program memory. To clear Program memory before loading in COBRA output file(s), use the Clear Data (see Section 6.4.5) option before the Load Data File option.** The file name of the first data file loaded will be displayed at the bottom border. Note that if different COBRA output files have different values for inflation/discount rates, starting year, etc., the values in the first file loaded will be used.

6.4.2 Loading ALL Files

This option will load ALL COBRA output files (in the form "*.OUT") in the current directory, unlike the Load Data File option (see above) which requires the user to pick and choose files. Note that the Change Dir command (described in section 3.4.8) allows the user to change the current directory. Used in conjunction with the Load ALL Files command, this will allow the user to load all COBRA output files in any directory.

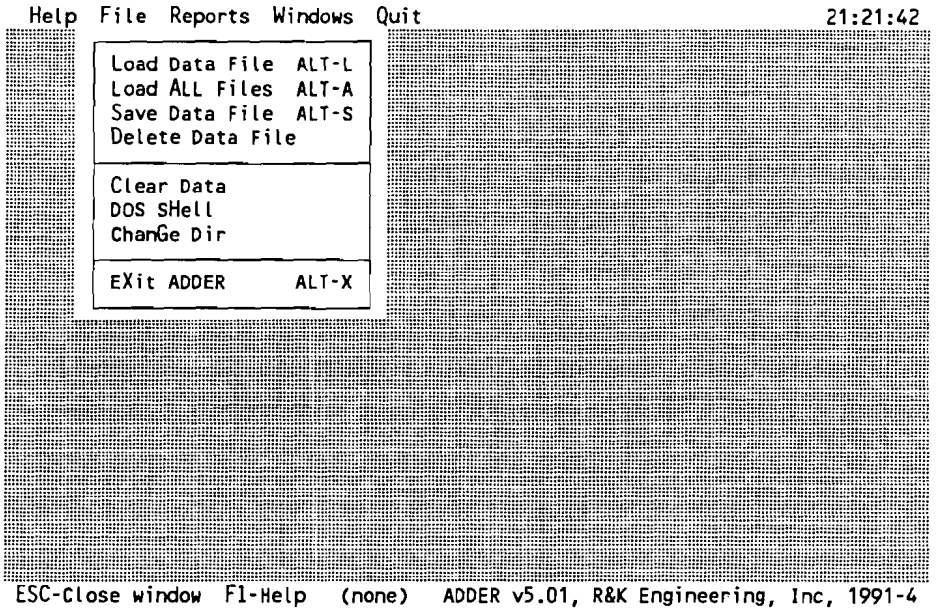

FIGURE 53 - File Menu

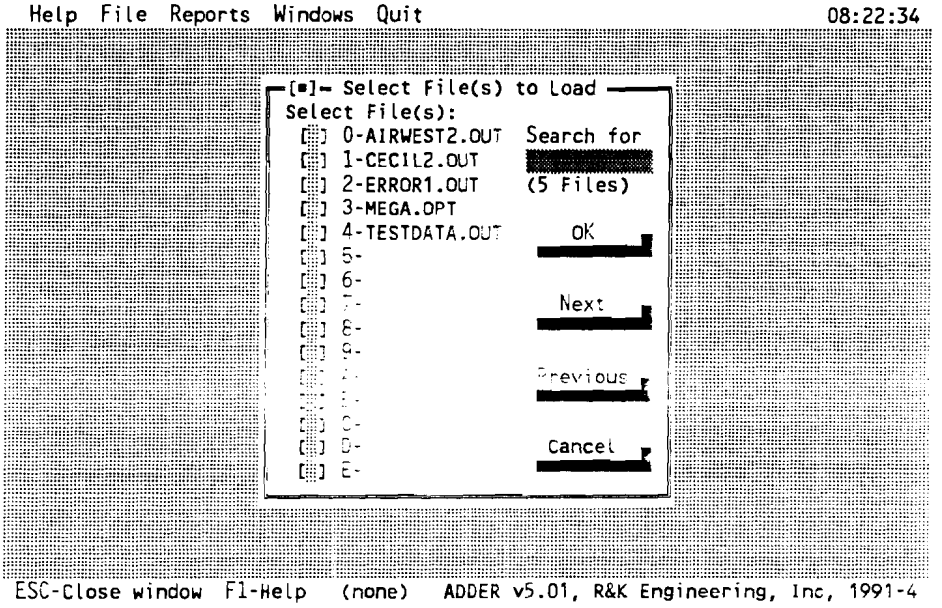

FIGURE 54 - "Select File(s) to Load" Window

6.4.3 Saving Current Data

Combined COBRA output files can be saved into a single file for future retrieval and use. By clicking on the words "Save Data File" on the File menu or by pressing <S>, the "Save Data File" window is displayed (see Figure 55). This window may also be opened from the Main Menu, by pressing <ALT-S>. The saving of the current data set is done by typing the Data file name desired or leaving the previously saved file name, and then clicking on the word "Save". The file may also be saved by pressing <ENTER>. This window may be closed, the save canceled, and the user returned to the Main Menu by clicking on the word "Cancel", or by clicking the Close Window Square, or by pressing <ESC>. Note that combined data files have an extension of ".OPT", instead of ".OUT" like single-scenario files.

6.4.4 Clearing the Data Set

To create a new ADDER scenario combination from scratch, the Program memory should be cleared of any currently loaded Data before loading new COBRA output files (see Sections 6.4.1 and 6.4.2). By clicking on the words "Clear Data Set" on the File menu or by pressing <C>, the currently used Data is removed from the ADDER Program memory (If previously saved, it remains saved on disk). A new Data Set can then be created by loading in other COBRA output files. This window may be closed and the user returned to the Main Menu by clicking on the word "Cancel", or by clicking the Close Window Square, or by pressing <ESC>.

6.4.5 Deleting Saved Data

The user may want to permanently remove COBRA or ADDER output files from disk when they are outdated and/or no longer under consideration. By clicking on the words "Delete Data File" on the File menu or by pressing <D>, a "Delete Data File" window (see Figure 56). The [illegible] clicking on the file to be deleted. The Data [illegible] list may also be accessed by pressing <TAB> to move the cursor to the list, with the <↑> <↓> keys then being used to highlight the desired Data file. The highlighted Data file can then be deleted and the user returned to the Main Menu by clicking on the word "OK" or by pressing <ENTER>. This window may be closed, the delete function canceled, and the user returned to the Main Menu by clicking on the word "Cancel", or by clicking the Close Window Square, or by pressing <ESC>.

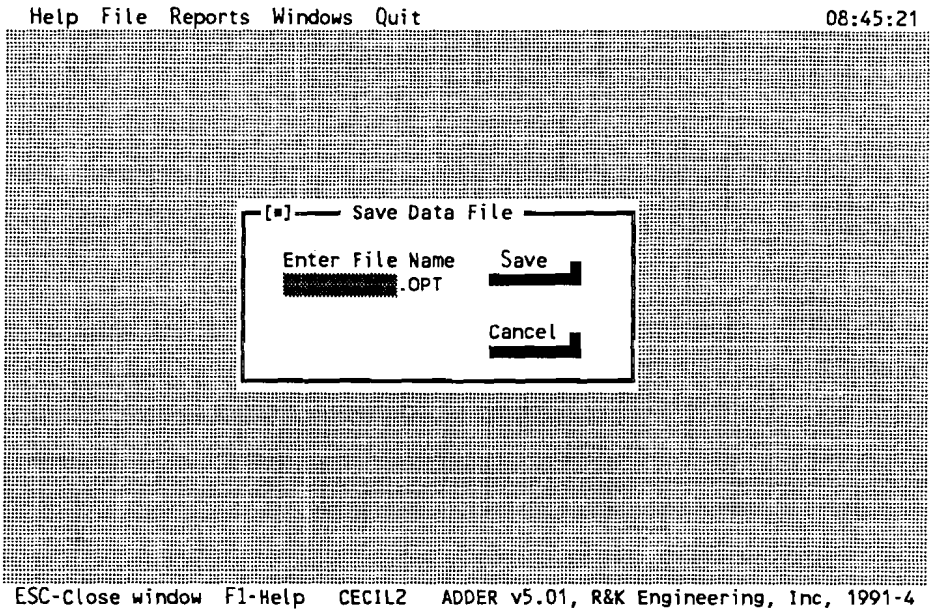

FIGURE 55 - "Save Data File" Window

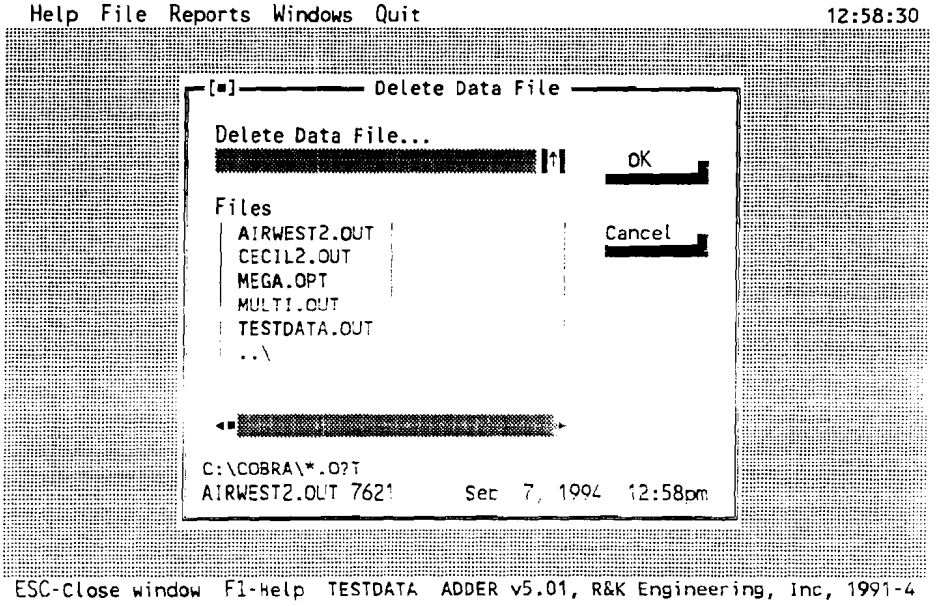

FIGURE 56 - "Delete Data File" Window

6.5 REPORTS

ADDER output Reports are created, viewed on the screen, and printed using the Reports selection on the Main Menu. The Reports selection is made by either clicking on the word "Reports" along the top of the Main Menu screen, or by pressing <ALT-R>. The Reports menu will then appear (see Figure 57). The Reports menu may be closed by clicking on another Main Menu selection, by clicking on an open area of the screen surface, by clicking on the words "ESC-Close window" on the bottom border, or by pressing <ESC>. Note that the ADDER Reports menu is identical to the COBRA Reports menu (see Section 3.7) in all ways but the following:

6.5.1 Generating Reports (Running ADDER)

The user must generate ADDER Reports using the current Data files loaded before these Reports can be viewed or printed. By clicking on the word "Execute" on the Reports menu or by pressing <E>, the ADDER program will generate all Reports. **This must be done before Reports can be viewed in the screen or printed.** Reports can also be executed from the Main Menu by pressing <ALT-E>. Output Reports are covered in detail in the Chapter 7. Note that ADDER Reports have an ".ART" extension, rather than the ".RPT" extension used in COBRA. If while it is executing, ADDER detects inconsistencies in the data an ADDER Error Report will be generated (see Section 7.6). **This Report should be reviewed, and errors resolved, before the other ADDER Reports are used for analysis purposes.** ADDER also generates a data file for the Economic Impact Database. This file has the same name as the ADDER data in memory, but with an ".EIR" extension.

6.5.2 Viewing or Printing a Group of Reports

ADDER uses the same Group files in the format ".GRP" that COBRA does: considering, for example, the COBRA Summary Report and ADDER Summary Report as equivalent. Since ADDER generates less reports than COBRA, however, the "Reports in Group" window is different (see Figure 58). Other than that, all Group functions work identically for COBRA and ADDER (see Section 3.7.5).

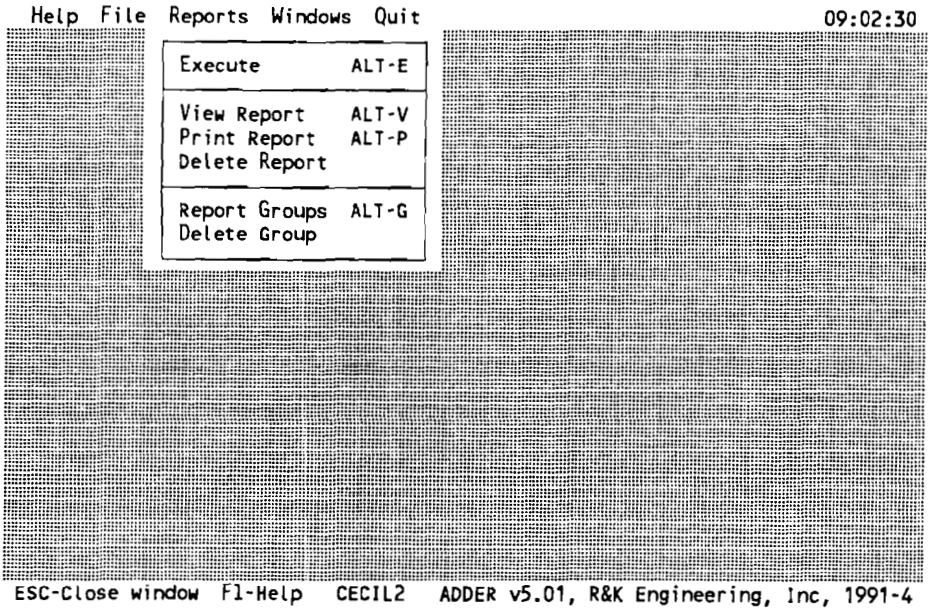

FIGURE 57 - Reports Menu

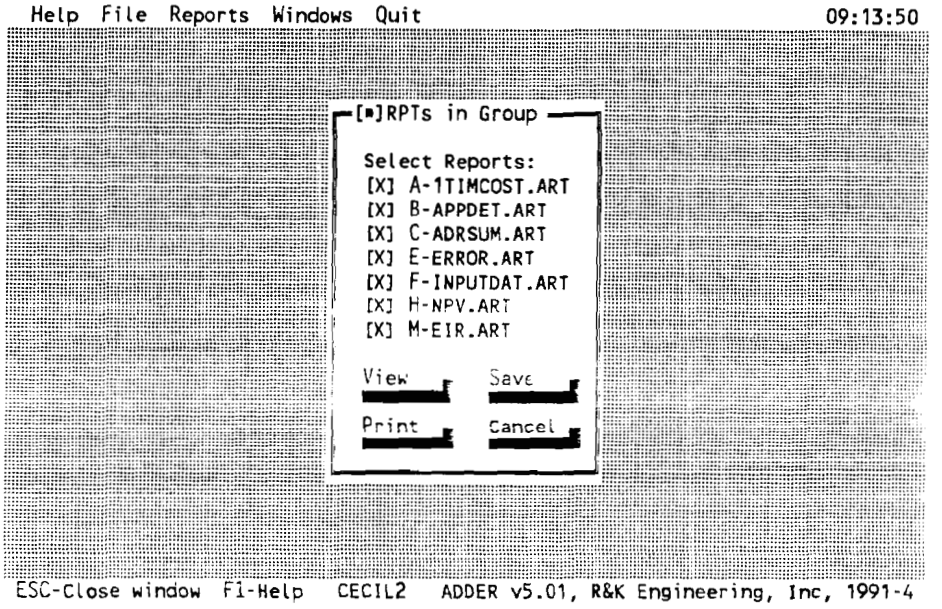

FIGURE 58 - "Reports in Group" window

6.6 WINDOWS

The ADDER Windows Menu (see Figure 59) is in every way identical to the COBRA Windows Menu (see Section 3.8).

6.7 QUIT

Clicking on the Word "Quit" or pressing <ALT-Q> from the Main Menu is the same as exiting ADDER from the File Menu.

6.8 ADVANCED OPERATIONS (Using Command-Line Parameters)

To allow for more efficient use of ADDER, the user may issue some commands to ADDER **directly** from the DOS command line by use of Command-Line Parameters. These advanced features are completely optional. The user may choose never to use them.

To specify which files ADDER should load, enter "ADDER" followed by as many filenames (including wildcards) as desired. For example, all of the following are legal usages of ADDER:

```
ADDER *.OUT
ADDER TESTDATA.OUT MULTI.OUT
ADDER C:\COBRA\ARMY\*.OUT C:\COBRA\NAVY\*.OUT C:\COBRA\USAF\*.OUT
```

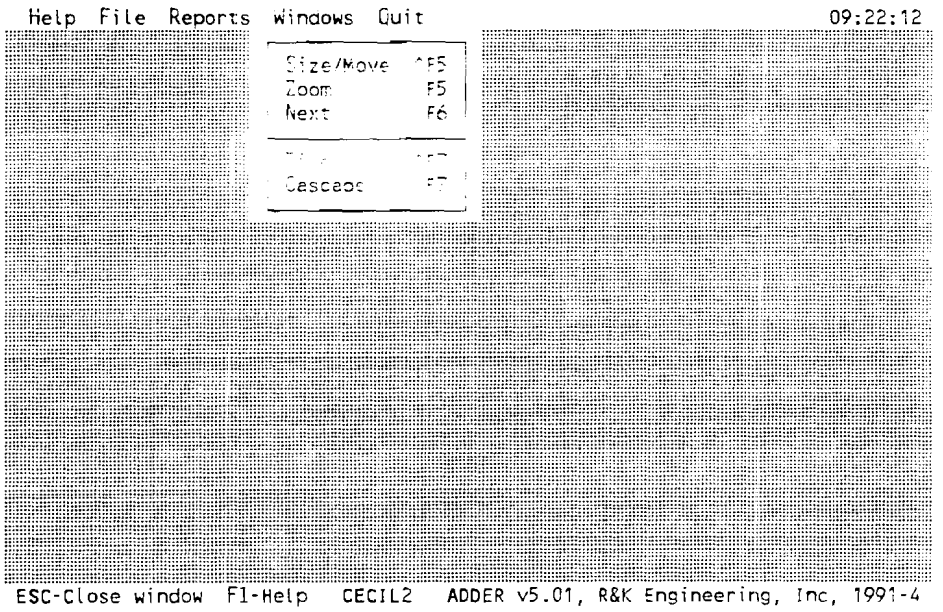

FIGURE 59 - Windows Menu

CHAPTER 7

ADDER REPORT OUTPUT

CHAPTER 7 - ADDER REPORT OUTPUT

This chapter will cover the various Reports that ADDER generates. Although most Reports provide outputs in terms of dollar costs and savings, several also provide non-dollar value information (such as numbers of personnel, etc.). Both costs and savings can be reported as positive or negative numbers. A cost reported as a positive number represents an actual cost, and a negative cost represents an actual savings. Similarly, a savings reported as a positive number represents an actual savings, and a negative savings represents an actual cost. The viewing and printing of individual and group Reports was discussed earlier (see Section 3.7) and therefore, will not be discussed again here. Appendix C contains sample ADDER Reports.

7.1 ADDER REALIGNMENT SUMMARY REPORT (File name ADRSUM.ART)

The key output of the ADDER model is the Realignment Summary. This Report is contained on one or two pages (see Section 6.3.1), which display key values with which to evaluate the modeled scenario and to compare it with other scenarios.

ROI Year (Years to Break Even)
This is Fiscal Year (and the years it takes, after completion of the closure/realignment actions) to generate enough savings to offset the Total Costs and reach the break even point. In other terms, this is the Payback Period.

Option NPV in (Year 20)

The Net Present Value **of the costs** (if negative number, savings) of the realignments in discounted constant First Year dollars. This is a measure of the total costs (over the 20-year period of analysis) to be realized by taking the closure/realignment actions in the scenario. The larger the negative value of NPV, the more the net savings and the more advantage there is to the realignment. If the NPV [illegible] negative number the realignment will result in a net cost over the 20-year period.

Total One-Time Cost

The cost of doing the closure/realignments modeled. This is the amount that must be offset by the net savings generated by the actions.

Net Costs, Military Construction

The net costs (if negative number, savings) in each year, due to changes in construction requirements.

Net Costs, Personnel

The net costs (if negative number, savings) in each year, due to changes in housing allowances, salary savings for eliminated personnel positions and associated costs such as severance pay.

Net Costs, Overhead

The net costs (if negative number, savings) in each year, due to changes in overhead; primarily caused by changes on Real Property Maintenance Activities, Base Operations Support, and Program Planning.

Net Costs, Moving

The net costs (if negative number, savings) in each year, due to movement of personnel and material.

Net Costs, Mission

The net costs (if negative number, savings) in each year, realized by the operations of the organizations that are involved in the closure/realignment. These are in such areas as fuel, supplies, contracts, etc. which are not part of normal base overhead functions.

Net Costs, Other

The net costs (if negative number, savings) in each year, due to factors not covered in the other net costs lines. Examples are sales of real estate, non-construction environmental mitigation, procurement changes, and CHAMPUS.

Officer Positions Eliminated

The total number of officer positions eliminated each year at the bases, **as a direct result of the closure/realignment action**. Does not include positions eliminated with no salary savings.

Enlisted Positions Eliminated

The total number of enlisted positions eliminated each year at the bases, **as a direct result of the closure/realignment action**. Does not include positions eliminated with no salary savings.

Civilian Positions Eliminated

The total number of civilian positions eliminated each year at the bases, **as a direct result of the closure/realignment action**. Does not include positions eliminated with no salary savings.

Officer Realignments

The total number of officer positions realigned each year.

Enlisted Realignments

The total number of enlisted positions realigned each year.

Student Realignments

The total number of student positions realigned each year.

Civilian Realignments

The total number of civilian positions realigned each year.

Total Realignments

The total number of all types of positions realigned each year.

Note: The following values will not be included if the "ADDER Summary Second Page" option in COBRA Setup is disabled (see Section 6.3.1).

Costs, Military Construction

The costs (if negative number, savings) in each year, due to changes in construction requirements.

Costs, Personnel

The costs (if negative number, savings) in each year, due to changes in housing allowances, salary savings for eliminated personnel positions and associated costs such as severance pay.

Costs, Overhead

The costs (if negative number, savings) in each year, due to changes in overhead; primarily caused by changes on Real Property Maintenance Activities, Base Operations Support, and Program Planning.

Costs, Moving

The costs (if negative number, savings) in each year, due to movement of personnel and material.

Costs, Mission

The costs (if negative number, savings) in each year, realized by the operations of the organizations that are involved in the closure/realignment. These are in such areas as fuel, supplies, contracts, etc. which are not part of normal base overhead functions.

Costs, Other

The costs (if negative number, savings) in each year, due to factors not covered in the other net costs lines. Examples are non-construction environmental mitigation, procurement changes, and CHAMPUS.

Savings, Military Construction

The savings (if negative number, costs) in each year, due to changes in construction requirements.

Savings, Personnel

The savings (if negative number, costs) in each year, due to changes in housing allowances, salary savings for eliminated personnel positions and associated costs such as severance pay.

Savings, Overhead

The savings (if negative number, costs) in each year, due to changes in overhead; primarily caused by changes on Real Property Maintenance Activities and Base Operations Support.

Savings, Moving

The savings (if negative number, costs) in each year, due to movement of personnel and material.

Savings, Mission

The savings (if negative number, costs) in each year, realized by the operations of the organizations that are involved in the closure/realignment activities. These are in such areas as fuel, supplies, contracts, etc. which are not part of normal base overhead functions.

Savings, Other

The savings (if negative number, costs) in each year, due to factors not covered in the other net savings lines. Examples are procurement changes, and CHAMPUS.

7.2 ADDER NET PRESENT VALUES REPORT (File name NPV.ART)

Another key ADDER Report is the ADDER Net Present Values (NPV) Report. This is usually contained on a single page, which displays the Cost and Inflated Cost for each year, and NPV of the cost of the realignments for each of the years of the analysis period (only uses more than one page if the years to achieve a net savings is large). The point where the NPV goes from a positive value (a cost) to a negative value (a savings) is the ROI of the scenario; also shown on the ADDER Realignment Summary Report.

Year

The scenario year for which the costs are reported.

Cost

The cost in each year of the analyses (Base-Year dollars).

Adjusted Cost

The inflated/discounted cost in each year of the analyses (Then-Year dollars).

NPV

The Net Present Value of the cumulative cost in each year of the analyses. These are the discounted values of the respective inflated costs for each year.

7.3 ADDER APPROPRIATIONS DETAIL REPORT (File name APPDET.ART)

This Report provides detailed yearly costs, savings, and net costs of the closure/realignments. If the total net costs have not become a negative number (meaning a net savings) at or before the "Beyond" year, no savings are realized for the closure/realignment actions. Note that this report may be inflated, depending upon the options in the ADDER Setup (see Section 6.3.1).

7.4 ADDER ONE-TIME COST REPORT (File name 1TIMCOST.ART)

This Report provides the total one-time costs, savings, and net costs for the totalled scenarios. The total of the yearly one-time net costs shown on the Appropriations Detail Report is identical to the Total Net One-Time Costs shown on this Report.

7.5 ADDER INPUT DATA REPORT (File name INPUTDAT.ART)

This Report is a listing of all COBRA scenarios which were combined into this ADDER scenario.

7.6 ADDER ERROR REPORT (File name ERROR.ART)

This Report is created only if ADDER finds inconsistencies in scenario data. Since all Reports are generated at once, the other Reports will have been made using potentially incorrect data. When an ADDER Error Report is present, therefore, it should be checked immediately to determine if data corrections should be made. Once corrections are made to scenario data the Reports must be executed again before they are used for analysis purposes. The specific data inconsistencies that COBRA checks for are:

COBRA Scenario Names

If the same COBRA Scenario filename appears more than once (meaning that that scenario was probably double-counted), the Report will say so.

7.7 ADDER ECONOMIC IMPACT REPORT (File name EIR.ART)

This Report displays economic information that can be used to assess economic impact.

APPENDIX A

TABLE of ACRONYMS

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APPENDIX A - TABLE of ACRONYMS

Acronym	Meaning
AMC	Army Material Command
BAQ	Basic Allowance for Quarters
BL	Barrel
BOS	Base Operations Support
CHAMPUS	Civilian Health and Medical Program for the Uniformed Services
DA	Department of the Army
DOD	Department of Defense
DOS	Disk Operating System
EA	Each
GAO	General Accounting Office
HAP	Homeowners Assistance Program
HHG	Household Goods
K	Kilobytes
LAN	Local Area Network
LF	Linear Foot (Feet)
MILCON	Military Construction
NPV	Net Present Value
PCS	Permanent Change of Station
POL	Petroleum, Oil, and Lubricants
POV	Privately Owned Vehicle
PPS	Priority Placement System
RDT&E	Research, Development, Test and Evaluation
RIF	Reduction in Force
RITA	Relocation Income Tax Allowance
ROI	Return on Investment
RPMA	Real Property Maintenance Activities
RSE	Relocation Service Entitlement
SF	Square Foot (Feet)
SIOH	Supervision, Inspection, and Overhead
SY	Square Yard(s)
TDY	Temporary Duty
UM	Unit of Measure
VHA	Variable Housing Allowance
$K	Thousands of Dollars

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APPENDIX B

SAMPLE COBRA REPORTS

APPENDIX B - SAMPLE COBRA REPORTS

This appendix contains a set of sample COBRA reports, generated from a fictional closure/realignment scenario. All standard COBRA reports are included, except the Input Data Report (which is only a printout of the input data that makes-up the scenario). Also removed are additional base-specific sections of reports when one such section adequately illustrates COBRA output.

COBRA REALIGNMENT SUMMARY (COBRA v5.01)
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

Starting Year : 1992
Final Year : 1997
ROI Year : 2000 (3 Years)

NPV in 2011($K): -44,749
1-Time Cost($K): 66,866

Net Costs ($K) Constant Dollars

	1992	1993	1994	1995	1996	1997	Total	Beyond
MilCon	20,697	7,346	7,346	8,141	0	0	43,531	0
Person	-468	-3,085	-6,565	-8,877	-10,374	-10,923	-40,293	-10,923
Overhd	1,076	1,094	1,183	1,234	1,145	971	6,704	918
Moving	2,022	1,111	2,232	3,695	2,488	338	11,886	0
Missio	0	-340	-714	-2,414	-3,094	-3,400	-9,962	-3,400
Other	1,877	1,877	1,877	-70	-7,026	-5,066	-6,531	-233
TOTAL	25,204	8,004	5,360	1,710	-16,861	-18,081	5,335	-13,638

	1992	1993	1994	1995	1996	1997	TOTAL
POSITIONS ELIMINATED							
Officers	10	10	10	10	0	0	40
Enlisted	10	10	10	10	0	0	40
Civilians	10	70	40	40	30	0	190
TOTAL	30	90	60	60	30	0	270
POSITIONS REALIGNED							
Officers	60	60	60	60	60	0	300
Enlisted	60	60	60	60	60	0	300
Students	0	0	0	0	0	0	0
Civilians	60	0	30	30	30	0	150
TOTAL	180	120	150	150	150	0	750

COBRA REALIGNMENT SUMMARY (COBRA v5.01) - Page 2
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

Costs ($K) Constant Dollars

	1992	1993	1994	1995	1996	1997	Total	Beyond
MilCon	21,492	8,141	8,141	8,141	0	0	45,916	0
Person	491	607	190	231	290	274	2,085	274
Overhd	1,096	1,298	1,518	1,732	1,792	1,752	9,190	1,699
Moving	2,082	1,171	2,292	3,755	2,548	338	12,186	0
Missio	0	550	1,155	3,905	5,005	5,500	16,115	5,500
Other	2,110	2,110	2,110	163	140	0	6,633	0
TOTAL	27,272	13,878	15,407	17,928	9,775	7,864	92,125	7,474

Savings ($K) Constant Dollars

	1992	1993	1994	1995	1996	1997	Total	Beyond
MilCon	795	795	795	0	0	0	2,385	0
Person	959	3,692	6,755	9,108	10,664	11,198	42,377	11,198
Overhd	21	204	335	498	648	781	2,486	781
Moving	60	60	60	60	60	0	300	0
Missio	0	890	1,869	6,319	8,099	8,900	26,077	8,900
Other	233	233	233	233	7,166	5,066	13,164	233
TOTAL	2,068	5,874	10,047	16,218	26,637	25,945	86,790	21,112

NET PRESENT VALUES REPORT (COBRA v5.01)
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

Year	Cost($)	Adjusted Cost($)	NPV($)
1992	25,204,105	24,031,171	24,031,171
1993	8,003,836	6,937,598	30,968,769
1994	5,359,776	4,223,426	35,192,196
1995	1,709,619	1,224,687	36,416,882
1996	-16,861,245	-10,980,511	25,436,371
1997	-18,080,759	-10,704,266	14,732,105
1998	-13,638,511	-7,340,312	7,391,793
1999	-13,638,511	-6,673,011	718,783
2000	-13,638,511	-6,066,373	-5,347,591
2001	-13,638,511	-5,514,885	-10,862,476
2002	-13,638,511	-5,013,532	-15,876,007
2003	-13,638,511	-4,557,756	-20,433,763
2004	-13,638,511	-4,143,415	-24,577,178
2005	-13,638,511	-3,766,741	-28,343,919
2006	-13,638,511	-3,424,310	-31,768,228
2007	-13,638,511	-3,113,009	-34,881,237
2008	-13,638,511	-2,830,008	-37,711,245
2009	-13,638,511	-2,572,734	-40,283,980
2010	-13,638,511	-2,338,849	-42,622,829
2011	-13,638,511	-2,126,227	-44,749,056

TOTAL APPROPRIATIONS DETAIL REPORT (COBRA v5.01)
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

ONE-TIME COSTS -----($K)-----	1992	1993	1994	1995	1996	1997	Total
CONSTRUCTION							
MILCON	16,270	6,508	6,508	6,508	0	0	35,795
Fam Housing	3,527	1,411	1,411	1,411	0	0	7,759
Land Purch	1,250	0	0	0	0	0	1,250
O&M							
CIV SALARY							
Civ RIF	126	315	0	0	0	0	441
Civ Retire	171	147	73	73	49	0	514
CIV MOVING							
Per Diem	149	0	126	126	119	0	520
POV Miles	7	0	6	6	5	0	25
Home Purch	280	0	237	237	218	0	972
HHG	527	0	438	438	405	0	1,808
Misc	19	0	16	16	15	0	66
House Hunt	134	0	112	112	105	0	463
PPS	2	15	9	9	6	0	42
RITA	165	0	139	139	129	0	573
FREIGHT							
Packing	4	3	4	4	3	0	18
Freight	84	225	255	871	396	142	1,972
Vehicles	0	158	174	790	316	142	1,580
Driving	0	59	65	296	118	53	592
Unemployment	34	84	0	0	0	0	118
OTHER							
Admin/Plan	223	168	126	94	71	53	735
Shutdown	26	26	26	26	22	0	128
New Hire	140	0	15	15	25	0	195
1-Time Move	0	0	0	0	0	0	0
MIL PERSONNEL							
MIL MOVING							
Per Diem	73	73	73	73	73	0	364
POV Miles	28	28	28	28	28	0	141
HHG	538	538	538	538	538	0	2,691
Misc	71	71	71	71	71	0	357
OTHER							
HAP / RSE	163	163	163	163	140	0	792
Environmental	945	945	945	0	0	0	2,835
Info Manage	445	222	222	222	0	0	1,112
1-Time Other	1,002	1,002	1,002	0	0	0	3,006
TOTAL ONE-TIME	26,405	12,163	12,783	12,269	2,855	391	66,866

TOTAL APPROPRIATIONS DETAIL REPORT (COBRA v5.01) - Page 2
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

RECURRINGCOSTS -----($K)-----	1992	1993	1994	1995	1996	1997	Total	Beyond
FAM HOUSE OPS	39	94	125	164	180	180	782	180
O&M								
RPMA	0	0	24	30	30	30	112	30
BOS	87	145	218	290	362	362	1,465	362
Unique Operat	0	0	0	0	0	0	0	0
CHAMPUS	0	0	0	0	0	0	0	0
Caretaker	720	865	1,000	1,127	1,127	1,127	5,967	1,127
MIL PERSONNEL								
House Allow	20	61	102	142	216	274	816	274
OTHER								
Mission	0	550	1,155	3,905	5,005	5,500	16,115	5,500
Misc Recur	0	0	0	0	0	0	0	0
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	867	1,715	2,623	5,659	6,920	7,474	25,259	7,474
TOTAL COST	27,272	13,878	15,407	17,928	9,775	7,864	92,125	7,474

ONE-TIME SAVES -----($K)-----	1992	1993	1994	1995	1996	1997	Total
CONSTRUCTION							
MILCON	795	795	795	0	0	0	2,385
Fam Housing	0	0	0	0	0	0	0
O&M							
1-Time Move	0	0	0	0	0	0	0
MIL PERSONNEL							
Mil Moving	60	60	60	60	60	0	300
Elim PCS	101	101	101	101	0	0	406
OTHER							
Land Sales	0	0	0	0	2,100	0	2,100
Environmental	0	0	0	0	0	0	0
1-Time Other	0	0	0	0	0	0	0
TOTAL ONE-TIME	956	956	956	161	2,160	0	5,191

RECURRINGSAVES -----($K)-----	1992	1993	1994	1995	1996	1997	Total	Beyond
FAM HOUSE OPS	0	0	0	0	0	0	0	0
O&M								
RPMA	1	4	7	10	12	13	48	13
BOS	19	200	328	488	635	768	2,438	768
Unique Operat	0	0	0	0	0	0	0	0
Civ Salary	175	1,575	3,500	4,900	6,125	6,650	22,925	6,650
CHAMPUS	0	0	0	0	4,833	4,833	9,666	0
MIL PERSONNEL								
Off Salary	322	967	1,611	2,255	2,578	2,578	10,310	2,578
Enl Salary	135	405	676	946	1,081	1,081	4,324	1,081
House Allow	226	644	867	905	880	889	4,411	889
OTHER								
Procurement	233	233	233	233	233	233	1,398	233
Mission	0	890	1,869	6,319	8,099	8,900	26,077	8,900
Misc Recur	0	0	0	0	0	0	0	0
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	1,112	4,918	9,090	16,056	24,477	25,945	81,598	21,112
TOTAL SAVINGS	2,068	5,874	10,047	16,218	26,637	25,945	86,790	21,112

TOTAL APPROPRIATIONS DETAIL REPORT (COBRA v5.01) - Page 3
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

ONE-TIME NET -----($K)-----	1992	1993	1994	1995	1996	1997	Total
CONSTRUCTION							
MILCON	15,475	5,713	5,713	6,508	0	0	33,410
Fam Housing	3,527	1,411	1,411	1,411	0	0	7,759
O&M							
Civ Retir/RIF	297	462	73	73	49	0	955
Civ Moving	1,371	461	1,581	3,044	1,837	338	8,632
Other	423	278	167	136	118	53	1,176
MIL PERSONNEL							
Mil Moving	549	549	549	549	651	0	2,847
OTHER							
HAP / RSE	163	163	163	163	140	0	792
Environmental	945	945	945	0	0	0	2,835
Info Manage	445	222	222	222	0	0	1,112
1-Time Other	1,002	1,002	1,002	0	0	0	3,006
Land	1,250	0	0	0	-2,100	0	-850
TOTAL ONE-TIME	25,449	11,206	11,827	12,107	695	391	61,675

RECURRING NET -----($K)-----	1992	1993	1994	1995	1996	1997	Total	Beyond
FAM HOUSE OPS	39	94	125	164	180	180	782	180
O&M								
RPMA	-1	-4	17	20	17	16	64	16
BOS	68	-54	-110	-198	-273	-406	-973	-406
Unique Operat	0	0	0	0	0	0	0	0
Caretaker	720	865	1,000	1,127	1,127	1,127	5,967	1,127
Civ Salary	-175	-1,575	-3,500	-4,900	-6,125	-6,650	-22,925	-6,650
CHAMPUS	0	0	0	0	-4,833	-4,833	-9,666	0
MIL PERSONNEL								
Mil Salary	-457	-1,372	-2,287	-3,201	-3,659	-3,659	-14,635	-3,659
House Allow	-205	-583	-765	-763	-664	-615	-3,595	-615
OTHER								
Procurement	-233	-233	-233	-233	-233	-233	-1,398	-233
Mission	0	-340	-714	-2,414	-3,094	-3,400	-9,962	-3,400
Misc Recur	0	0	0	0	0	0	0	0
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	-244	-3,202	-6,467	-10,397	-17,556	-18,471	-56,340	-13,638
TOTAL NET COST	25,204	8,004	5,360	1,710	-16,861	-18,081	5,335	-13,638

TOTAL ONE-TIME COST REPORT (COBRA v5.01)
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

(All values in Dollars)

Category	Cost	Sub-Total
Construction		
Military Construction	35,795,226	
Family Housing Construction	7,759,477	
Information Management Account	1,111,752	
Land Purchases	1,250,000	
Total - Construction		45,916,455
Personnel		
Civilian RIF	441,000	
Civilian Early Retirement	514,500	
Civilian New Hires	195,000	
Unemployment	117,936	
Total - Personnel		1,268,436
Overhead		
Administrative Support	734,887	
Mothball / Shutdown	128,000	
Total - Overhead		862,887
Moving		
Civilian Moving	4,427,587	
Civilian PPS	42,000	
Military Moving	3,553,819	
Freight	4,162,500	
One-Time Moving Costs	0	
Total - Moving		12,185,907
Other		
HAP / RSE	791,775	
One-Time Unique Costs	5,841,000	
Total - Other		6,632,775
Total One-Time Costs		66,866,461
One-Time Savings		
Military Construction Cost Avoidances	2,385,000	
Family Housing Cost Avoidances	0	
Military Moving	300,000	
Eliminated Military PCS	406,360	
Land Sales	2,100,000	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	
Total One-Time Savings		5,191,360
Total Net One-Time Costs		61,675,101

RPMA/BOS CHANGE REPORT (COBRA v5.01)
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

Net Change($K)	1992	1993	1994	1995	1996	1997	Total	Beyond
RPMA Change	-1	-4	17	20	17	16	64	16
BOS Change	68	-54	-110	-198	-273	-406	-973	-406
Housing Change	39	94	125	164	180	180	782	180
TOTAL CHANGES	106	35	32	-14	-76	-209	-126	-209

PERSONNEL, SF, RPMA, AND BOS DELTAS (COBRA v5.01)
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

	Personnel		SF		
Base	Change	%Change	Change	%Change	Chg/Per
Ft Deluxe	-1,008	-50%	-128,000	-1%	127
Camp Swampy	125	3%	71,938	1%	575
Ft Beach	125	3%	71,938	1%	575
Camp Dusty	125	3%	71,938	1%	575
Camp Frozen	125	3%	71,938	1%	575
Ft Buffalo	125	3%	71,938	1%	575
Base X	125	0%	0	0%	0

	RPMA($)			BOS($)		
Base	Change	%Change	Chg/Per	Change	%Change	Chg/Per
Ft Deluxe	-13,496	-1%	13	-767,700	-30%	762
Camp Swampy	4,510	0%	36	72,407	2%	579
Ft Beach	6,274	0%	50	72,407	2%	579
Camp Dusty	6,274	0%	50	72,407	2%	579
Camp Frozen	6,274	0%	50	72,407	2%	579
Ft Buffalo	6,274	0%	50	72,407	2%	579
Base X	0	0%	0	0	0%	0

	RPMABOS($)		
Base	Change	%Change	Chg/Per
Ft Deluxe	-781,196	-17%	775
Camp Swampy	76,917	1%	615
Ft Beach	78,682	1%	629
Camp Dusty	78,682	1%	629
Camp Frozen	78,682	1%	629
Ft Buffalo	78,682	1%	629
Base X	0	0%	0

TOTAL MILITARY CONSTRUCTION ASSETS (COBRA v5.01)
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

All Costs in $K

Base Name	Total MilCon	IMA Cost	Land Purch	Cost Avoid	Total Cost
Ft Deluxe	0	0	0	0	0
Camp Swampy	9,050	231	250	-2,385	7,146
Ft Beach	8,485	216	250	0	8,951
Camp Dusty	7,919	202	250	0	8,371
Camp Frozen	7,919	202	250	0	8,371
Ft Buffalo	10,182	260	250	0	10,691
Base X	0	0	0	0	0
Totals:	43,555	1,112	1,250	-2,385	43,531

TOTAL PERSONNEL IMPACT REPORT (COBRA v5.01)
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

	Rate	1992	1993	1994	1995	1996	1997	Total
CIVILIAN POSITIONS REALIGNING OUT		60	0	30	30	30	0	150
Early Retirement*	8.00%	6	0	0	0	0	0	6
Regular Retirement*	10.00%	6	0	6	6	6	0	24
Civilian Turnover*	15.00%	12	0	6	6	6	0	30
Civs Not Moving (RIFs)*+		6	0	0	0	0	0	6
Civilians Moving (the remainder)		30	0	18	18	18	0	84
Civilian Positions Available		30	0	12	12	12	0	66
CIVILIAN POSITIONS ELIMINATED		10	70	40	40	30	0	190
Early Retirement	8.00%	1	6	3	3	2	0	15
Regular Retirement	10.00%	1	7	4	4	3	0	19
Civilian Turnover	15.00%	2	11	6	6	5	0	30
Priority Placement#	44.00%	4	31	18	18	13	0	84
Civilians Available to Move		2	15	9	9	7	0	42
Civilians Moving		2	0	9	9	7	0	27
Civilian RIFs (the remainder)		0	15	0	0	0	0	15
CIVILIAN POSITIONS REALIGNING IN		60	0	30	30	30	0	150
Civilians Moving		32	0	27	27	25	0	111
New Civilians Hired		28	0	3	3	5	0	39
Other Civilian Additions		0	0	0	0	0	0	0
TOTAL CIVILIAN EARLY RETIRMENTS		7	6	3	3	2	0	21
TOTAL CIVILIAN RIFS		6	15	0	0	0	0	21
TOTAL CIVILIAN PRIORITY PLACEMENTS#		4	31	18	18	13	0	84
TOTAL CIVILIAN NEW HIRES		28	0	3	3	5	0	39

* Early Retirements, Regular Retirements, Civilian Turnover, and Civilians Not Willing to Move are not applicable for moves under fifty miles.

+ The Percentage of Civilians Not Moving (Voluntary RIFs) varies by base.

Not all Priority Placements involve a Permanent Change of Station. The rate of PPS placements involving a PCS is 50.00%

PERSONNEL SUMMARY REPORT (COBRA v5.01)
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

PERSONNEL SUMMARY FOR: Ft Deluxe, CA

BASE POPULATION (FY 1992, Prior to BRAC Action):

Officers	Enlisted	Students	Civilians
500	500	0	1,000

PERSONNEL REALIGNMENTS:

To Base: Camp Swampy, LA

	1992	1993	1994	1995	1996	1997	Total
Officers	10	10	10	10	10	0	50
Enlisted	10	10	10	10	10	0	50
Students	0	0	0	0	0	0	0
Civilians	10	0	5	5	5	0	25
TOTAL	30	20	25	25	25	0	125

To Base: Ft Beach, CA

	1992	1993	1994	1995	1996	1997	Total
Officers	10	10	10	10	10	0	50
Enlisted	10	10	10	10	10	0	50
Students	0	0	0	0	0	0	0
Civilians	10	0	5	5	5	0	25
TOTAL	30	20	25	25	25	0	125

To Base: Camp Dusty, NV

	1992	1993	1994	1995	1996	1997	Total
Officers	10	10	10	10	10	0	50
Enlisted	10	10	10	10	10	0	50
Students	0	0	0	0	0	0	0
Civilians	10	0	5	5	5	0	25
TOTAL	30	20	25	25	25	0	125

To Base: Camp Frozen, NY

	1992	1993	1994	1995	1996	1997	Total
Officers	10	10	10	10	10	0	50
Enlisted	10	10	10	10	10	0	50
Students	0	0	0	0	0	0	0
Civilians	10	0	5	5	5	0	25
TOTAL	30	20	25	25	25	0	125

PERSONNEL SUMMARY REPORT (COBRA v5.01) - Page 2
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

To Base: Ft Buffalo, KS

	1992	1993	1994	1995	1996	1997	Total
Officers	10	10	10	10	10	0	50
Enlisted	10	10	10	10	101442X0		50
Students	0	0	0	0	0	0	0
Civilians	10	0	5	5	5	0	25
TOTAL	30	20	25	25	25	0	125

To Base: Base X

	1992	1993	1994	1995	1996	1997	Total
Officers	10	10	10	10	10	0	50
Enlisted	10	10	10	10	10	0	50
Students	0	0	0	0	0	0	0
Civilians	10	0	5	5	5	0	25
TOTAL	30	20	25	25	25	0	125

TOTAL PERSONNEL REALIGNMENTS (Out of Ft Deluxe, CA):

	1992	1993	1994	1995	1996	1997	Total
Officers	60	60	60	60	60	0	300
Enlisted	60	60	60	60	60	0	300
Students	0	0	0	0	0	0	0
Civilians	60	0	30	30	30	0	150
TOTAL	180	120	150	150	150	0	750

SCENARIO POSITION CHANGES:

	1992	1993	1994	1995	1996	1997	Total
Officers	-10	-10	-10	-10	0	0	-40
Enlisted	-10	-10	-10	-10	0	0	-40
Civilians	-10	-70	-40	-40	-30	0	-190
TOTAL	-30	-90	-60	-60	-30	0	-270

CARETAKER REQUIREMENTS:

	1992	1993	1994	1995	1996	1997	Total
Military	3		1	1	0	0	6
Civilians	3	1	1	1	0	0	6
TOTAL			2	2	0	0	12

BASE POPULATION (After BRAC Action):

Officers	Enlisted	Students	Civilians
160	166	0	666

PERSONNEL YEARLY PERCENTAGES (COBRA v5.01)
Data As Of 15:37 03/19/1991, Report Created 14:52 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

Base: Ft Deluxe, CA

	Moving In		MilCon	Move Out/Elim		ShutDn
Year	Total	Percent	TimPhas	Total	Percent	TimPhas
1992	0	0.00%	33.33%	210	20.59%	20.59%
1993	0	0.00%	16.67%	210	20.59%	20.59%
1994	0	0.00%	16.67%	210	20.59%	20.59%
1995	0	0.00%	16.67%	210	20.59%	20.59%
1996	0	0.00%	16.67%	180	17.65%	17.65%
1997	0	0.00%	0.00%	0	0.00%	0.00%
TOTALS	0	0.00%	100.00%	1020	100.00%	100.00%

Base: Camp Swampy, LA

	Moving In		MilCon	Move Out/Elim		ShutDn
Year	Total	Percent	TimPhas	Total	Percent	TimPhas
1992	30	24.00%	40.00%	0	0.00%	16.67%
1993	20	16.00%	20.00%	0	0.00%	16.67%
1994	25	20.00%	20.00%	0	0.00%	16.67%
1995	25	20.00%	20.00%	0	0.00%	16.67%
1996	25	20.00%	0.00%	0	0.00%	16.67%
1997	0	0.00%	0.00%	0	0.00%	16.67%
TOTALS	125	100.00%	100.00%	0	0.00%	100.00%

Base: Ft Beach, CA

	Moving In		MilCon	Move Out/Elim		ShutDn
Year	Total	Percent	TimPhas	Total	Percent	TimPhas
1992	30	24.00%	40.00%	0	0.00%	16.67%
1993	20	16.00%	20.00%	0	0.00%	16.67%
1994	25	20.00%	20.00%	0	0.00%	16.67%
1995	25	20.00%	20.00%	0	0.00%	16.67%
1996	25	20.00%	0.00%	0	0.00%	16.67%
1997	0	0.00%	0.00%	0	0.00%	16.67%
TOTALS	125	100.00%	100.00%	0	0.00%	100.00%

SCENARIO ERROR REPORT (COBRA v5.01)
Data As Of 15:37 03/19/1991, Report Created 14:53 09/21/1994

Department : US Army
Option Package : ALFA
Scenario File : C:\COBRA\SOURCE\TESTDATA.CBR
Std Fctrs File : C:\COBRA\SOURCE\STDFCTRS.SFF

PERSONNEL MOVEMENT:
Ft Deluxe has 12 caretakers but is not being deactivated.
Ft Deluxe*p416%60dofficers present after closing.
Ft Deluxe had 166 enlisted personnel present after closing.
Ft Deluxe had 666 civilians personnel present after closing.

OVERHEAD/RPMA:
Ft Deluxe still had 9,872 KSF of facilities after closing.

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APPENDIX C

SAMPLE ADDER REPORTS

APPENDIX C - SAMPLE ADDER REPORTS

This appendix contains a set of sample ADDER reports, generated from a group of fictional closure/realignment scenarios. All standard ADDER reports are included, except the Input Data Report (which is only a printout of the list of files makeing up the scenario).

ADDER REALIGNMENT SUMMARY (ADDER v5.01)
Report Created 15:24 09/21/1994

ADDER Data File: C:\COBRA\SOURCE\ZIP.OUT

Starting Year : 1994
Final Year : 1998
ROI Year : Immediate

NPV in 2013($K):-3,459,272
1-Time Cost($K): 1,360,583

Net Costs ($K) Constant Dollars

	1994	1995	1996	1997	1998	1999	Total	Beyond
MilCon	-137,252	-461,803	229,286	-7,417	-33,700	-21,800	-432,686	0
Person	-144,579	-162,093	-372,157	-270,084	-165,157	-166,256	-1,280,327	-166,256
Overhd	21,070	14,961	-30,625	-70,514	-133,212	-134,713	-333,033	-134,819
Moving	21,025	55,154	61,379	57,807	4,976	675	201,017	0
Missio	-5,694	-8,204	-8,952	-12,352	-13,712	-14,324	-63,238	-14,324
Other	1,332	2,600	40,714	-8,632	-13,852	-10,132	12,029	-466
TOTAL	-244,097	-559,385	-80,355	-311,193	-354,658	-346,550	-1,896,238	-315,866

	1994	1995	1996	1997	1998	1999	TOTAL
POSITIONS ELIMINATED							
Officers	114	92	391	147	0	0	744
Enlisted	726	558	2,202	1,227	0	0	4,713
Civilian	20	842	986	371	60	0	2,279
TOTAL	860	1,492	3,579	1,745	60	0	7,736
POSITIONS REALIGNED							
Officers	581	1,600	1,393	1,092	120	0	4,786
Enlisted	2,651	9,919	10,293	6,588	120	0	29,571
Students	0	40	0	1,800	0	0	1,840
Civilian	138	1,152	930	588	60	0	2,868
TOTAL	3,370	12,711	12,616	10,068	300	0	39,065

ADDER REALIGNMENT SUMMARY (ADDER v5.01) - Page 2
Report Created 15:24 09/21/1994

ADDER Data File: C:\COBRA\SOURCE\ZIP.OUT

Costs ($K) Constant Dollars

	1994	1995	1996	1997	1998	1999	Total	Beyond
MilCon	445,276	297,227	273,176	16,283	0	0	1,031,962	0
Person	3,164	18,001	31,759	33,722	33,221	33,190	153,057	33,190
Overhd	23,458	37,636	55,873	62,975	52,517	51,283	283,742	51,177
Moving	22,262	58,875	66,242	62,813	5,096	675	215,964	0
Missio	0	1,100	2,310	7,810	10,010	11,000	32,230	11,000
Other	6,120	5,220	41,180	876	479	0	53,875	0
TOTAL	500,280	418,059	470,539	184,479	101,324	96,148	1,770,830	95,367

Savings ($K) Constant Dollars

	1994	1995	1996	1997	1998	1999	Total	Beyond
MilCon	582,528	759,030	43,890	23,700	33,700	21,800	1,464,648	0
Person	147,742	180,094	403,916	303,807	198,379	199,447	1,433,384	199,447
Overhd	2,388	22,674	86,497	133,490	185,729	185,996	616,775	185,996
Moving	1,237	3,721	4,863	5,006	120	0	14,946	0
Missio	5,694	9,304	11,262	20,162	23,722	25,324	95,468	25,324
Other	4,788	2,620	466	9,508	14,332	10,132	41,846	466
TOTAL	744,377	977,443	550,894	495,672	455,982	442,699	3,667,068	411,233

ADDER NET PRESENT VALUES REPORT (ADDER v5.01)
Report Created 15:24 09/21/1994

Year	Cost($)	Adjusted Cost($)	NPV($)
1994	-244,096,833	-235,977,315	-235,977,315
1995	-559,384,652	-505,399,584	-741,376,899
1996	-80,355,245	-67,850,771	-809,227,670
1997	-311,192,953	-245,576,345	-1,054,804,015
1998	-354,657,919	-261,566,826	-1,316,370,841
1999	-346,550,268	-238,866,619	-1,555,237,459
2000	-315,865,774	-203,473,575	-1,758,711,034
2001	-315,865,774	-190,162,219	-1,948,873,253
2002	-315,865,774	-177,721,700	-2,126,594,954
2003	-315,865,774	-166,095,047	-2,292,690,001
2004	-315,865,774	-155,229,016	-2,447,919,017
2005	-315,865,774	-145,073,847	-2,592,992,863
2006	-315,865,774	-135,583,034	-2,728,575,897
2007	-315,865,774	-126,713,116	-2,855,289,014
2008	-315,865,774	-118,423,473	-2,973,712,487
2009	-315,865,774	-110,676,143	-3,084,388,630
2010	-315,865,774	-103,435,648	-3,187,824,277
2011	-315,865,774	-96,668,829	-3,284,493,107
2012	-315,865,774	-90,344,700	-3,374,837,807
2013	-315,865,774	-84,434,299	-3,459,272,107

ADDER APPROPRIATIONS DETAIL REPORT (ADDER v5.01)
Report Created 15:24 09/21/1994

ONE-TIME COSTS -----($K)-----	1994	1995	1996	1997	1998	1999	Total
CONSTRUCTION							
MILCON	368,139	246,997	199,585	13,016	0	0	827,737
Fam Housing	73,748	49,785	73,146	2,822	0	0	199,501
Land Purch	2,500	0	0	0	0	0	2,500
O&M							
CIV SALARY							
Civ RIF	252	1,899	1,462	813	0	0	4,426
Civ Retire	343	448	321	264	98	0	1,474
CIV MOVING							
Per Diem	327	2,273	2,616	1,425	238	0	6,879
POV Miles	15	10	20	31	11	0	88
Home Purch	622	3,813	4,476	3,274	436	0	12,621
HHG	1,088	1,864	2,818	2,506	810	0	9,086
Misc	41	211	254	208	30	0	744
House Hunt	285	1,345	1,614	949	210	0	4,403
PPS	4	1,297	1,642	1,057	13	0	4,013
RITA	361	2,143	2,514	1,649	259	0	6,926
FREIGHT							
Packing	188	621	909	523	7	0	2,250
Freight	5,411	9,107	11,060	15,645	791	284	42,300
Vehicles	3,581	711	513	1,735	632	284	7,458
Driving	4	130	135	629	237	107	1,242
Unemployment	67	3,022	3,527	551	0	0	7,166
OTHER							
Admin/Plan	12,791	9,594	5,421	4,066	1,295	106	33,273
Shutdown	492	4,568	4,078	2,868	45	0	12,052
New Hire	280	0	30	30	50	0	390
1-Time Move	1,014	14,456	13,010	7,178	0	0	35,658
MIL PERSONNEL							
MIL MOVING							
Per Diem	1,515	903	1,178	987	146	0	4,729
POV Miles	436	739	447	650	56	0	2,329
HHG	6,227	15,886	18,648	19,850	1,077	0	61,688
Misc	1,142	3,364	4,385	4,513	143	0	13,548
OTHER							
HAP / RSE	326	326	326	326	279	0	1,583
Environmental	3,790	2,890	1,890	0	0	0	8,570
Info Manage	889	445	445	445	0	0	2,223
1-Time Other	2,004	2,004	38,964	550	200	0	43,722
TOTAL ONE-TIME	487,885	380,851	395,437	88,564	7,064	781	1,360,583

ADDER APPROPRIATIONS DETAIL REPORT (ADDER v5.01) - Page 2
Report Created 15:24 09/21/1994

RECURRINGCOSTS -----($K)-----	1994	1995	1996	1997	1998	1999	Total	Beyond
FAM HOUSE OPS	1,696	5,089	9,606	12,483	12,514	12,514	53,902	12,514
O&M								
RPMA	0	0	11,541	11,553	11,553	11,553	46,201	11,553
BOS	5,544	15,162	21,732	28,256	23,360	23,360	117,414	23,360
Unique Operat	0	0	0	0	0	0	0	0
CHAMPUS	0	0	0	0	0	0	0	0
Caretaker	1,440	1,730	1,999	2,255	2,255	2,255	11,935	2,255
MIL PERSONNEL								
House Allow	2,221	12,633	26,419	32,064	33,073	33,190	139,601	33,190
OTHER								
Mission	0	1,100	2,310	7,810	10,010	11,000	32,230	11,000
Misc Recur	1,494	1,494	1,494	1,494	1,494	1,494	8,964	1,494
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	12,395	37,207	75,102	95,915	94,260	95,367	410,247	95,367
TOTAL COST	500,280	418,059	470,539	184,479	101,324	96,148	1,770,830	95,367

ONE-TIME SAVES -----($K)-----	1994	1995	1996	1997	1998	1999	Total
CONSTRUCTION							
MILCON	500,730	629,030	43,890	23,700	33,700	21,800	1,252,850
Fam Housing	81,798	130,000	0	0	0	0	211,798
O&M							
1-Time Move	0	0	0	0	0	0	0
MIL PERSONNEL							
Mil Moving	1,237	3,721	4,863	5,006	120	0	14,946
Elim PCS	856	592	1,959	1,318	0	0	4,726
OTHER							
Land Sales	0	0	0	0	4,200	0	4,200
Environmental	0	0	0	0	0	0	0
1-Time Other	0	0	0	0	0	0	0
TOTAL ONE-TIME	584,620	763,343	50,712	30,024	38,020	21,800	1,488,520

RECURRINGSAVES -----($K)-----	1994	1995	1996	1997	1998	1999	Total	Beyond
FAM HOUSE OPS	1,034	8,578	16,531	17,995	18,017	18,017	80,172	18,017
O&M								
RPMA	841	10,408	42,471	58,996	95,218	95,220	303,154	95,220
BOS	513	3,688	27,495	56,498	72,495	72,759	233,449	72,759
Unique Operat	0	0	0	0	0	0	0	0
Civ Salary	359	11,217	33,544	53,443	62,580	63,630	224,765	63,630
CHAMPUS	0	0	0	0	9,666	9,666	19,332	0
MIL PERSONNEL								
Off Salary	2,667	7,134	15,808	26,119	29,556	29,556	110,842	29,556
Enl Salary	6,581	17,264	37,534	65,667	77,632	77,632	282,310	77,632
House Allow	137,288	143,887	315,071	157,260	28,609	28,627	810,742	28,627
OTHER								
Procurement	4,788	2,620	466	9,508	466	466	18,314	466
Mission	5,694	9,304	11,262	20,162	23,722	25,324	95,468	25,324
Misc Recur	0	0	0	0	0	0	0	0
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	159,756	214,100	500,182	465,648	417,962	420,899	2,178,548	411,233
TOTAL SAVINGS	744,377	977,443	550,894	495,672	455,982	442,699	3,667,068	411,233

ADDER APPROPRIATIONS DETAIL REPORT (ADDER v5.01) - Page 3
Report Created 15:24 09/21/1994

ONE-TIME NET -----($K)-----	1994	1995	1996	1997	1998	1999	Total
CONSTRUCTION							
MILCON	-132,591	-382,033	155,695	-10,683	-33,700	-21,800	-425,112
Fam Housing	-8,050	-80,215	73,146	2,822	0	0	-12,297
O&M							
Civ Retir/RIF	595	2,346	1,782	1,078	98	0	5,900
Civ Moving	11,928	23,526	28,573	29,634	3,675	675	98,011
Other	14,645	31,639	26,067	14,692	1,390	106	88,540
MIL PERSONNEL							
Mil Moving	7,227	16,579	17,837	19,677	1,301	0	62,622
OTHER							
HAP / RSE	326	326	326	326	279	0	1,583
Environmental	3,790	2,890	1,890	0	0	0	8,570
Info Manage	889	445	445	445	0	0	2,223
1-Time Other	2,004	2,004	38,964	550	200	0	43,722
Land	2,500	0	0	0	-4,200	0	-1,700
TOTAL ONE-TIME	-96,736	-382,492	344,725	58,540	-30,956	-21,018	-127,937

RECURRING NET -----($K)-----	1994	1995	1996	1997	1998	1999	Total	Beyond
FAM HOUSE OPS	662	-3,489	-6,925	-5,512	-5,503	-5,503	-26,270	-5,503
O&M								
RPMA	-841	-10,408	-30,929	-47,443	-83,664	-83,667	-256,953	-83,667
BOS	5,031	11,474	-5,764	-28,242	-49,134	-49,399	-116,035	-49,399
Unique Operat	0	0	0	0	0	0	0	0
Caretaker	1,440	1,730	1,999	2,255	2,255	2,255	11,935	2,255
Civ Salary	-350	-11,217	-33,544	-53,443	-62,580	-63,630	-224,765	-63,630
CHAMPUS	0	0	0	0	-9,666	-9,666	-19,332	0
MIL PERSONNEL								
Mil Salary	-9,248	-24,398	-53,342	-91,786	-107,189	-107,189	-393,151	-107,189
House Allow	-135,067	-131,254	-288,652	-125,196	4,464	4,563	-671,142	4,563
OTHER								
Procurement	-4,788	-2,620	-466	-9,508	-466	-466	-18,314	-466
Mission	-5,694	-8,204	-8,952	-12,352	-13,712	-14,324	-63,238	-14,324
Misc Recur	1,494	1,494	1,494	1,494	1,494	1,494	8,964	1,494
Unique Other	0	0	0	0	0	0	0	0
TOTAL RECUR	-147,361	-176,893	-425,080	-369,733	-323,702	-325,532	-1,768,301	-315,866
TOTAL NET COST	-244,097	-559,385	-80,355	-311,193	-354,658	-346,550	-1,896,238	-315,866

ADDER ONE-TIME COST REPORT (ADDER v5.01)
Report Created 15:24 09/21/1994

(All values in Dollars)

Category	Cost	Sub-Total
Construction		
Military Construction	827,737,571	
Family Housing Construction	199,501,008	
Information Management Account	2,223,502	
Land Purchases	2,500,000	
Total - Construction		1,031,962,081
Personnel		
Civilian RIF	4,425,823	
Civilian Early Retirement	1,473,932	
Civilian New Hires	390,000	
Unemployment	7,166,560	
Total - Personnel		13,456,315
Overhead		
Administrative Support	33,273,077	
Mothball / Shutdown	12,052,120	
Total - Overhead		45,325,197
Moving		
Civilian Moving	40,748,968	
Civilian PPS	4,013,076	
Military Moving	82,294,116	
Freight	53,249,488	
One-Time Moving Costs	35,658,000	
Total - Moving		215,963,648
Other		
HAP / RSE	1,583,554	
Environmental Mitigation Costs	8,570,000	
One-Time Unique Costs	43,722,000	
Total - Other		53,875,554
Total One-Time Costs		1,360,582,795
One-Time Savings		
Military Construction Cost Avoidances	1,252,850,000	
Family Housing Cost Avoidances	211,798,000	
Military Moving	14,946,244	
Eliminated Military PCS	4,725,738	
Land Sales	4,200,000	
One-Time Moving Savings	0	
Environmental Mitigation Savings	0	
One-Time Unique Savings	0	
Total One-Time Savings		1,488,519,982
Total Net One-Time Costs		-127,937,187

ADDER ERROR REPORT (ADDER v5.01)
Report Created 15:24 09/21/1994

ADDER Data File: C:\COBRA\SOURCE\ZIP.OUT

COBRA Scenario File(s) used more than once:
C:\COBRA\SOURCE\TESTDATA.CBR

ADDER ECONOMIC IMPACT REPORT (ADDER v5.01) - Page 2
Report Created 09:08 09/30/1994

Installation: Camp Rocky

State: OH Service: ARMY Year: 1994

Current Base Pers- Off: 200, Enl: 200, Civ: 200, Stu: 100

Action: REALIGNED

	1994	1995	1996	1997	1998	1999	2000	2001
Mil Reloc(OUT)	0	0	50	50	100	0	0	0
Mil Dis (OUT)	0	0	0	0	0	0	0	0
Civ Reloc(OUT)	0	0	20	20	40	0	0	0
Civ Dis (OUT)	0	0	0	0	0	0	0	0
Stu Reloc(OUT)	0	0	10	20	20	0	0	0
Mil Reloc (IN)	50	50	50	50	0	0	0	0
Civ Reloc (IN)	20	20	20	20	0	0	0	0
Stu Reloc (IN)	5	10	15	20	0	0	0	0

APPENDIX D

FILES DIRECTORY

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APPENDIX D - FILES DIRECTORY

This Appendix lists the File Name and the Title/Description of files provided with COBRA V5.01 (Help files and Reports files). They are listed here to assist the user who may not recognize the File Name as it appears on the COBRA screen or window. This information is also available to the user through Context-Sensitive Help (see Section 3.3.3). Should the user need similar information on user-defined files (Data files and Standard Factors files) it is available through the on-screen Files Directory (see Section 3.4.3)

HELP FILES

File Name	Title/Description
BACKGRND.HLP	Background, Capabilities, & Operations
CONTENTS.HLP	List of Help & Reports files
DATABASE.HLP	Description of DataBase Menu options
FILE.HLP	Description of File Menu options
HELP.HLP	Description of Help Menu options
INPUT.HLP	Description of Input Data Menu options
OUTPUT.HLP	Description of Output Reports (see list below)
REPORTS.HLP	Description of Reports Menu options
SCREEN1.HLP	Description of General Scenario Data Entry
SCREEN2.HLP	Description of Distance Table Data Entry
SCREEN3.HLP	Description of Movement Table Data Entry
SCREEN4.HLP	Description of Static Base Data Entry
SCREEN5.HLP	Description of Dynamic Base Data Entry
SCREEN6.HLP	Description of Personnel Base Data Entry
SCREEN7.HLP	Description of Military Construction Data Entry
SCREEN8.HLP	Description of Unique Activity Data Entry
SCREEN9.HLP	Description of Explanatory Notes Data Entry
STDFCTR1.HLP	Description of Personnel Standard Factors
STDFCTR2.HLP	Description of Facility Standard Factors
STDFCTR3.HLP	Description of Transportation Standard Factors
STDFCTR4.HLP	Description of Construction Standard Factors
WINDOWS.HLP	Description of Windows Menu options

COBRA REPORT FILES

File Name	Title/Description
1TIMCOST.RPT	One-Time Costs Report
APPDET.RPT	Appropriations Detail Report
COBSUM.RPT	Realignment Summary Report
DELTAS.RPT	BOS, Land, SF, and RPMA Deltas Report
ERROR.RPT	Scenario Error Report
INPUTDAT.RPT	Input Data Report
MILCONAS.RPT	Military Construction Assets Report
NPV.RPT	Net Present Values Report
PERSSUM.RPT	Personnel Summary Report
PERSIMP.RPT	Personnel Impact Report
PERSPERC.RPT	Personnel Yearly Percentages Report
RPMABOS.RPT	RPMA/BOS Change Report

ADDER REPORT FILES

File Name	Title/Description
1TIMCOST.ART	One-Time Costs Report
ADRSUM.ART	Realignment Summary Report
APPDET.ART	Appropriations Detail Report
EIR.ART	Economic Impact Report
ERROR.ART	Scenario Error Report
INPUTDAT.ART	Input Data Report
NPV.ART	Net Present Values Report

EXTENSIONS USED BY COBRA/ADDER

Extension	Type of File
*.ART	ADDER Report
*.BAK	COBRA Scenario/Standard Factors Backup File
*.CBR	COBRA Scenario Data File
*.CSH	COBRA/ADDER Context Sensitive Help File
*.DBS	COBRA Base Database
*.DDS	COBRA Distance Database
*.EIR	Economic Impact Database Report
*.GRP	COBRA/ADDER Group File
*.HLP	COBRA/ADDER Help Text File
*.OUT	COBRA Output/ADDER Input File
*.RPT	COBRA Report
*.SFF	COBRA Standard Factors File

Document Separator

C O B R A

Cost Of Base Realignment Actions

USER'S TRAINING

Presented by: R&K RICHARDSON and KIRMSE, Inc.
ENGINEERING • PLANNING • SYSTEMS

COBRA INSTRUCTION
OUTLINE

- INTRODUCTION to COURSE
  - KEY PEOPLE
  - LOGISTICS/LOCATIONS
  - OBJECTIVES
  - SCHEDULE

- INTRODUCTION to COBRA
  - THE MANUAL
  - BACKGROUND
  - CAPABILITIES AND OPERATIONS
  - INSTALLATION of COBRA V5.01

- OPERATING COBRA
  - INITIATING COBRA
  - THE MAIN MENU
  - HELP
    - Viewing Help
    - Printing Help
    - Context-Sensitive Help
    - Files in Use
    - On-Screen Calculator
    - On-Screen Calendar
    - Changing COBRA Set-Up
  - FILE
    - Loading Saved Data
    - Saving Current Data
    - File Directory
    - Clearing the Data Set
    - Deleting Saved Data
    - Loading Standard Factors
    - Saving Standard Factors
    - DOS Shell/Change Directory
    - Exiting COBRA
  - DATABASE
    - Loading Base(s)
    - Saving Base(s)
    - Loading/Saving Distances
  - INPUT DATA
  - REPORTS
  - WINDOWS
  - QUIT
  - WARNING/CONFIRMATION BOXES

DATA INPUT

- DATA ENTRY SCREEN 1 - GENERAL SCENARIO
- DATA ENTRY SCREEN 2 - DISTANCE TABLE
- DATA ENTRY SCREEN 3 - MOVEMENT TABLE
- DATE ENTRY SCREEN 4 - BASE INFORMATION (STATIC)
- DATA ENTRY SCREEN 5 - BASE INFORMATION (DYNAMIC)
- DATA ENTRY SCREEN 6 - BASE INFORMATION (PERSONNEL)
- DATA ENTRY SCREEN 7 - BASE INFORMATION (CONSTRUCTION)
- DATA ENTRY SCREEN 8 - BASE INFORMATION (UNIQUE ACTIVITIES)
- DATA ENTRY SCREEN 9 - EXPLANATORY NOTES
- STANDARD FACTORS TABLE 1 - PERSONNEL
- STANDARD FACTORS TABLE 2 - FACILITIES
- STANDARD FACTORS TABLE 3 - TRANSPORTATION
- STANDARD FACTORS TABLE 4 - CONSTRUCTION

REPORTS

- Generating Reports (Running COBRA)
- Viewing a Report
- Printing a Report
- Deleting a Report
- Viewing or Printing a Group of Reports
- Saving a Group of Reports
- Deleting a Group of Reports

REPORT OUTPUT

- REALIGNMENT SUMMARY REPORT
- NET PRESENT VALUES REPORT
- APPROPRIATIONS DETAIL REPORT
- ONE-TIME COST REPORT
- RPMA/BOS CHANGE REPORT
- BOS, LAND, SF, AND RPMA DELTAS REPORT
- MILITARY CONSTRUCTION ASSETS REPORT
- PERSONNEL IMPACT REPORT
- PERSONNEL SUMMARY REPORT
- PERSONNEL YEARLY PERCENTAGES REPORT
- INPUT DATA REPORT
- SCENARIO ERROR REPORT

PRACTICAL EXERCISE

- MODIFY EXISTING SCENARIO
- CREATE A SCENARIO

COURSE CRITIQUE

COBRA INSTRUCTION OBJECTIVES

- UNDERSTAND HOW TO OPERATE COBRA
- UNDERSTAND DATA INPUT TO COBRA
- UNDERSTAND REPORTS OUTPUT BY COBRA

COBRA CHARACTERISTICS

- CALCULATES COSTS & SAVINGS OF USER DEFINED SCENARIO
- A COMPARATIVE TOOL, NOT AN OPTIMIZER
- USES READILY AVAILABLE DATA
- CALCULATES COSTS & SAVINGS OVER TWENTY YEARS (OR MORE)
- USES BASE-YEAR DOLLARS, EXCEPT IN NPV AND APPROPRIATION REPORTS

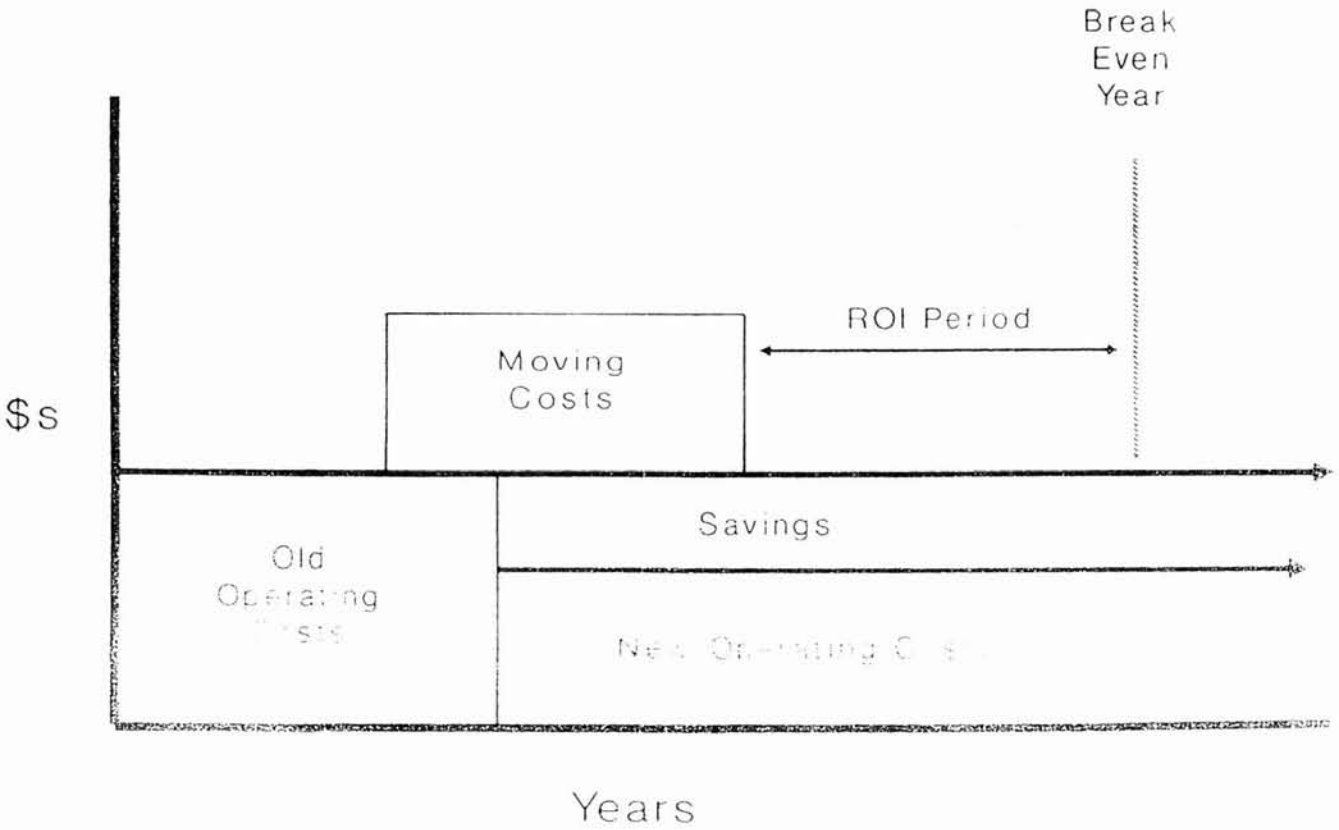
COBRA CALCULATIONS

- **COSTS OF OPERATING AT CURRENT LOCATION(S)**
  - PERSONNEL COSTS (SALARIES, VHA/BAQ)
  - OVERHEAD (BOS, RPMA, ADMIN SPT)

- **COSTS OF MOVING TO NEW LOCATION(S)**
  - CONSTRUCTION (NEW, RENOVATION)
  - PCS COSTS (TRAVEL, HAP/RSE)
  - TRANSPORTATION (FRIGHT, VEHICLES, SPECIAL EQUIPMENT)
  - PERSONNEL (SEVERANCE, UNEMPLOYMENT, HIRING)

- **COSTS OF OPERATING AT NEW LOCATION(S)**
  - PERSONNEL COSTS (SALARIES, VHA/BAQ)
  - OVERHEAD (BOS, RPMA, ADMIN SPT)

COBRA CALCULATIONS



COBRA ASSUMPTIONS

- ALL ACTIONS ARE COMPLETE IN SIX YEARS
- NO COSTS OR SAVINGS FROM FORCE STRUCTURE CHANGES
- CONSTRUCTION SUPPORTS NEW BRAC ACTIVITY ONLY

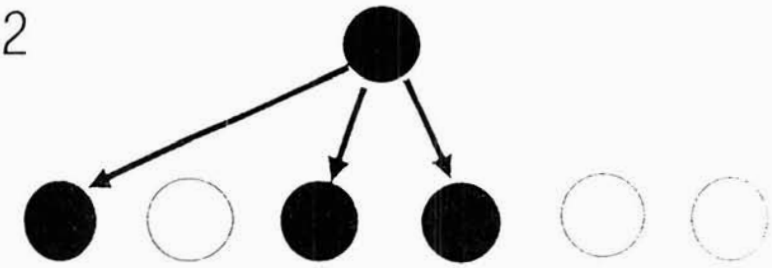
COBRA DEVELOPMENT

- 1988 LOTUS 1-2-3 COBRA (USAF)
  - STANDARDIZED
  - CUMBERSOME
- 1991 COBRA V1.42 (R&K)
  - COMPUTER MODEL
  - LIMITED SCENARIOS
  - USER "INDIFFERENT"
- 1993 COBRA V4.00 (R&K)
  - EXPANDED SCENARIOS
  - BETTER ALGORITHMS
  - USER FRIENDLY
- 1994 COBRA V5.01 (R&K)
  - BETTER AND FASTER ALGORITHMS
  - OUTPUT REPORTS SIMPLIFIED
  - BETTER ERROR TRAPPING AND DISPLAY
  - ADDER COMPANION MODULE TO COBRA

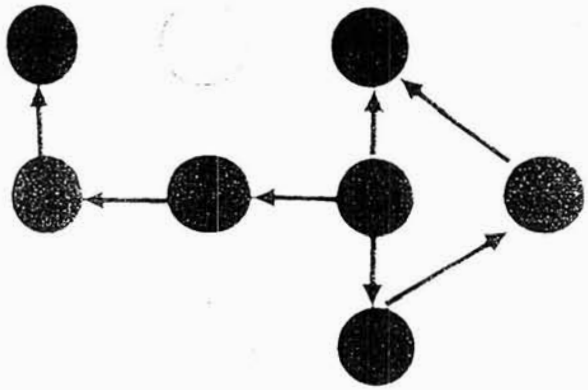
C O B R A

SCENARIO CAPABILITIES

COBRA V1.42



COBRA V5.01



C O B R A

DATA INPUTS

DATA ENTRY SCREENS

- General Scenario
- Distances
- Movements
- Base Static
- Base Dynamic
- Base Personnel
- Base MILCON
- Base Unique
- End Notes

STANDARD FACTORS

- Personnel
- Facility
- Transportation
- Construction

C O B R A

REPORT OUTPUTS

- Realignment Summary
- Net Present Value
- Appropriations Summary
- Appropriations Detail
- Scenario Error
- Military Construction
- Personnel Realignments
- Personnel Movement

- App Detail, Fixed
- App Detail, Steady
- One-Time Cost
- Mission Cost
- Moving Cost
- Overhead Cost
- Personnel Cost
- Other Cost

- RPMA/BOS Change
- BOS/Land/SF/RPMA Deltas
- Personnel Percentages
- Input Data

Document Separator

Installation	Service	Action	EID Mil Relocated	COBRA Mil Realigned	EID M Disestabl
Bergstrom AFB	AF	Close	-	-	
Brooks AFB	AF	Close	-1654	-1717	
Grand Forks	AF	Realign	-1506	0	
Kelly AFB	AF	Realign	-	-	
Kirtland AFB	AF	Realign	-3633	-2981	
Malmstrom AFB	AF	Realign	-687	-719	
Minot AFB	AF	Add	-	-	
Moffett Field AGS	AF	Close	-88	-82	
North Highlands AGS	AF	Close	0	-3	
Ontario AGS	AF	Close	0	-3	
Reese AFB	AF	Close	-569	-519	
Robins AFB	AF	Realign	-8	0	
Roslyn AGS	AF	Close	-8	-5	
Springfield-Beckley AGS	AF	Close	0	-56	
Tinker AFB	AF	Realign	-	-	

Please note that
(1) CIV or civilian d
(2) where (–) ap
match.

Question: What ~~why~~ are the di
and the COBRA
installations?

Document Separator

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release February 7, 1995

PRESIDENT NAMES MEMBERS TO THE DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION

The President today announced his intention to nominate seven Members to the Defense Base Closure and Realignment Commission. The members are as follows: Al Cornella, Rebecca G. Cox, General J.B. Davis, S. Lee Kling, Benjamin F. Montoya, Wendi L. Steele and Michael P. W. Stone.

The Defense Base Closure and Realignment Commission is responsible for providing a fair process that will result in timely closure or realignment of U.S. military institutions that are no longer a high priority or need to be changed. Specifically, it reviews the recommendations of the Secretary of Defense and transmits a report of its findings and conclusions to the President.

Al Cornella is the President of Cornella Refrigeration, Inc. in Rapid City, South Dakota. He is a U.S. Navy Veteran with service in Vietnam and has been active in military issues for more than a decade. Mr. Cornella has served on a number of boards and commissions in South Dakota including the Rapid City Chamber of Commerce serving as Chairman of the Board of Directors from 1991 - 1992 and as Chairman of the Military Affairs Committee. In 1992, he was appointed to serve on the State Commission on Hazardous Waste Disposal. Mr. Cornella currently serves on the boards of the South Dakota Air and Space Foundation, and the Rapid City Economic Development Loan Fund.

Rebecca G. Cox is currently a Vice President of Continental Airlines, Inc. Prior to working for Continental, she served as Assistant to the President and Director of the Office of Public Liaison for the Reagan Administration and was appointed to serve as Chairman of the Interagency Committee for Women's Business Enterprise. Ms. Cox had previously served at the Department of Transportation as Counselor to Secretary Elizabeth Dole and as Deputy Assistant Secretary for Government Affairs. Previously, Ms. Cox worked in the U.S. Senate as staff assistant, then legislative assistant and finally, as Chief of Staff to U.S. Senator Ted Stevens. In 1976, she received a B.A. degree from Depauw University in Greencastle, Indiana and a Juris Doctorate degree from the Columbus School of Law at Catholic University in Washington, D.C. in 1981. Ms. Cox resides in Newport Beach, California with her husband Chris and their two children.

more

General J.B. Davis concluded a 35 year career with the United States Air Force as a combat fighter pilot, commander, strategic planner and programmer in August of 1993. He has served as a commander of a combat fighter wing, of the U.S. Air Force's military Personnel Center, Pacific Air Forces, and United States Forces Japan. In addition, he served as the Director and Programmer for the U.S. Air Force personnel and training. He was the Deputy Chief of Staff for Operations and Intelligence for the Pacific Air Forces, and served his last two years on active duty as the Chief of Staff at the Supreme Headquarters Allied Powers Europe (NATO). During his career he has had extensive experience in operations, intelligence, human resource management, and political/military and international affairs. General Davis has a B.S. degree in Engineering from the U.S. Naval Academy, a Masters degree in Public Administration from Auburn University at Montgomery, and has attended multiple professional schools.

S. Lee Kling serves as Chairman of the Board of Kling Rechter & Company, a merchant banking company formed in 1991. He also serves as a Special Advisor and Managing Director of Willis Corroon Corp. of Missouri. Previously, Mr. Kling was in the insurance brokerage business. He founded his own insurance firm in 1965, which was subsequently sold. He remained with the company as Chairman and CEO until 1974. From 1974 to 1977, Mr. Kling served as Finance Chairman of the Democratic National Committee and as a member of its Executive Committee. Previously, he served as United States Economic Advisor representing the private sector during peace negotiations between Israel and Egypt. He received the Distinguished Business Alumni Award from Washington University in 1989 and was the Missouri Building & Construction Trade Counsel "Construction Man of the Year" in 1990. Mr. Kling and his wife, Roszlyn Hauss, have four children. Their residence is at Grayling Farms in Villa Ridge, Missouri. He received a B.S.B.A. degree from Washington University in St. Louis.

Benjamin F. Montoya is currently the President and Chief Executive Officer of Public Service Company of New Mexico, an investor-owned public utility serving gas, electricity, and water throughout the State. Mr. Montoya enjoyed a distinguished and decorated U.S. Navy career, spanning 31 years, rising to the rank of Rear Admiral. He served as Commanding Officer of the Navy Public Works Center in San Diego, California; Commander of the Western Division Naval Facilities Engineering Command in San Bruno, California; and Director of the Sore Activities Division in the Office of Deputy Chief of Naval Operations in Washington, D.C. From 1987 - 1989, he assumed the duty as Commander of the Naval Facilities Engineering Command and Chief of Civil Engineers. His awards include the Legion of Merit, Bronze Star Medal with Combat "V," Meritorious Service Medal, Navy Commendation Medal and the Navy Achievement Medal. Mr. Montoya is a graduate of the U.S. Naval Academy. He also holds a B.S degree in civil engineering from Rensselaer Polytechnic Institute, and a Master of Science degree in sanitary engineering from Georgia Institute of Technology.

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Wendi L. Steele served as the Senate liaison for the Defense Base Closure and Realignment Commission in 1991. She began her career in the Reagan Administration, working in the legislative affairs offices of both the Office of Management and Budget and the White House. Following her service in Washington, Mrs. Steele was a congressional and economic analyst for the Defense and Space Group of the Boeing Company in Seattle, Washington. She returned to D.C. during the Bush Administration and worked for the assistant secretary for legislative and intergovernmental affairs of the U.S. Department of Commerce. In 1993 she staffed defense, veterans' affairs, foreign policy and trade issues for Senator Don Nickles (R-OK). Mrs. Steele resides with her husband Nick in Houston, Texas, where she is a writer.

Michael P. W. Stone resides in San Francisco, California and has had senior management responsibilities over the past 40 years in both the private and public sectors. Mr. Stone began his government service in 1982 as mission director in Cairo, Egypt, for the U.S. Agency for International Development. In 1984, he became director of the Office of Caribbean Basin Initiative Affairs at USAID in Washington. From 1986 - 1988, he served as assistant Secretary of the Army for Financial Management, and from 1988 - 1989 as Under Secretary of the Army. While he was Under Secretary, Mr. Stone served as Army Acquisition Executive and performed the duties of Under Secretary of Defense for Acquisition for several months in 1989. From 1989 - 1993, Mr. Stone served the Secretary of the Army. He also served as chairman of the board of directors of the Panama Canal Commission and in 1991 - 1992 as executive agent for the U.S. civil reconstruction program in Kuwait. Mr. Stone is a graduate of Yale University. He is currently director of BEI Electronics, Inc. in San Francisco, a publicly listed technology company.

Former U.S. Senator Alan Dixon was appointed chairman of the Defense Base Closure and Realignment Commission on October 11, 1994.

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1700 NORTH MOORE STREET SUITE 1425
ARLINGTON VA 22209
703-696-0504

ALAN J. DIXON

Biography

Alan J. Dixon was confirmed by the U.S. Senate October 7, 1994, as chairman of the Defense Base Closure and Realignment Commission., adding another chapter to a distinguished 45-year career in public service.

Dixon, 67, is a senior partner in the corporate and business department of the St. Louis-based law firm of Bryan Cave, which he joined in 1993 after representing Illinois in the U.S. Senate for 12 years. Until his defeat in the Democratic primary election in 1992, Dixon had enjoyed an unbroken string of 29 election victories dating from 1949 when, while attending law school, he was elected police magistrate in his hometown of Belleville, Illinois.

In 1988 and again in 1990, Democratic Senators elected him unanimously to serve as chief deputy whip, their number three leadership post.

During his Senate career, Dixon held important positions on the committees on Armed Services, Small Business, and Banking , Housing and Urban Affairs.

On the Armed Services Committee, he chaired the Subcommittee on Readiness, Preparedness and Sustainability, which oversees 58 per cent of the U.S. defense budget. The subcommittee was one of those responsible for making sure U.S. manpower and weapons systems employed in the Persian Gulf War were adequate for the task. In 1990, he co-authored the legislation that created the commission he now chairs and the process under which the federal government operates to close and realign military installations in the United States.

Dixon began a 20-year career in the Illinois General Assembly with election to the House of Representatives in 1950. As a legislator, he wrote or co-sponsored legislation that produced or nurtured the state's modern criminal code, the modern judicial article to the Illinois Constitution, the state's community college system and its open meetings law.

He served as Illinois Treasurer from 1971-77, during which time his policies earned hundreds of millions of dollars for Illinois taxpayers and he established investment incentives for Illinois banks to encourage them to invest locally.

He was elected Illinois Secretary of State by a margin of 1.3 million votes in 1976. In 1978, he was re-elected by 1.5 million votes, becoming the first candidate in Illinois history to carry all 102 counties in the state, including all 30 townships in suburban Cook County and all 50 wards in the City of Chicago.

He was the first Democratic statewide candidate to disclose the sources and amounts of all campaign contributions, and since 1970, his personal financial assets and liabilities were a matter of public record.

Dixon is a graduate of the University of Illinois and holds a law degree from Washington University in St. Louis. He and his wife, Jody, have three children and seven grandchildren.

ALAN J. DIXON: FACT SHEET

HOME ADDRESS:	7535 Claymont Court, Belleville, Illinois 62223
BUSINESS ADDRESS:	1700 North Moore Street, Suite 1425, Arlington, Virginia 22209
PROFESSION:	Attorney
PHONE:	Office: 703/696-0504
BIRTH:	July 7, 1927; Belleville, Illinois
PARENTS' NAMES:	William G. Dixon and Elsa Tebbenhoff (both deceased)
MARRIED TO:	Joan (Jody) Fox Dixon; January 17, 1954
CHILDREN:	Stephanie, Jeffrey, Elizabeth
SCHOOLS ATTENDED:	Belleville Township High School, graduated 1945; University of Illinois, graduated 1949; Washington (St. Louis) University Law School, graduated 1949
CHURCH:	Presbyterian
COMMITTEES & PUBLIC OFFICES:	United States Senate, 1981 to 1993 Democratic Chief Deputy Whip, 1988-93 Member: Committee on Armed Services (Chairman, Subcommittee on Readiness, Sustainability and Support) Member: Committee on Banking, Housing and Urban Affairs (Chairman, Subcommittee on Consumer and Regulatory Affairs) Member, Committee on Small Business (Chairman, Subcommittee on Government Contracting and Paperwork Reduction) Member, Committee on Agriculture, Nutrition and Forestry Secretary-Treasurer, Illinois Congressional Delegation, 1981-93 Chairman, Institute for Illinois Co-Chairman, Senate Anti-Terrorism Caucus Co-Chairman, Union of Councils for Soviet Jews Member, Congressional Call to Conscience Member, Northeast-Midwest Senate Coalition Member, Senate International Narcotics Control Caucus Founder/Co-Chairman, Senate Corn Caucus

Alan J. Dixon
Fact sheet continued

COMMITTEES & PUBLIC OFFICES:	Illinois Secretary of State, 1977 to 1981 Illinois Treasurer, 1971 to 1977 Illinois State Senate, 1963 to 1971 Illinois State Representative, 1951 to 1963 Police Magistrate, Belleville, Illinois, 1949
BOARD OF DIRECTORS MEMBERSHIPS:	Mid-Citco, Inc. (Mid-City National Bank, Chicago) National Futures Association, Chicago St. Louis National Stockyards, National City, Illinois FGI Wireless, Ltd., Quincy, Illinois Doctors Hospital Hyde Park, Chicago
ADVISORY BOARD MEMBERSHIPS:	Mark Twain Bank, St. Louis (Chairman, Illinois Advisory Board)
TRUSTEE MEMBERSHIPS:	Hotel Employees and Restaurant Employees International Union Welfare Pension Fund
MILITARY:	U.S. Navy, 1945 to 1946

Al Cornella is the President of Cornella Refrigeration Inc., a Rapid City, South Dakota firm specializing in commercial and industrial refrigeration. He is U.S. Navy Veteran with service in Vietnam and has been active in military issues for over a decade. He has served on a number of boards and commissions in South Dakota including the Rapid City Chamber of Commerce. During his tenure with the Chamber, he served as Chairman of the Board of Directors from 1991 - 1992 and as Chairman of the Military Affairs Committee. In 1992, Mr. Cornella was appointed by former South Dakota Governor George Mickelson to serve on the State Commission on Hazardous Waste Disposal. Mr. Cornella currently serves on the boards of the South Dakota Air and Space Foundation and the Rapid City Economic Development Loan Fund.

REBECCA G. COX

Rebecca G. Cox is currently a Vice President of Continental Airlines, Inc. She joined Continental in January, 1989. In 1993, she served as a Member of the Defense Base Closure & Realignment Commission.

Before joining Continental, Rebecca served as Assistant to the President and Director of the Office of Public Liaison, President Reagan's primary outreach effort to the private sector. She was also appointed by the President to serve as Chairman of the Interagency Committee for Women's Business Enterprise.

Prior to her White House appointment in September, 1987, Ms. Cox had served as Assistant Secretary for Governmental Affairs at the Department of Transportation since July of 1985. As Assistant Secretary, she was responsible for coordinating legislative strategies and non-legislative relationships between the Department and Congress; as well as ensuring a continuing Departmental program for effective communication and policy development with other federal agencies, state and local governments and national organizations.

Ms. Cox had previously served at the Department of Transportation as Counselor to Secretary Elizabeth Dole and as Deputy Assistant Secretary for Government Affairs.

Before coming to the Department of Transportation, Ms. Cox worked in the U.S. Senate first as staff assistant, then legislative assistant and, finally, as Chief of Staff to U.S. Senator Ted Stevens. As Chief of Staff, she was responsible for managing the Senator's Alaska staff, the leadership duties of the Office of the Majority Leader and the oversight of his Subcommittee assignments including those involving the Commerce, Appropriations, and Governmental Affairs Committees.

In 1976, she received a B.A. degree from Depauw University in Greencastle, Indiana and a Juris Doctorate degree from the Columbus School of Law, Catholic University, Washington, D.C. in 1981.

Ms. Cox resides in Newport Beach, California with her husband Chris and their two children.

S. LEE KLING
GRAYLING FARMS
5751 ROBERTSVILLE ROAD
VILLA RIDGE, MISSOURI 63089
Home 314-451-6911
Business 314-963-2501

S. Lee Kling serves as Chairman of the Board of Kling Rechter & Company, a merchant banking company. The company was formed in 1991. Additionally, he serves as a Special Advisor and Managing Director of Willis Corroon Corp. of Missouri.

Mr. Kling served as Chairman of the Board of Landmark Bancshares Corporation, a St. Louis based bank holding company located in Missouri and Illinois, from 1975 through December 1991 when the company merged with Magna Group, Inc. He served additionally as the company's Chief Executive Officer from 1974 through October 1990, except for the year 1978 when he served as Assistant Special Counselor on Inflation for the White House, and in that capacity as Deputy for Ambassador Robert S. Strauss.

From 1953 until 1974, Mr. Kling was in the insurance brokerage business. He founded his own insurance firm in 1965, which was sold in 1969 to a publicly traded manufacturing company, Weil McClain Co., Inc. He remained with the company as Chairman and CEO of the insurance division until 1974, when the company was sold to Reed Stenhouse of Canada. He then continued on a part-time basis for a number of years.

From 1974 to 1977, Mr. Kling served as Finance Chairman of the Democratic National Committee and a member of its Executive Committee. In 1976, he was Treasurer of the Democratic National Convention. He founded and Chaired for two years the Democratic Congressional House and Senate Council. He was Co-Chairman in 1977 of the Democratic Congressional Dinner, and in 1982 was the recipient of the Democratic National Committee Distinguished Service Award. He served as National Treasurer of the Carter-Mondale Election Committee, and in 1987-88 Mr. Kling served as National Treasurer of the Gephardt for President Committee.

Mr. Kling was Co-Chairman of the Citizens Committee for the Ratification of the Panama Canal Treaties. In 1979 he served as United States Economic Advisor representing the private sector during the peace negotiations between Israel and Egypt. In 1982-83 he was Co-Chairman of the Coalition for Enactment of the Caribbean Basin Initiative legislation. Mr. Kling serves on the boards of a number of public and private corporations, civic and charitable organizations.

He received the Distinguished Business Alumni Award from Washington University in 1989 and was the Missouri Building & Construction Trade Counsel "Construction Man of the Year" in 1990.

Mr. Kling and his wife, Rosalyn Hauss, have four children. Their residence is a Grayling Farms in Villa Ridge, which is just west of St. Louis, Missouri. He attended New York Military Academy, Cornwall-on-Hudson, New York and received his B.S.B.A. degree from Washington University in St. Louis. From 1950 to 1952, he served in the Army as a 1st Lieutenant and aide-de-camp to General Guy O. Kurtz. Mr. Kling was born in St. Louis, Missouri on December 22, 1928.

General James B. Davis
United States Air Force Retired

In August of 1993, General J.B. Davis concluded a thirty-five year career with the United States Air Force as a combat fighter pilot, commander and strategic planner and programmer. He has served as a commander of a combat fighter wing, of the US. Air Force's Military Personnel Center, Pacific Air Forces, and United States Forces Japan. On the staff side, he served as the Director and Programmer of the US Air Force's personnel and training, Deputy Chief of Staff for Operations and Intelligence Pacific Air Forces, and served his last two years on active duty as the Chief of Staff, Supreme Headquarters Allied Powers Europe (NATO).

During his career he has had extensive experience in operations, intelligence, human resource management, and political/military and international affairs. He has commanded a nuclear capable organization of about six thousand personnel and a joint service organization of about sixty thousand personnel and several sizes in between.

In the 1990s, he was deeply involved in the successful multimillion dollar negotiations for support of US Forces in Japan and the Japanese financial support of US Forces in Desert Storm. In NATO, he was the chief negotiator with the North Atlantic Council and the United Nations for NATO's participation in the Yugoslavian conflict.

General Davis has lived overseas for more than ten years almost evenly split between the Pacific and Europe. Because of his official duties, he has traveled extensively to all the ASEAN and NATO countries and many of the Central and Eastern European countries to include Hungary and Albania, meeting with Ministers of State and Defense, Prime Ministers and Presidents.

General Davis has a BS degree in Engineering from the US Naval Academy, a Masters degree in Public Administration from Auburn University at Montgomery, and has attended multiple professional schools.

Rear Admiral Benjamin F. Montoya

REAR ADMIRAL BENJAMIN F. MONTOYA
CIVIL ENGINEER CORPS, U.S. NAVY

Rear Admiral Benjamin F. Montoya, CEC, USN, assumed duty as Commander, Naval Facilities Engineering Command, and Chief of Civil Engineers during change of command ceremonies on August 14, 1987. He moved into his new assignment from duty as the Director, Shore Activities Division, Office of Deputy Chief of Naval Operations (Logistics).

Rear Admiral Montoya was graduated from the U.S. Naval Academy and commissioned an Ensign in the Civil Engineer Corps, U.S. Navy, in 1958. His first duty was as shops engineer at Naval Air Station, Miramar, Calif. Rear Admiral Montoya then attended Rensselaer Polytechnic Institute in Troy, N.Y., where he received a bachelor of science degree in civil engineering in 1960.

Following graduation from Rensselaer, Rear Admiral Montoya spent the next seven years in California. He was first assigned to the Naval Shipyard, Long Beach, Calif., as assistant resident officer in charge of construction. From there, he was assigned three tours in Port Hueneme, first to the public works department as shops engineer and ultimately as public works officer, then to Naval Mobile Construction Battalion THREE, and finally to the 31st Naval Construction Regiment, as chief staff officer.

Rear Admiral Montoya spent the next year at the Georgia Institute of Technology in Atlanta, Ga., where he received a master's degree in sanitary engineering in 1968.

Duty as public works officer, Naval Station, San Juan, Puerto Rico, followed. After two years on the island, he returned to the West Coast to serve as environmental officer at the Naval Facilities Engineering Command, Western Division, San Bruno, Calif.

In 1974, Rear Admiral Montoya moved to the East Coast to serve as Director, Environmental Quality Division, Naval Facilities Engineering Command, Alexandria, Va., and then as Director, Environmental Protection and Occupational Safety and Health Division on the staff of the Chief of Naval Operations, Washington, D.C.

Rear Admiral Montoya returned to the West Coast in August 1981 as commanding officer of the Navy Public Works Center, San Diego, Calif. He became Commander, Western Division, Naval Facilities Engineering Command, in June 1984 and was selected to the rank of commodore the following November. In 1986, he became Director, Shore Activities Division, Office of Deputy Chief of Naval Operations (Logistics). He held that position when selected to the rank of rear admiral (upper half) in March 1987.

His awards include the Legion of Merit, Bronze Star Medal with Combat "V," Meritorious Service Medal, Navy Commendation Medal and the Navy Achievement Medal.

Rear Admiral Montoya also received a juris doctor degree at Georgetown University Law Center in Washington, D.C., in May 1980 and was admitted to the District of Columbia Bar in June 1981. He is a registered professional engineer in the state of Georgia.

A native of Indio, Calif., Rear Admiral Montoya is married to the former Virginia Cox, also of Indio, Calif. They have seven children: Benjamin, Christopher, Patrick, Michael, David, Teresa and Natasha.

Retired from the Navy in 1989. Served as Senior Vice President of Pacific Gas & Electric in San Fran.. Current position is President and CEO of Public Service Company of New Mexico in Albuquerque.

WENDI LOUISE STEELE

14107 Lake Scene Trail
Houston, TX 77059

(713) 486-1776

PROFESSIONAL EXPERIENCE:

- Senator Don Nickles -- Legislative Assistant for Defense, Foreign Policy and Trade.
- The U.S. Department of Commerce -- Special Assistant to the Assistant Secretary for Legislative and Intergovernmental Affairs.
- The Defense Base Closure & Realignment Commission -- Office of Legislative Affairs, Senate.
- Rockwell International -- Manager, Legislative Programs.
- The Boeing Company -- Congressional/Economic Analyst, Defense & Space Group, Seattle, WA.
- The White House -- Office of Legislative Affairs, Senate.
- The Executive Office of the President -- Administrative Assistant, Office of Legislative Affairs, The Office of Management and Budget.
- The Office of Vice President Bush -- Office of the National Narcotics Border Interdiction System (intern), which was the precursor to the Office of National Drug Control Policy.

EDUCATION:

Grove City College -- Bachelor of Arts, Honors in Economics.
Georgetown University -- Summer courses and Fund for American Studies Program.
The Foundation for Economic Education -- Scholarship.
American Field Service -- Student Exchange Scholarship to Barbados, West Indies

ADDITIONAL EXPERIENCE:

Republican Delegate -- Twice selected as a Republican delegate to comprehensive meetings with representatives from the former Soviet Union on bilateral, multilateral and arms control concerns. The meetings were held both in the United States and throughout the former Soviet Union and were sponsored by the American Council of Young Political Leaders.

The Committee for the 50th American Presidential Inaugural -- The Chairman's Office.

The Fund for American Studies -- Former member of the Alumni Board.

The United Way Anniversary Celebration -- Assistant to the Producer, The Kennedy Center.

INTERESTS:

Creative Writing, Public Speaking, the Make a Wish Foundation, Swimming Instructor, and other athletics.

MICHAEL P.W. STONE, Commissioner

Michael P.W. Stone resides in San Francisco, California, and has had senior management responsibilities over the past 40 years in both the private and public sectors.

Mr. Stone began his government service in 1982 as mission director in Cairo, Egypt, for the US Agency for International Development. In 1984 he became director of the Office of Caribbean Basin Initiative Affairs at USAID in Washington.

From 1986-88 he served as Assistant Secretary of the Army for Financial Management, and from 1988-89 as Under Secretary of the Army. While he was Under Secretary, Mr. Stone served simultaneously as Army Acquisition Executive and also performed the duties of Under Secretary of Defense for Acquisition for several months in 1989.

He has also served as Chairman of the Board of Directors of the Panama Canal Commission, the entity responsible for supervising operations of the Canal, and in 1991-92 as executive agent for the US civil reconstruction program in Kuwait.

Mr. Stone began his military service in 1943 at the age of 17, when he went to England to join the Royal Navy. He returned to the United States for pilot training, graduating from Pensacola Naval Air Station. He flew in the Mediterranean and the Far East, flying F4U Corsairs, and also flew low-level reconnaissance missions in Spitfires.

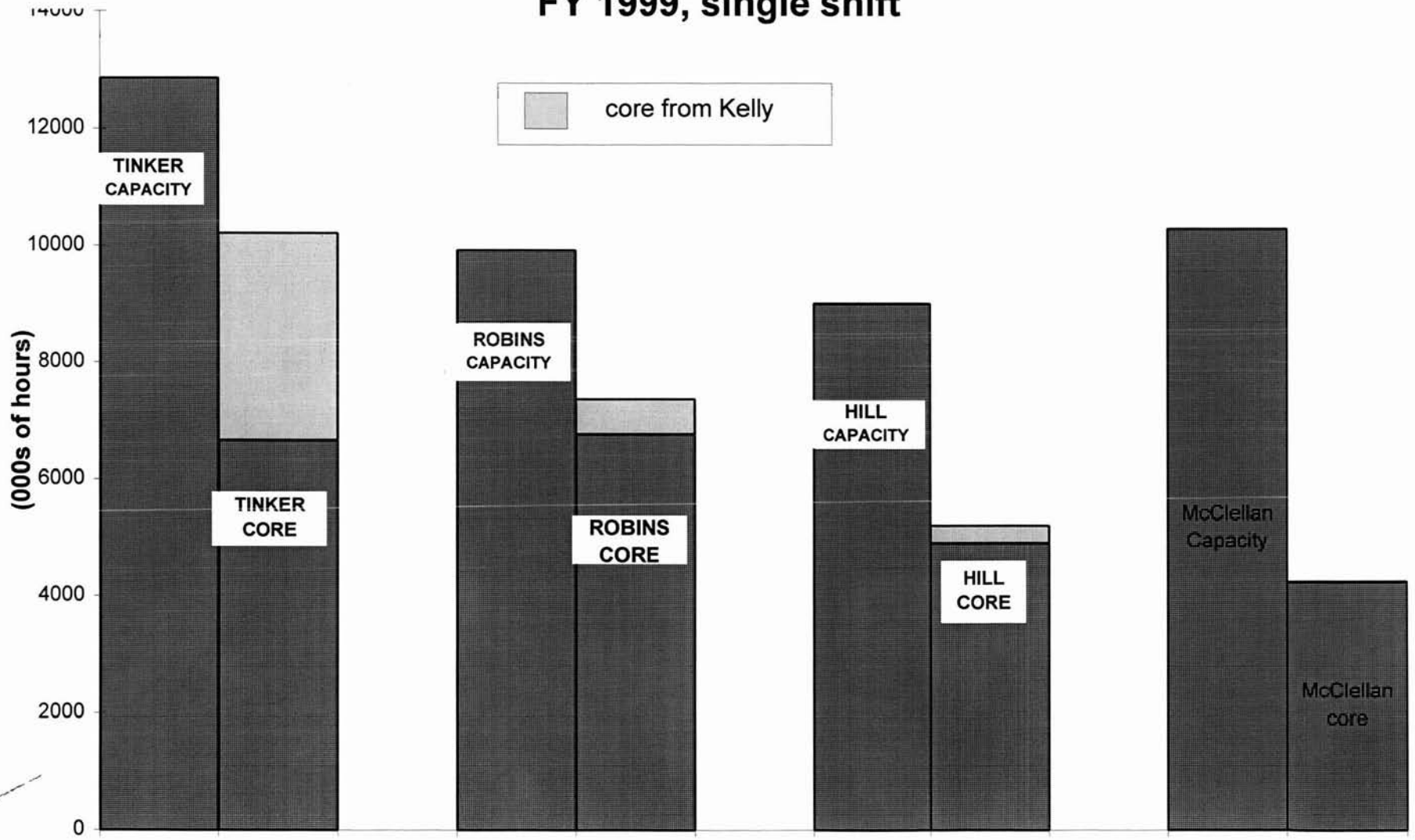
In the private sector, from 1960-77 Mr. Stone was vice-president and co-owner of Sterling International, a diversified paper products company based in San Francisco. From 1968-82, he was general manager and then president of Sterling Vineyards in the Napa Valley, California.

Mr. Stone is a graduate of Yale University. He is currently director of BEI Electronics, Inc., San Francisco, a publicly listed technology company with interests in sensors, encoders, medical equipment and defense systems; chairman of the board of BEI Defense Systems Company, Dallas; chairman of the board of Projects International Association, which specializes in developing international trade and investment; a director of Canadian Marconi Company, an electronics firm; a member of the US Defense Policy Council; and a visiting fellow at Hoover Institute, Stanford University.

Document Separator

	OC MPC	12863	WR MPC	9913	OO MPC	9005			
	OC core	6658	WR core	6763	OO core	4895			
	from SM	1517	from SM	1807	from SM	907			
	from SA	3553	fron SA	600	fron SA	310			
	subtotal to	5070		2407		1217			
	remaining	1135	remaining	743	remaining	2893			
		12863	6658		9913	6763		9005	4895
	core from	0	1517		0	1807		0	907
	core from	0	3553		0	600		0	310
from SM									
1c1 air frames train/tank/bomb		441						441	
1c3 air frames lt Combat				0		907		907	
2b aircraft structures				157				157	
2c hydraulics		357						357	
2d instruments		193						193	
2g avionics		0		334		0		334	
7a grnd radar				430		0		430	
7b radio comm				177		0		177	
7c wire comm				118		0		118	
7e navigation aids				165		0		165	
7f electr optics				109		0		109	
7g satelite				32		0		32	
10d grnd generators		62						62	
12a software tact systems		211						211	
12b software spt equip		184						184	
14 spec interest								0	
15 assoc manufactor		70		284		0		354	
from SM		1517		1807		907		4231	
From SA									
1air frames		421		400		0		821	
2b aircraft structures						19		19	
2c hydraulics		3						3	
2d instruments						5		5	
2e landing gear						4		4	
2g avionics elec				31				31	
2h APU						102		102	
2i other		93						93	
3a engines aircraft		2626				0		2626	
4 missiles		0				57		57	
9 minitions		0				2		2	
12a software tact				14				14	
12b software spt equip				155				155	
13c TMDE		410						410	
15 assoc manuf						120		120	
SA total		3553		600		310		4462	
Total		5070		2407		1217			

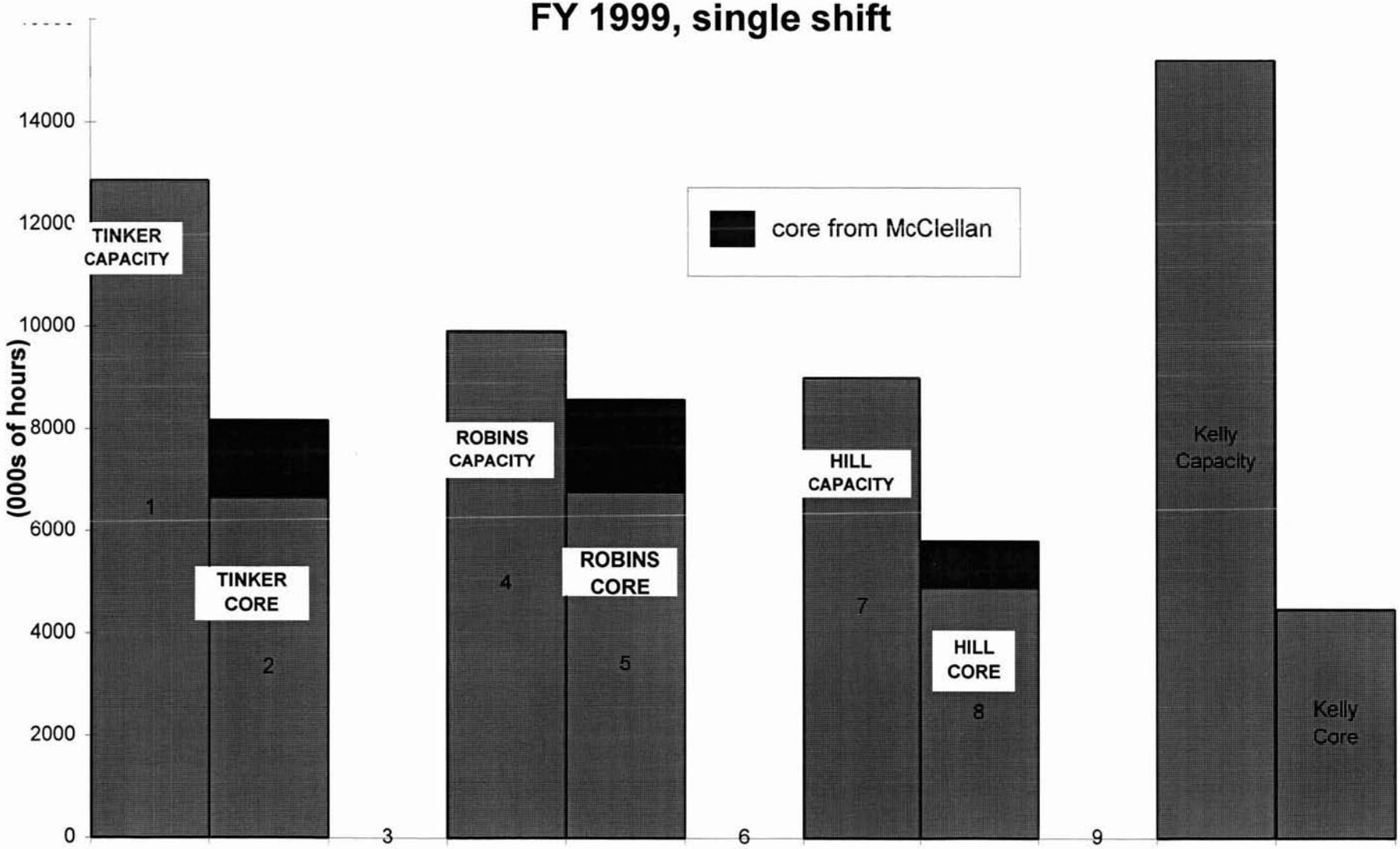
Consolidation of Kelly core workload within Air Force depots
FY 1999, single shift



DISTRIBUTION OF WORK WITHIN AIR FORCE DEPOTS (KELLY CLOSURE)

work from Kelly to Robins:	
airframes	400
avionics	31
software	169
subtotal	**600**
work from Kelly to Hill:	
aircraft structures	19
landing gear	4
APU	102
missiles	57
munitions	2
manufacturing	120
subtotal	**304**
work from Kelly to Tinker:	
air frames	421
other components	93
engines	2,626
TMDE	410
subtotal	**3,550**
work from Kelly to McClellan:	
instruments	5
hydraulics	3
subtotal	**8**

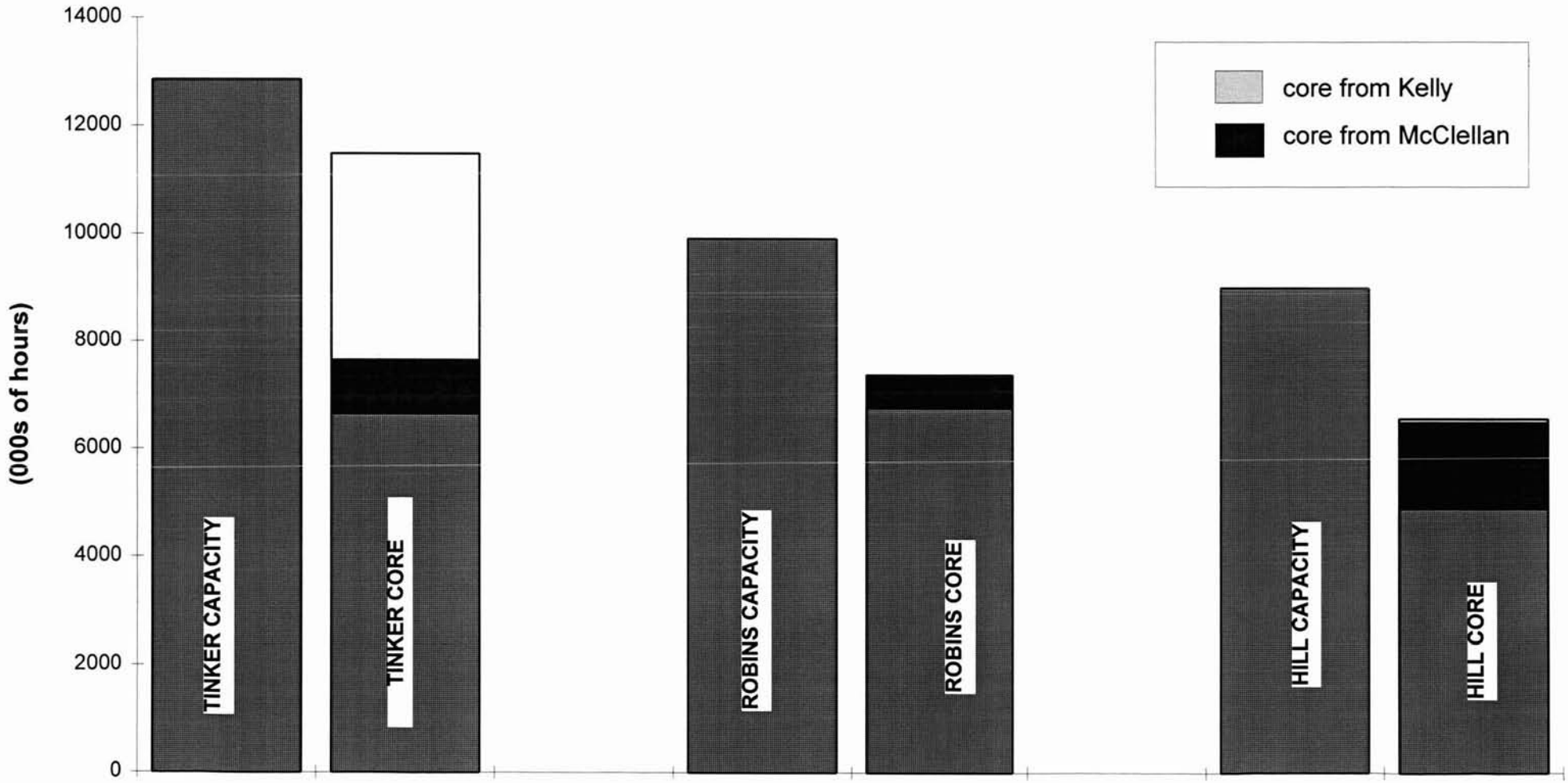
Consolidation of McClellan within Air Force depots
FY 1999, single shift



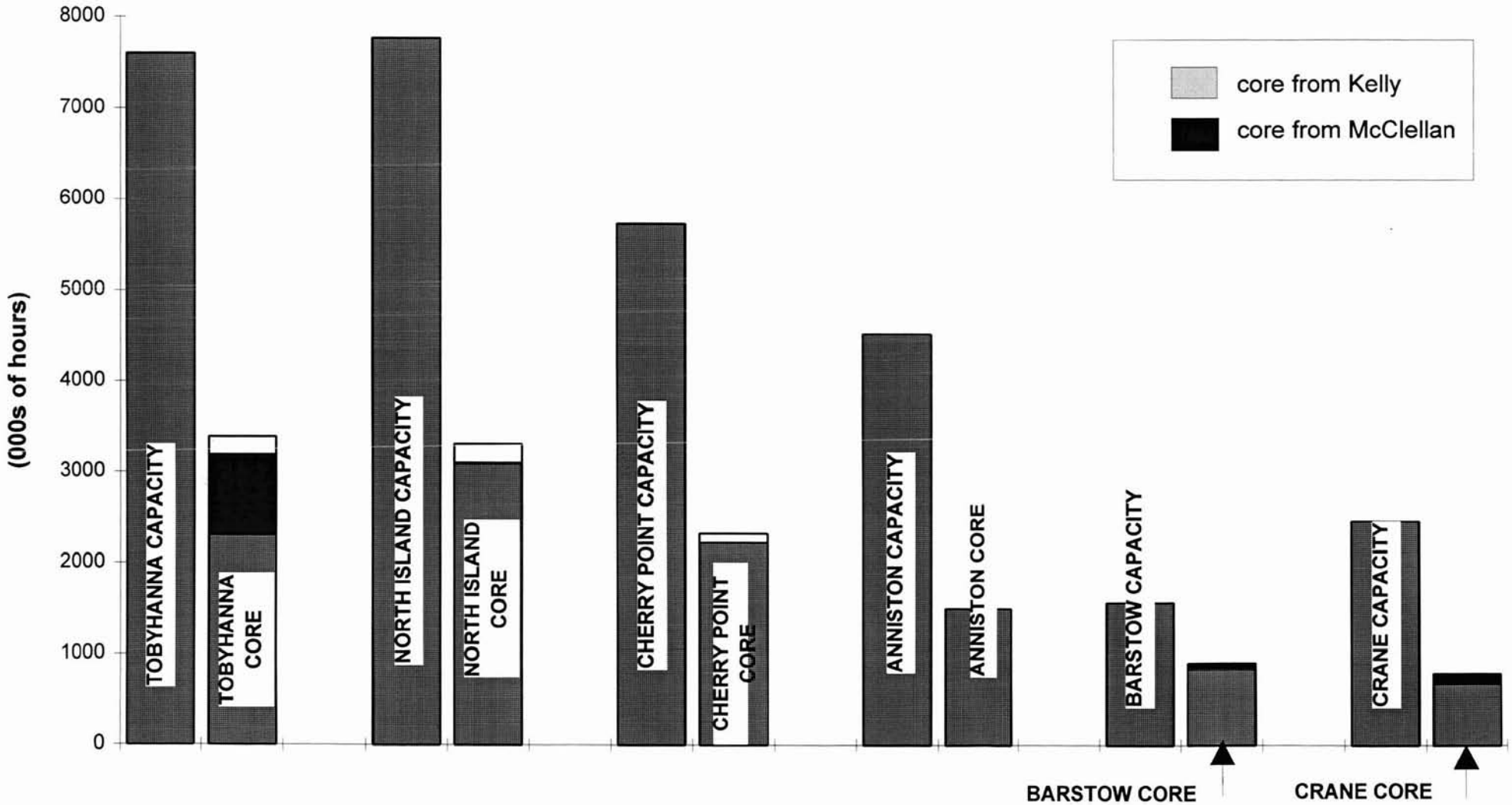
DISTRIBUTION OF WORK WITHIN AIR FORCE DEPOTS (McCLELLAN CLOSURE)

work from McClellan to Tinker:	Thousands of direct Labor hours
air frames (tanker / bomber)	441
hydraulics	357
instruments	193
ground generators	62
tactical system and equip software	395
manufacturing	70
subtotal	**1,517**
work from McClellan to Robins:	
aircraft structures	157
avionics	334
ground radar	430
radio communication	177
wire communication	118
navigation aides	165
satelite	32
electrical optics	109
manufactoring	284
subtotal	**1,807**
from McClellan to Hill:	
lt combat airframes	907
subtotal	**907**
from McClellan to Kelly:	
none	**0**

Cross Service Distribution of Air Force workload
FY 1999, single shift



Cross Service Distribution of Air Force workload
FY 1999, single shift



JOINT CROSS SERVICE DISTRIBUTION OF KELLY WORKLOAD

to Tinker:	Thousands of direct labor hours
air frames	821
hydralics	3
instruments	5
aircraft (other components)	93
engines	2,626
tactical software	14
equip software	155
associated manufactoring	120
subtotal	**3,837**
to Robins:	
aircraft structures	19
avionics	31
subtotal	**50**
to Hill:	
aircraft structures	10
landing gear	4
missiles	57
subtotal	**71**
to Tobyhanna:	
TMDE	205
subtotal	**205**
to North Island:	
TMDE	205
subtotal	**205**
to Cherry Point:	
APU	102
subtotal	**102**
to Anniston:	
ordinance	2
subtotal	**2**

JOINT CROSS SERVICE DISTRIBUTION OF McCELLAN WORKLOAD

	Thousands of direct labor hours
to Tinker:	
air frames	441
hydraulics	357
instruments	193
subtotal	**991**
to Robins:	
airframes	150
aircraft structures	25
avionics	334
manufactoring	54
subtotal	**563**
to Hill:	
lt combat airframes	757
aircraft structures	151
software tactical systems	211
software equipment	184
manufactoring	300
subtotal	**1,602**
to Tobyhanna:	
ground radar	430
radio communication	177
wire communication	118
navigation aides	118
electical optics	32
subtotal	**876**
to Barstow:	
ground generators	62
subtotal	**62**
to Crane:	
electical optics	109
subtotal	**109**

Joint Cross Service Distribution of Kelly and McClellan workload

relocation of work	thousands of direct labor hours
Tinker	4,828
Robins	613
Hill	1,674
Tobyhanna	1,081
North Island	205
Cherry Point	102
Annisition	2
Barstow	62

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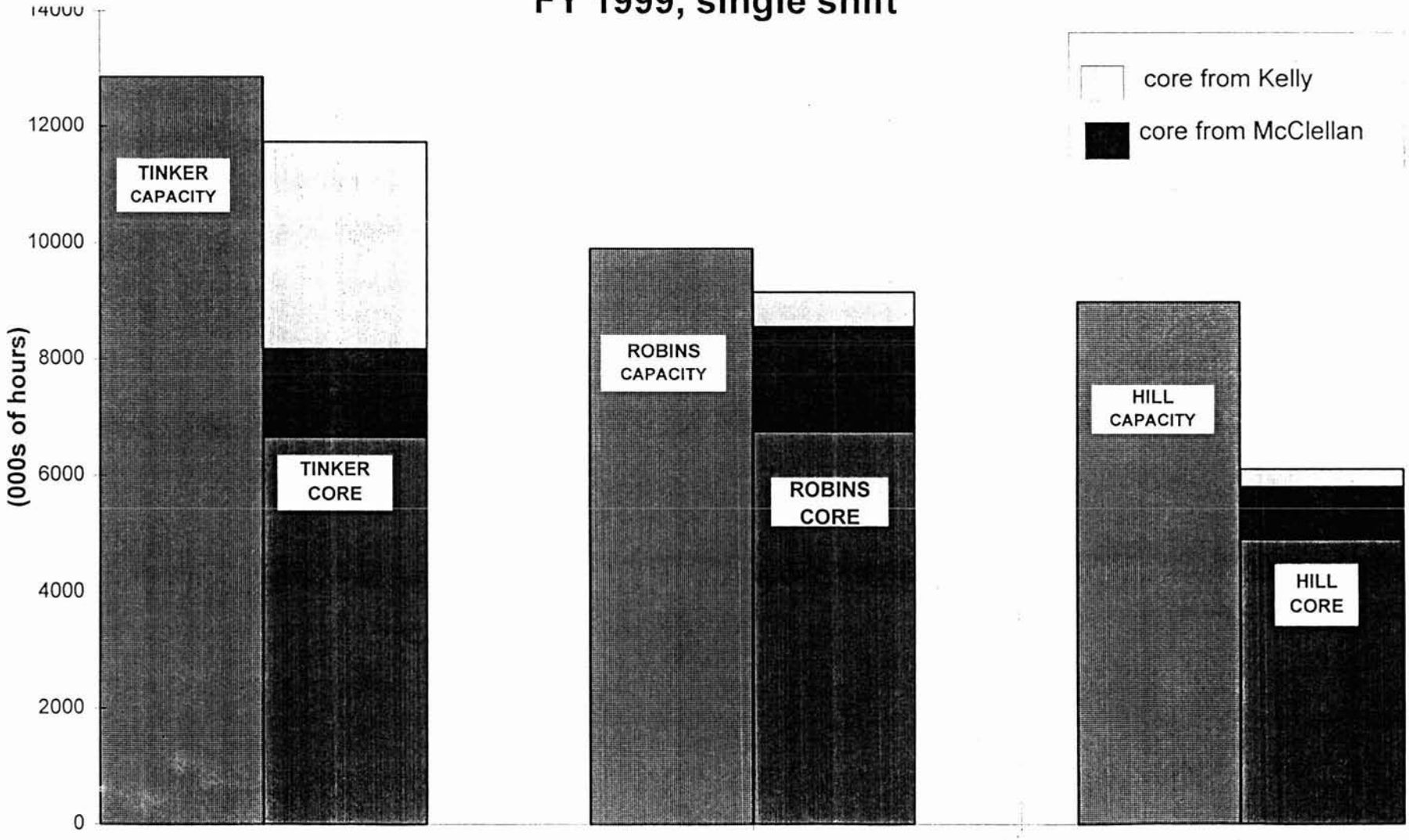
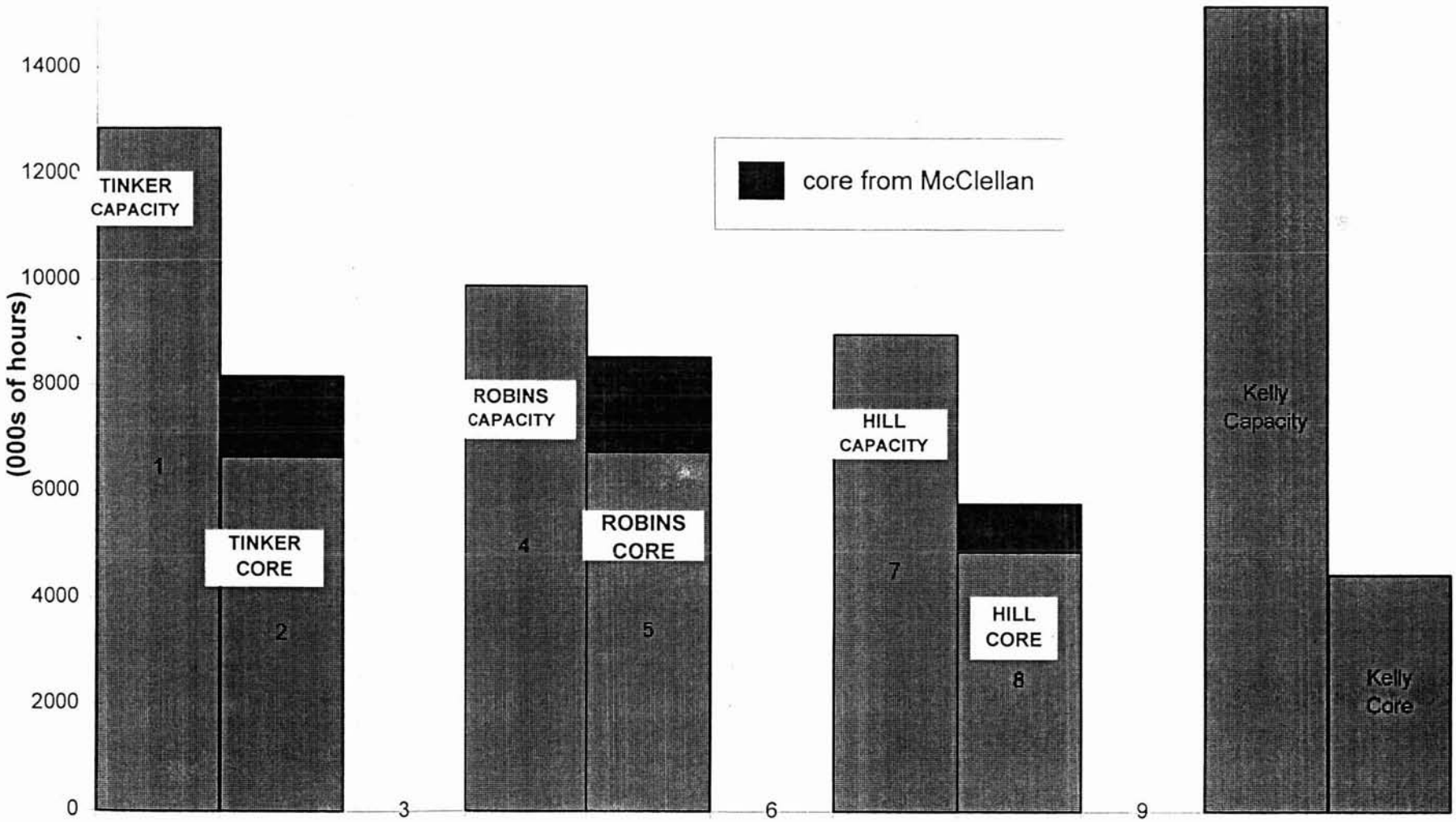
Consolidation of core workload within 3 Air Force depots
FY 1999, single shift



DISTRIBUTION OF WORK WITHIN AIR FORCE DEPOTS (TWO CLOSURES)

work from McClellan to Tinker:	Thousands of direct Labor hours
air frames (tanker / bomber)	441
hydraulics	357
instruments	193
ground generators	62
tactical system and equip software	395
manufacturing	70
subtotal	**1,517**
work from McClellan to Robins:	
aircraft structures	157
avionics	334
ground radar	430
radio communication	177
wire communication	118
navigation aides	165
satelite	32
electrical optics	109
manufactoring	284
subtotal	**1,807**
from McClellan to Hill:	
lt combat airframes	907
subtotal	**907**
work from Kelly to Tinker:	
air frames	421
hydraulics	3
other components	93
engines	2,626
TMDE	410
subtotal	**3,553**
work from Kelly to Robins:	
airframes	400
avionics	31
software	169
subtotal	**600**
work from Kelly to Hill:	
aircraft structures	19
instruments	5
landing gear	4
APU	102
missiles	57
munitions	2
manufacturing	120
subtotal	**310**

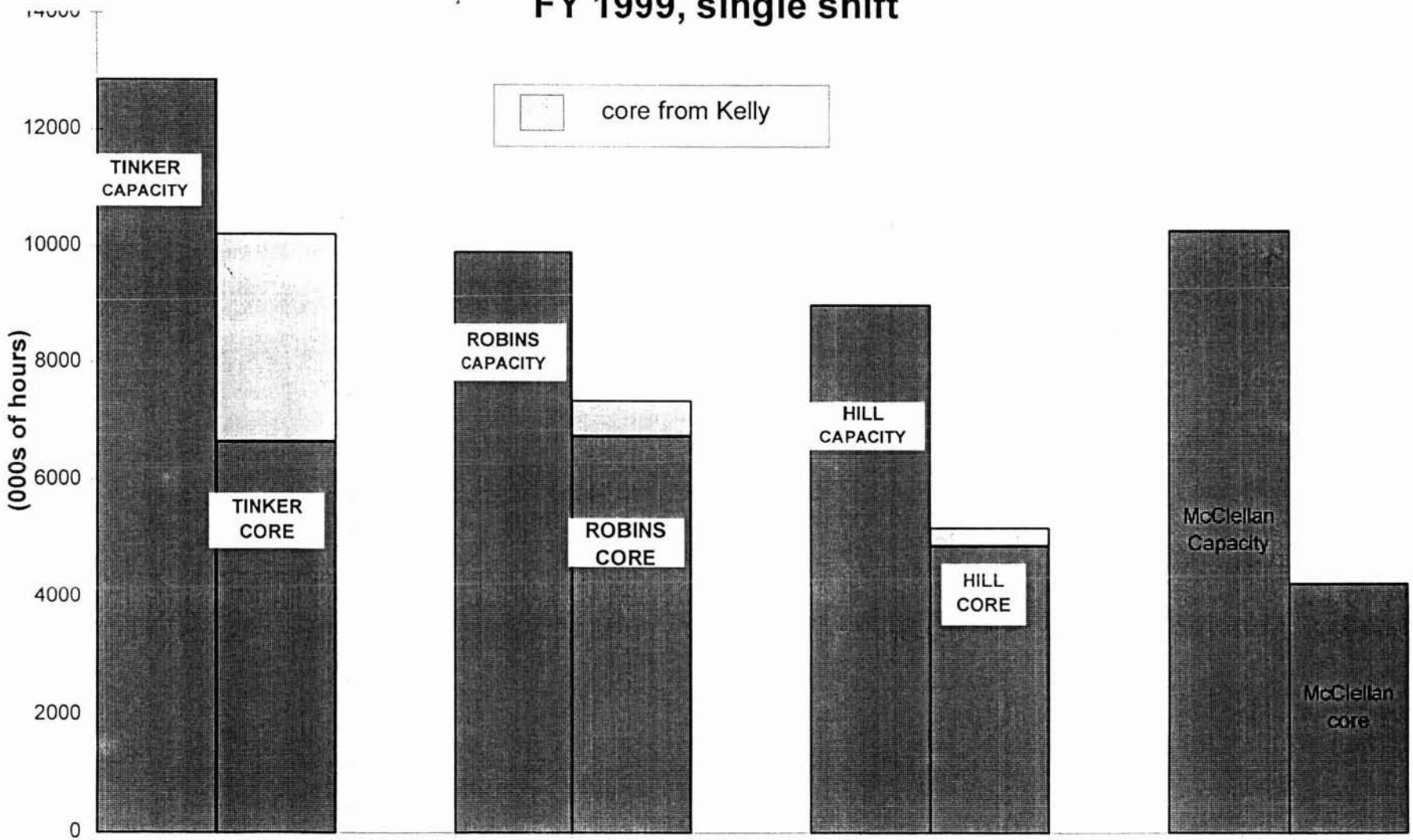
Consolidation of McClellan within Air Force depots
FY 1999, single shift



DISTRIBUTION OF WORK WITHIN AIR FORCE DEPOTS (McCLELLAN CLOSURE)

work from McClellan to Tinker:	Thousands of direct Labor hours
air frames (tanker / bomber)	441
hydraulics	357
instruments	193
ground generators	62
tactical system and equip software	395
manufacturing	70
subtotal	**1,517**
work from McClellan to Robins:	
aircraft structures	157
avionics	334
ground radar	430
radio communication	177
wire communication	118
navigation aides	165
satelite	32
electrical optics	109
manufactoring	284
subtotal	**1,807**
from McClellan to Hill:	
lt combat airframes	907
subtotal	**907**
from McClellan to Kelly:	
none	**0**

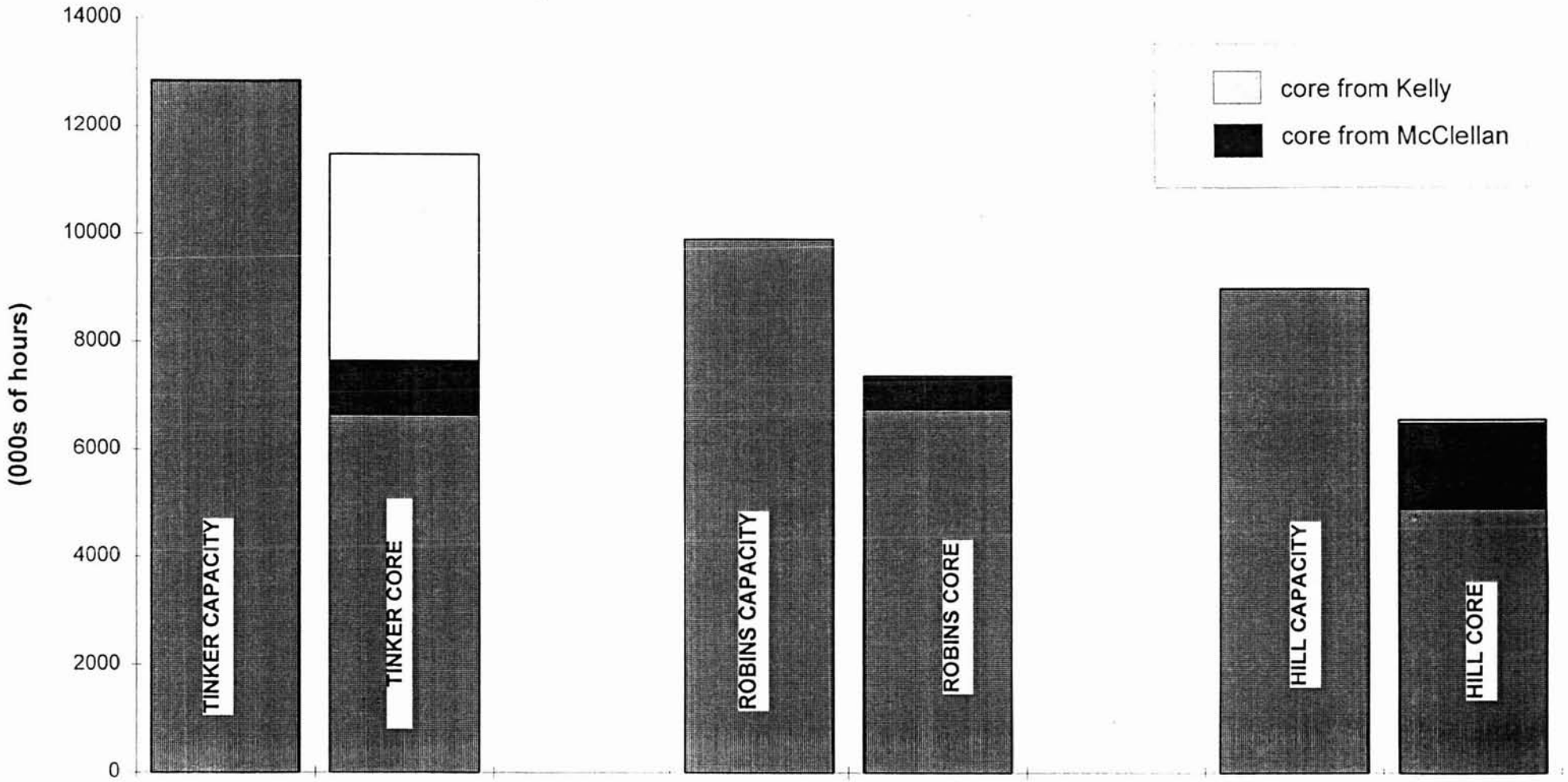
Consolidation of Kelly core workload within Air Force depots
FY 1999, single shift



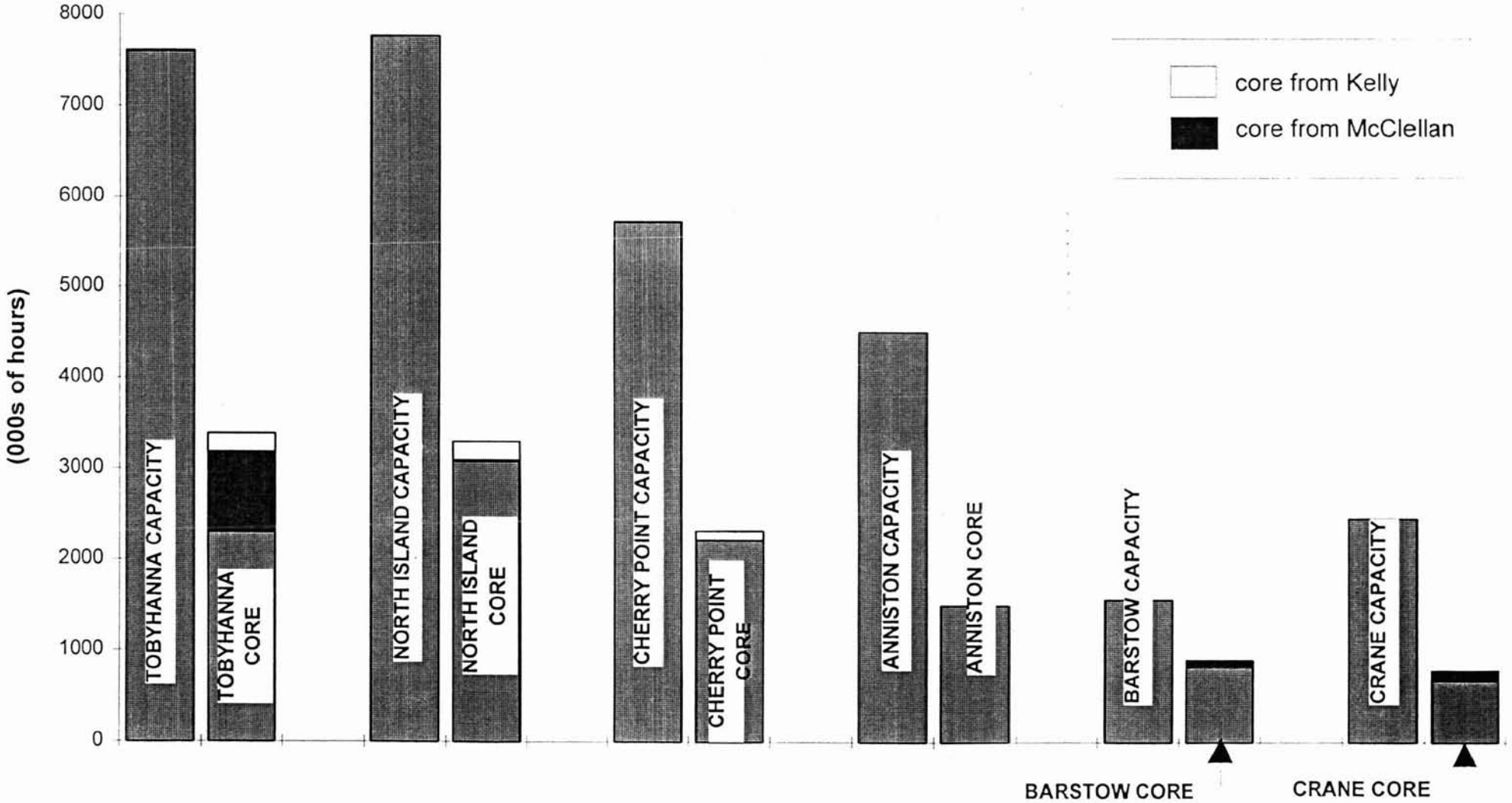
DISTRIBUTION OF WORK WITHIN AIR FORCE DEPOTS (KELLY CLOSURE)

work from Kelly to Robins:	
airframes	400
avionics	31
software	169
subtotal	**600**
work from Kelly to Hill:	
aircraft structures	19
landing gear	4
APU	102
missiles	57
munitions	2
manufacturing	120
subtotal	**304**
work from Kelly to Tinker:	
air frames	421
other components	93
engines	2,626
TMDE	410
subtotal	**3,550**
work from Kelly to McClellan:	
instruments	5
hydraulics	3
subtotal	**8**

Cross Service Distribution of Air Force workload
FY 1999, single shift



Cross Service Distribution of Air Force workload
FY 1999, single shift



Joint Cross Service Distribution of Kelly and McClellan workload

relocation of work	thousands of direct labor hours
Tinker	4,828
Robins	613
Hill	1,674
Tobyhanna	1,081
North Island	205
Cherry Point	102
Annisition	2
Barstow	62

JOINT CROSS SERVICE DISTRIBUTION OF McCELLAN WORKLOAD

	Thousands of direct labor hours
to Tinker:	
air frames	441
hydraulics	357
instruments	193
subtotal	**991**
to Robins:	
airframes	150
aircraft structures	25
avionics	334
manufactoring	54
subtotal	**563**
to Hill:	
lt combat airframes	757
aircraft structures	151
software tactical systems	211
software equipment	184
manufactoring	300
subtotal	**1,602**
to Tobyhanna:	
ground radar	430
radio communication	177
wire communication	118
navigation aides	118
electical optics	32
subtotal	**876**
to Barstow:	
ground generators	62
subtotal	**62**
to Crane:	
electical optics	109
subtotal	**109**

to Tinker:	Thousands of direct labor hours
air frames	821
hydralics	3
instruments	5
aircraft (other components)	93
engines	2,626
tactical software	14
equip software	155
associated manufactoring	120
subtotal	**3,837**
to Robins:	
aircraft structures	19
avionics	31
subtotal	**50**
to Hill:	
aircraft structures	10
landing gear	4
missiles	57
subtotal	**71**
to Tobyhanna:	
TMDE	205
subtotal	**205**
to North Island:	
TMDE	205
subtotal	**205**
to Cherry Point:	
APU	102
subtotal	**102**
to Anniston:	
ordinance	2
subtotal	**2**

Document Separator

Air Force Depot Closure Alternatives

Overview

- General Guidelines
- Close Kelly AFB
  - Depot Maintenance Workload
  - Product Management
  - Tenants
- Close McClellan AFB
  - Depot Maintenance Workload
  - Product Management
  - Tenants
- Close Kelly and McClellan

ATCH 3

General Guidelines

- Co-locate Depot Maintenance and Product Management
- Address Transfer of Tenants
  - Supporting Agencies May Disperse or Disband

Alternative #1

Close Kelly AFB

Kelly AFB Closure

Inter-Air Force Workload Transfer

	OC-ALC	OO-ALC	SM-ALC	WR-ALC
TTB	821			
Acft Structures	19			
Hydraulics			4	
Instruments			5	
Landing Gear	4			
Avionics				31
Engines	2600			
Aircraft Other	93			
Strat Msl Cmpt	~~57~~	57		
APUs	107			
Software	169			
TMDE		409		
Assoc Man/Fab	120			
Total	3990	409	9	31

Direct labor hours in thousands

Kelly Management Functions*

Function	***New Location***
■ Aerospace Fuels	■ Tinker AFB/DLA
■ Mature & Proven Acft (FMS)	■ Tinker AFB

* Management FunctionsFollow Depot Workload

Kelly Tenant Organizations

Organization	Pers	New Location
■ Air Intelligence Agency	3000	Retain as Lackland
■ Defense Logistics Agency	937	Disband/Disperse
■ Defense Commisary Agency	482	Relocate DECA HQ Portion Only
■ Defense Accounting Office	179	Disband/Disperse
■ AFRES		
■ 433 Airlift Wing (14 C-5s)	3009	TBD
■ Aeromedical Unit	216	Lackland
■ Texas ANG (15 F-16s)	1213	Bergstrom AFB
■ 1827 Electronics Inst Sqdn	309	Lackland

Kelly Closure Variants

- Extend Lackland AFB to Include AFRES/ANG
  - Assumes Joint-Use Runway
- Contract Part or All C-5 Maintenance

Alternative #2

Close McClellan AFB

McClellan AFB Closure

Inter-Air Force Workload Transfer

Commodity	Gaining Location		
	OC-ALC	OO-ALC	WR-ALC
TTB	443		
Light Combat		757	159
Acft Structures		334	102
Hydraulics	357		
Instruments	194		
Avionics (F-111)		434	
Ground Radar		436	
Radio Comm		177	
Wire Comm		118	
Nav Aids		159	
Electro Optics		189	
Satellite Sensor		32	
Gnd Generators	51		
Software	394		394
Total	1446	2456	812

Direct labor hours in thousands 1052 706

McClellan Management Functions *

Function	*New Location*
■ F-117A	■ Tinker
■ F-22	■ Warner Robins
■ QL Specialized Management	■ TBD

* Management FunctionsFollow Depot Workload

McClellan Tenant Organizations

Organization	*Pers*	*New Location*
■ Defense Commissary Agency	169	Disband/Disperse
■ DFAS	139	Disband/Disperse
■ Defense Logistics Agency	603	Disband/Disperse
■ US Coast Guard	190	Moffit Field?
■ ARFRES		
■ HQ 4th Air Force	314	March AFB
■ 940 Air Refueling Wing (9 KC-135Es)	884	Beale (BRAC 93)
■ Detachment 42	142	Tinker
■ Technical Operations	388	Offutt
■ 1849 Electronics Sqdn	309	Travis

Alternative #3

Close Kelly AFB & McClellan AFB

Kelly and McClellan Closure
Inter-Air Force Transfer

	SA-ALC	SM-ALC	OC-ALC	OO-ALC	WR-ALC
TTB			1269		
Light Combat				[illegible]	[illegible]
Acft Structures			19	[illegible]	[illegible]
Hydraulics			[illegible]		
Instruments			[illegible]		
Landing Gear			4		
Avionics (F-111)				[illegible]	
Aircraft Other			92		
Engines			[illegible]		
Blades & Vanes			79		
Ground Radar				[illegible]	
Radio Comm				[illegible]	
Wire Comm				[illegible]	
Nav Aids				[illegible]	
Electro Optics				[illegible]	
Satellite Sensor				[illegible]	
Grnd Generators				[illegible]	
Software			189	[illegible]	
Total			4792	2729	157

Direct labor hours in thousands

CRITERIA IV & V

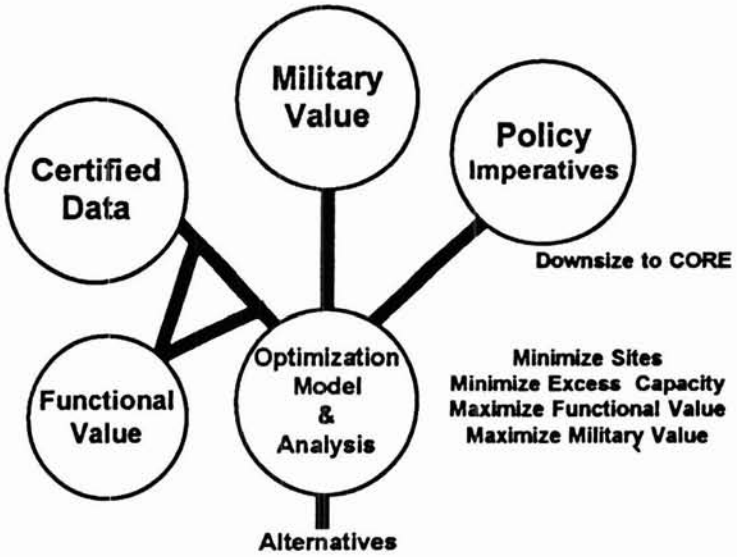
Preliminary Data

	1-TIME COST ($M)	20 YR NPV	STEADY STATE	ROI	PERS SAVINGS
KELLY AFB	692	(68)	(65)	13	1201
SACRAMENTO AFB	610	(388)	(86)	7	1643
DUAL CLOSURE	1302	(456)	(151)	10	2844

*** Does not include tenant MILCON, military family housing, or Base Conversion Agency closure costs.

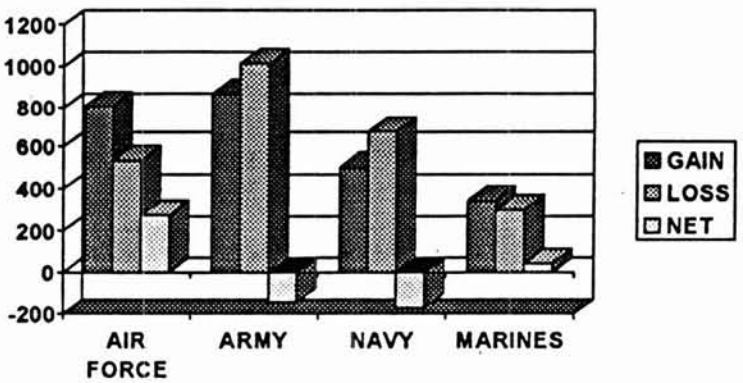
Interservicing Options

JCSG Process



JCSG-DM ALTERNATIVE 1 NET RESULTS
(SA-ALC CLOSES)

K
DLH



Kelly AFB Closure

Inter-Service Workload Transfer

	OC	OO	SM	WR	NDP-CH	NDP-NI	TOAD	ANAD
TTB	821							
Trainer Acft	9							
Acft Structures	19							
Hydraulics			3					
Instruments			6					
Landing Gear	4							
Avionics				31				
APUs					107			
Other Acft	93							
Engines	2800							
Blades/Vanes	29							
Strategic Miss		67						
Munitions Ord								2
Software	169							
TMDE						169	241	
Assoc Manufact	170							
Total	3,954	67	9	31	107	169	241	2

Direct labor hours in thousands

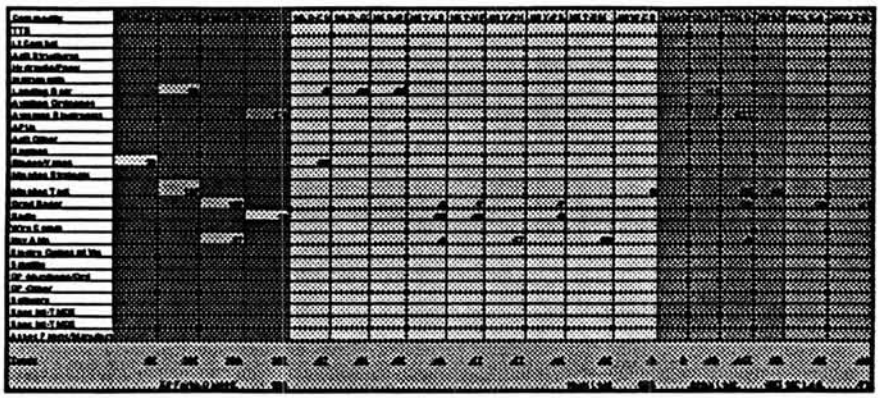
Kelly Closure

Interservice Workload Lost

Commodity							NAD-CH	NAD-NI	TOAD
TTB									
Lt Combat									
Acft Structures									
Hydraulic/Pneu									
Instruments									
Landing Gear									
Aviation Ordnance									
Avionics Electronics									
APUs									
Acft Other									
Engines									
Blades/Vanes									
Missiles Strategic									
Missiles Tact									
Grnd Radar									
Radio									
Wire Comm									
Nav Aids									
Electro Optics nt Vis									
Satellite									
GP-Munitions/Ord									
GP-Other									
Software									
Spec Int-Bearings									
Spec Int-TMDE									
Assoc Fabric/Manufact									
Total									
Grand Total									

Kelly Closure

Interservice Gained Workloads



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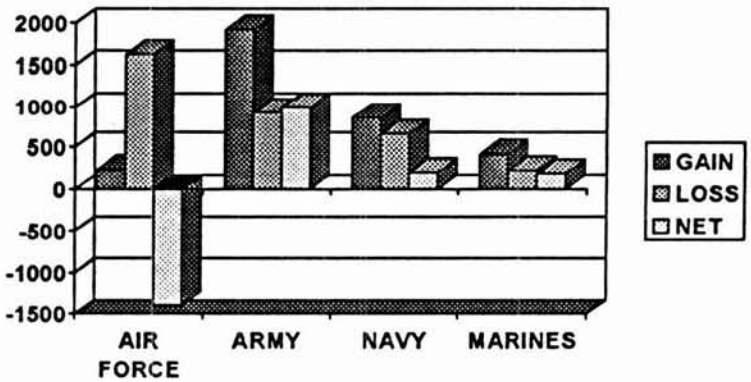
JCSG-DM ALTERNATIVE 2 NET RESULTS

(SA-ALC & SM-ALC CLOSE)



Kelly AFB & McClellan AFB Closures
Inter-Service Workload Transfer

	SA	SM	OC	OO	WR	NDP CH	NDP NI	NSWCR	MC-A	MC-B	TOAD
TTB	-471	-424	1,280								
Light Combat		-607		705	318						
Trainer Acft	-9			82							
Acft Structures	-18	498	192								
Hydraulics	-1	177	177								
Instruments	-4	196	176								
Landing Gear	-4		4								
Avionics	-51	214			364						
APUs	-197					197					
Other Acft	-93		93								
Acft Engines	-2,640		2,825								
Strat Missiles	-87			87							
Ground Radar		230									130
Radio Comm		172									172
Wire Comm		118									118
Nav Aids		103									104
Electro Optics		109						109			
Satellite Sensor		32									32
Gnd Equipment		63							5	58	
Software	-108	294	108	294							
TMDE	-461						241				198
Assoc Fab Mfr	-170		118	290	54						
Total	-4,439	1,518	5,160	1,599	568	107	241	109	5	58	1,089

Direct labor hours in thousands

Kelly and McClellan Closure
Interservice Gained Workloads

	[illegible]	[illegible]	[illegible]	NADCN	NADJR	NADMI	[illegible]	[illegible]	[illegible]	[illegible]
TTB										
Lt Combat										
Acft Structures										
Hydraulic/Pneu										
Instruments										
Landing Gear		30		-3	-30	-24	-1			
Aviation Ordnance										
Avionics Electronics										
APUs										
Acft Other										
Engines										
Blades/Vanes	33			39						
Missile Strategic										
Missile Tact		33						-10	-39	-10
Grnd Radar										
Radio										
Wire Comm										
Nav Aids										
Electro Optical Vis										
Satellite										
GP-Munitions/Ord										
GP-Other										
Software										
Spec Ind-TMDE										
Spec Ind-TMDE										
Assoc Fabric/Manufact										
Total		39	147	0	-37	-36	-25	-11	-10	-49	-10
Air Force Gained			236	Navy Lost			-98	Army Lost			-120

Kelly & McClellan Closure

Interservice Workload Lost

Commodity					NAD-CH				
TTB									
Lt Combat									
Acft Structures									
Hydraulic/Pneu									
Instruments									
Landing Gear									
Aviation Ordnance									
Avionics Electronics									
APUs									
Acft Other									
Engines									
Blades/Vanes									
Missiles Strategic									
Missiles Tact									
Grnd Radar									
Radio									
Wire Comm									
Nav Aids									
Electro Optics nl Vis									
Satellite									
GP-Munitions/Ord									
GP Grnd Generators									
Software									
Spec Int Bearings									
Spec Int-TMDE									
Assoc Fabric/Manufact									
Total									

Capacity Analysis

Summary of Potential Closures

	MIN SITES		MIN EXC CAP		MIL VAL	FUNC VAL
	F/V	M/V	F/V	M/V	F/V	
	#1	#1	#1	#1	#1	#1
ANAD						
CCAD	D	D	D	D	D	
LEAD	X	X	X	X	X	
RRAD	X	X	X	X	X	A
TOAD						
OC-ALC						
OO-ALC						
SA-ALC	X	X	X	X	X	
SM-ALC			X			
WR-ALC						
AMARC	D	D	D	D	D	D
MCLB AL						
MCLB BA						A
NADEP CP						
NADEP JX	X	X	X	X	X	
NADEP NI						
NSY LB			P			
NSY NF						
NSY PH	X	X	P	X	X	A
NSY PM	X	X	P	X	X	A
NSY PS						
NWC CR	X	X		X	X	X
NWC LO			X			
NUWC KP	X	X	P	X	X	A
Model Total	10	10	8	10	10	2
DAT Total	8	8	8	8	8	6

ATCH 4

Data Analysis Team Recommendations

- Minimize Sites #1
  - Identifies 8 potential closures
  - Reduces production lines by approximately 41 percent
- Single sites (13)

Command & Control Aircraft
Landing Gear Overhaul
Strategic Missiles
Self propelled ground vehicles
Radar
Other grnd gen'l purpose items
Tanks (Ground Combat Vehicles)
Satellite Control/Space Sensors
Blades and Vanes (Type 2)
Towed Combat Vehicles
Electronic Warfare
Small Arms/Personal Weapons
Ground generators

Data Analysis Team Recommendations

- **Maximize Excess Capacity #1**
  - Identifies 8 potential closures
  - Reduces production lines by approximately 45 to 46 percent
- **Single sites(13)**

Command & Control Aircraft
Landing Gear Overhaul
Strategic Missiles
Self propelled ground vehicles
Radio Communications
Ground generators
Munitions/Ordnance
Satellite Control/Space Sensors
Blades and Vanes (Type 2)
Towed Combat Vehicles
Electronic Warfare
Small Arms/Personal Weapons
Tanks (Ground Combat Vehicles)

Document Separator

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE

31 MAY 1995

MEMORANDUM FOR DBCRC (Mr. Francis A. Cirillo, Jr.)

149

FROM: HQ USAF/RT

9505188

SUBJECT: Mission Impacts for ALC Closures

In response to your May 17, 1995 request for mission impacts to each ALC in the event of closure, the attached depot impact statements are forwarded. You also asked for closure level playing field COBRAs and backup worksheets which were previously transmitted. Please note that comments are provided for active-duty, AFRES, and ANG operational units at each ALC installation. If you need additional information, feel free to contact Lt Col Mary Tripp at 38678.

Jay D. Blume Jr.

JAY D. BLUME, Jr., Maj Gen, USAF
Special Assistant to CSAF for
Realignment and Transition

Atchs: ALC Mission Impacts (RT527)

THE DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION
1700 NORTH MOORE STREET SUITE 1425
ARLINGTON, VA 22209
703-696-0504

ALAN J. DIXON, CHAIRMAN

COMMISSIONERS:
AL CORNELLA
REBECCA COX
GEN J. B. DAVIS, USAF (RET)
S. LEE KLING
RADM BENJAMIN F. MONTOYA, USN (RET)
MG JOSUE ROBLES, JR., USA (RET)
WENDI LOUISE STEELE

May 17, 1995

Please refer to this number when responding 950518-8

Major General Jay Blume (ATTN: Lt. Col. Mary Tripp)
Special Assistant to the Chief of Staff
for Base Realignment and Transition
Headquarters USAF
1670 Air Force Pentagon
Washington, D.C. 20330-1670

Dear General Blume:

Approximately one year ago, the Air Force prepared "level playing field" COBRAs for all five ALC installations. Now that the Commission has determined that all five should be considered for closure, we required updated COBRAs for these installations.

Please update the level playing field closure COBRAs for each of the five ALC installations and forward them, along with all back-up worksheets, to the Commission by 24 May 1995. Please also prepare and submit a statement which articulates the impact of closure on the missions at each installation.

Sincerely,

Francis A. Cirillo Jr., PE
Air Force Team Leader

KELLY AIR FORCE BASE, TEXAS

COBRA ASSUMPTIONS (Major Tenants):

- Air Intelligence Agency remains in cantonment and is attached to Lackland AFB
- AFRES C-5As and ANG F-16s remain in cantonment at Lackland AFB
- SA-ALC workload transfers to OC-ALC (89%), OO-ALC (10%), and WR-ALC (1%)
- 1827th EIG remains at Lackland AFB
- Regional SIGINT Operations Center remains at Lackland AFB
- Remaining Base Population to Base X

IMPACTS:

Each option the Air Force considered at Kelly remained constant in that AFRES and ANG operations should remain in cantonment

- Minimum Impact to AFRES and ANG operations
  - -- If ANG Fighter Unit is not allowed to stay in cantonment
    - --- Limited possible alternate locations (i.e. Biggs AAF, reduced population for recruiting)
    - --- Lowers personnel participation in unit training events--reduces operational capability
    - --- Reduces access to flight training areas and support infrastructure
    - --- Some personnel will elect not to transfer with unit--reduces operational capability, increases replacement training time and cost
  - -- If AFRES C-5 Unit is not allowed to remain in cantonment
    - --- Loss of excellent recruiting location
    - --- Loss of central location to support operations in any theater of operations
    - --- Extremely high MILCON cost
- 485th EIG redirect would require review

STATEMENT: The closure of Kelly Air Force Base must include the cantonment of both the AFRES C-5A and ANG F-16 units currently located there. Any alternate location for the C-5A unit will require extensive MILCON, not to mention the loss of a valuable recruiting area. Few other attractive locations exist within the State of Texas suitable for the relocation of the ANG F-16 squadron. Those areas where a suitable runway does exists either infringes on other AFRES or ANG recruiting areas, or lies outside of a metropolitan area required to sustain operations.

HILL AIR FORCE BASE, UTAH

COBRA ASSUMPTIONS (Major Tenants):

- Move 729th ACS to Cannon AFB
- Move 84th RADS to Cannon AFB
- Move 36 F-16C/Ds to Cannon AFB
- Move 18 F-16 C/Ds to Shaw AFB
- Retain AFRES unit in range cantonment area
- OO-ALC workload transfers to SM-ALC (39%), OC-ALC (37%), WR-ALC (14%), SA-ALC (10%)
- Remaining Base Population to Base X

IMPACTS:

- Rebasing of 388 FW Wing will result in a sub-optimal location for operational LANTIRN training
  - -- Will result in dense packing of remaining F-16 locations
- Removal of Active and Reserve fighter units would preclude or greatly reduce accessibility to UTTR
- No location in the State of Utah suitable for AFRES unit location
- UTTR ground and air training ranges must be protected--it is a major training resource for the Composite Wing at Mountain Home
  - -- UTTR instrumented range is only US cruise missile capable test range
  - -- One of only three Air Force Major Range and Test Facility Bases; one of the few overland supersonic ACBT training areas
- Prohibitively expensive to replicate Hill's missile maintenance capability and weapons storage facility elsewhere

STATEMENT: The closure of Hill Air Force Base would require the relocation of the 388 FW, and a collocated AFRES F-16 squadron. The movement of Hill's active duty aircraft would densepack remaining F-16 locations, in addition reducing the effectiveness of LANTIRN training currently conducted at Hill. There are no other suitable F-16 locations in Utah to house the AFRES unit. The Utah Test and Training Range (UTTR) must be protected. It serves as a major training area for the Composite Wing at Mountain Home, in addition to providing some of the best overland supersonic airspace available in the CONUS. Also, the UTTR instrumented range is the only US cruise missile capable test range. Finally, any move to replicate Hill's missile maintenance capability and weapon's storage facility would be prohibitively expensive.

MCCLELLAN AIR FORCE BASE, CALIFORNIA

COBRA ASSUMPTIONS (Major Tenants):

- AFRES Headquarters (4 AF) moves to March AFB
- USCG moves to NASA Moffett
- Det 42 (Classified) to Travis AFB
- AFTAC moves to Offutt AFB
- 1849th EIS moves to Travis AFB
- SM-ALC workload transfers to OO-ALC (70%), OC-ALC (25%), WR-ALC (5%)
- Remaining Base Population to Base X

IMPACTS:

- Precludes DoD recommended move of North Highlands ANG station to McClellan
- BRAC 95 485th EIG redirect would require review
- Precludes DoD recommended move of the 129 RQS (ANG) from NASA Moffett to McClellan
- No operational impact to AFRES operations currently at McClellan
  - -- AFRES KC-135 unit programmed to move to Beale

STATEMENT: The closure of McClellan Air Force Base would have an impact on current DoD recommended BRAC actions to move the North Highlands AGS and the 129 RQS to McClellan. In addition, the BRAC 95 redirect involving the relocation of the 485th EIG would also require review.

ROBINS AIR FORCE BASE, GEORGIA

COBRA ASSUMPTIONS (Major Tenants):

- Headquarters AFRES to Dobbins ARB
- 19th Air Refueling Wing to Charleston AFB
- 5th Combat Comm Group to Shaw AFB
- Joint STARS to Beale AFB
- WR-ALC workload transfers to SM-ALC (58%), SA-ALC (30%), OO-ALC (12%)
- Remaining Base Population to Base X

IMPACTS:

- Robins already designated as ALC for Joint STARS
  -- Collocation with ALC reduces JSTARS unique support requirements
- Closure would delay IOC of JSTARS program, currently scheduled for FY 97/2
  -- Will increase response time as well as sustainment capability
- Closure would severely impact JSTARS crewmember initial qualification, mission ready rates, and continuation training due to required MILCON at new location
- No alternate location in the State of Georgia to relocate ANG B-1s currently programmed to move to Robins
  -- Virtually any other beddown would involve significant MILCON
  -- McConnell AFB is not available, no excess capacity
- Relocation of Active Duty Air Refueling Wing will be necessary
  -- Should remain in the Southeast due to a documented tanker shortage

STATEMENT: The closure of Robins Air Force Base would have a lasting impact on the Initial Operational Capability (IOC) date of the JSTARS program. MILCON is already well underway to facilitate the projected IOC date of FY 97/2. Any closure would severely impact JSTARS initial crewmember qualification, mission ready rates, and continuation training. In addition, Robins has already been designated as the ALC for JSTARS. This collocation significantly reduces JSTARS unique support requirements. The 19th Air Refueling Wing would also require relocation, preferably in the Southeast, due to the documented tanker shortage which exists within the region. Finally, any closure of Robins would require an alternate location for the inbound B-1 ANG operation. There are no other locations within the State of Georgia available to support this mission, and the only other ANG B-1 unit at McConnell would be unable to accept the additional aircraft.

TINKER AIR FORCE BASE, OKLAHOMA

COBRA ASSUMPTIONS (Major Tenants):

- AFRES KC-135s to March AFB
- AWACS to Beale AFB
- TACAMO to Base X
- 3rd Combat Comm Group to Davis Monthan AFB
- 38th EIW to Peterson
- OC-ALC workload transfers to SA-ALC (72%), WR-ALC (14%), SM-ALC (13%), OO-ALC (1%)
- Remaining Base Population to Base X

IMPACTS:

- Would require relocation of AFRES KC-135 unit, AWACS, and Navy TACAMO
- Reduces AWACS training opportunities and disrupts entire training program
- Increases depot costs -- AWACS and TACAMO depot support is at Tinker
- Costs to locate either AWACS or TACAMO would be prohibitively expensive
- Loss of joint economy of scale with Navy E-6 TACAMO program
- Movement of contracted flight training and blue suit mission training, including simulators, would effectively stand down initial training program and parts of continuation training program
  - -- Results in reduced manning and reduced operational capability
- Extended length sorties will be required to reach training orbits
- Loss of depot cannibalization opportunities, loss of support in back shops, and no early preparation for phase inspections
- BRAC 93 485th EIG redirect would require review

STATEMENT: The closure of Tinker Air Force Base would have a significant impact on the capability of both the Air Force's AWACS and the Navy's E-6 TACAMO operations. Both rely on extensive support from their collocated ALC, in addition to their specialized maintenance facilities. Any required move of either unit would involve the relocation of contracted flight training and blue suit simulator training, effectively standing down initial training and important parts of their continuation training. Since training areas for both aircraft are in the south central US, any movement out of the region will drive increased O&M costs due to the extended length of training sorties required. In addition, it is operationally necessary for the AWACS to be based in the Central US to allow the unit to deploy either east or west in an equally rapid fashion. Finally, the AFRES KC-135 unit at Tinker would also require relocation, again to a metropolitan area suitable for recruiting.

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COMPARISON OF COBRAs

	Navy depot base closure	Air Force depot base closure	Army depot closure
Time to Close	2-3 years	6 years	3-4 years
positions eliminated before workload move	average has been 20-30% gainer estimated requirement	none	based on gainer estimated requirement
timing of position elimination	phased over closure period based on COBRA calculations	all in 2001	phased according to scenerio
civilian personnel leave cost	none recognized as BRAC gov't obligated to pay regardless	all recognized as BRAC cost	none recognized as BRAC gov't obligated to pay regardless
cost to hire at receiving base	none recognized as BRAC cost	$4,000 per new employee	$1,109 per new employee
Program planning	COBRA calculated (increase production prior to move but this cost assumed to net to O over time)	COBRA calculated plus cost to run parallel lines and interim contract support	COBRA calculated
amount of equipment moved	based on estimate of receiver	all moved or repurchased	based on requirments of receiver and historical data
equipment transportation costs	COBRA calculated based on tonnage	estimated as 4% of equipment acquisition cost	COBRA calculated based on tonage
equipment excess cost	not recognized as BRAC cost assume costs to disposes equals proceeds	recognize cost of sending equip to excess	none recognized as BRAC cost equipment disposed of in place, purchaser responsible for removal of equipment
supply transportation costs	based on tonnage	estimated as 1% of inventory value	based on short tons
procurement of new equipment	scenerio specific unique cost	five percent of equipment at loosing base is repurchased	scenario driven, some equip may be claimed
Administrative MilCon	rehab admin space	new and rehab administrative space	scenario driven new requirements based on standard sq ft factors
MilCon avoidance	savings from all projects programmed at losing base with complete closure	none recognized	savings from all projects budgeted for losing base
Base Conversion Agency Costs	COBRA calculation	COBRA calculation plus $30 M/ base closed	COBRA calculation

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FACSIMILE MESSAGE
FROM SAF/IAP

Pentagon Rm 5A334, Wash, D.C. 20330-1080
DSN 227-0822 FAX DSN 223-8891
COMM (703) 697-0822 FAX COMM (703) 693-8891

Total # of pages including cover sheet: 6

DESTINATION FAX: 696-0550
DESTINATION PH:

DATE:

TO:
ATTN: Ann Reese

SUBJECT:
Per your Req.

STAFF SUMMARY SHEET

	TO	ACTION	SIGNATURE (Surname), GRADE AND DATE		TO	ACTION	SIGNATURE (Surname), GRADE AND DATE
1	SAF/IA	Appr	Burr MGEN 10 FEB	6	AF/CV	Appr	Moorman 2/17
2	AF/LG	Appr	[signature] (13)	7			
3	AF/XO	Coord	JOSEPH W. RALSTON, Lt Gen, USAF [signature] 15	8			
4	AF/PE	Coord	see attached Heflebower/14Feb95	9			
5				10			

	SURNAME OF ACTION	PHONE	TYPIST'S INITIALS	SUSPENSE DATE
Lt Col Eriksen Maj Humphrey	SAF/IAP AF/LG	7-0822 7-0311	je	15 Feb 95

SUBJECT: USAF Support for Australian F-111s After USAF F-111 Retirement

DATE: 10 Feb 95

SUMMARY

1. PURPOSE: Background paper at Tab 2 responds to Air Force Council tasking (Tab 1) to provide an assessment of the support requirements for the Royal Australian Air Force (RAAF) F-111 fleet following retirement of the USAF F-111.

2. SUMMARY: The USAF will continue to assist Australia in the support of the RAAF F-111 fleet through the orderly transfer of system program management functions currently performed at the Sacramento Air Logistics Center (ALC) to the San Antonio ALC Proven Aircraft Directorate. Representatives from the ALCs have established milestones to complete transfer of all support functions at the retirement of the last F/EF-111 in Sep 97. Most significant in this time line is the publication of the Program Management Responsibility Transfer (PMRT) document in Nov 95. This document will identify all support items required by the RAAF and establish responsibilities and deadlines for completion of the items. Based on meetings between the two ALCs and the RAAF, the following areas will require the greatest management effort:

- Access to Spares: As the USAF reduces F-111 flying hours, Item Managers will reduce spare part stocks and dispose of equipment. To insure the spares are captured prior to reaching disposal channels, the RAAF will attempt to purchase nearly all F-111 related spares and equipment via Foreign Military Sales.
- Engineering Technical Data: The RAAF relies on the USAF for a variety of engineering services. The RAAF is evaluating which of these services to take in-house.
- Systems Support: The RAAF will request continued USAF support for two F-111 systems, the TF-30 engine and Pave Tack pod.
- Cold Proof Load Testing (CPLT): The RAAF F-111s require ~~one~~ two periods of testing between ~~2008~~ 1998 and 2015. The RAAF may purchase and relocate the CPLT facility or lease the facility from the USAF. Burr 10 Feb
- Crew Module CAD/PAD: The RAAF will have to purchase F-111 crew module pyrotechnics without the benefit of joint USAF/RAAF economies of scale.
- Stores Clearance and Miscellaneous Projects: The RAAF is highly dependent on the USAF for these services. The RAAF will request access to historical data to take the functions in-house or request the USAF continue to provide the services.
- Contracts: The RAAF will request information regarding past and current F-111 contracts.

3. RECOMMENDATION: AF/CV approve assessment.

Robert P. Manke

ROBERT P. MANKE, Col, USAF
Chief, Pacific Division
Deputy Under Secretary, Int'l Affairs
7-0822

RONALD L. ORR
Associate Director
Directorate of Maintenance
697-2202

2 Tabs
1. AF/CV tasker
2 . Preliminary Assessment of Logistical Support for the Australian F-111 Fleet After Retirement of USAF F-111

CVAE Case 94-07698

AF FORM 1768, SEP 84 (EF-V2) (PerFORM PRO) PREVIOUS EDITION WILL BE USED.

DEPARTMENT OF THE AIR FORCE
OFFICE OF THE CHIEF OF STAFF
WASHINGTON DC

13 Dec 94

MEMORANDUM FOR AF/XO, LG, DP, SAF/IA

SUBJECT: F-111 Weapon System Program Assessment Review (WSPAR)

1. During the F-111 WSPAR on 13 Dec 94, AF/CV directed the following taskings:

a. Prepare a report for the Air Force Council to outline a plan for accelerating the retirement of the F-111 weapon system. The document should include issues such as flying hours, maintainability, manpower/personnel, FMS, F-111 storage, and replacement MDS timeline. Additionally, assess the impact on both Cannon AFB and Sacramento ALC with conversion timeline and follow-on support.

OPR: AF/XO AF/LG OCR: SAF/IA AF/DP AF/PE

Suspense: **15 Feb 95**

b. Assess and report to the Air Force Council the support requirements for the Australian F-111 fleet after the retirement of the USAF F-111 fleet. Consider options that include various levels of support based upon customer needs and remaining infrastructure, i.e. cold proof load test facility, supply pipeline, CAD/PAD (pyro) support, and PAVE TACK system support.

OPR: SAF/IA AF/LG OCR: AF/XO AF/PE

Suspense: **15 Feb 95**

2. POC is Major Shepherd, AF/CVS, 7-0195.

3. Reply to AF/CV with a copy to AF/CVS.

JAMES A. FAIN, Jr.
Lieutenant General, USAF
Assistant Vice of Staff

Preliminary Assessment of Logistical Support
for the
Royal Australian Air Force F-111
After Retirement of USAF F-111 Fleet

1. The USAF will continue to provide logistical support for the Royal Australian Air Force (RAAF) F-111 fleet after retirement of the USAF F-111. This support will take place through an orderly transfer of system program management functions from the Sacramento Air Logistics Center (SM-ALC) to the Proven Aircraft Directorate of the San Antonio ALC (SA-ALC). The Proven Aircraft Directorate is the USAF expert in support of retired USAF aircraft which are still part of foreign air force inventories. The Directorate currently manages 27 aircraft types.

2. Representatives from the Sacramento and San Antonio ALCs outlined a strategy in Jan 95 to transfer management responsibility to SA-ALC. The representatives established the following timeline and milestones.

15 Mar 95 - SM-ALC System Program Directorate and SA-ALC Proven Aircraft Directorate complete draft MOU and budgets. The MOU will establish milestones and assign responsibility for transition tasks. The budgets will request the funds necessary to accomplish the transition between ALCs until the Program Management Responsibility Transfer document is published in Nov 95.

31 May 95 - RAAF submits list of tasks for which they require continued USAF assistance.
- MOU which establishes transition responsibilities of SM and SA-ALCs implemented.

1 Nov 95 - SM and SA-ALCs publish and implement F-111 Weapon System Support Plan and Program Management Responsibility Transfer (PMRT) documents.

30 Sep 97 - Transition to SA-ALC complete at retirement of last F/EF-111.

3. The SM and SA-ALCs, in concert with the RAAF, have identified nine support areas which require the greatest management effort during the transition.

a. RAAF visibility of excess USAF spares during drawn down. The USAF will soon begin to reduce stocks of spare parts as the F-111 flying hour program and fleet size are decreased. The USAF will also begin disposal of F-111 ground support equipment, test equipment, consumables, etc. The RAAF has experienced limited success in capturing spares in Defense Reutilization Management Office (disposal) auctions in the past so they will request access to the spares prior to entering the disposal pipeline. The RAAF is evaluating using a blanket FMS case to purchase all F-111 related spares.

b. Loss of engineering technical data. The RAAF relies on the USAF for the provision of engineering advice, supply of and access to USAF F-111 and related technical data and engineering reports, access to drawings and software data, and publication amendments to Technical Orders. The loss of this data will affect the RAAF's ability to support the F-111. The RAAF is evaluating this issue to determine which areas they will require continued USAF support.

c. Systems Support. Retirement of USAF F-111s will result in loss of expertise, infrastructure, and data to support major aircraft components, most importantly the TF-30 engine and the Pave Tack targeting pod. The RAAF will likely request continued USAF support for these systems.

d. **Cold Proof Load Testing.** The CPLT facility is a Sacramento-based, one-of-a-kind facility which tests F-111 structural integrity under extreme conditions. The aircraft are tested every 2000 flying hours. With the planned RAAF F-111 retirement in 2020, the RAAF fleet will require two periods of CPLT, 1998 to 2005 and 2008 to 2015. The RAAF can continue Cold Proof Load Testing by purchasing the current facility's equipment or leasing the existing facility from the USAF.

e. Crew Module CAD/PAD. The RAAF will have to purchase F-111 crew module explosives without the benefit of joint USAF/RAAF economies of scale. Although periodic change out of CAD/PAD is accomplished at SM ALC, the RAAF will accomplish future installation in Australia.

f. Stores Clearance. The RAAF will have to certify new weapons for their F-111s independently. The RAAF will request access to USAF F-111 stores clearance data and reports, including granted waivers in order to establish a RAAF database for future new weapon development. The RAAF will also request access to F-111 OT&E and DT&E data and F-111 instrumented clearance equipment.

g. Contracts. The RAAF will require information concerning existing contracts which support the USAF F-111 in order to build a strategy for direct negotiation with contractors. The RAAF is interested in information such as contractor performance history, current man-hour rates, and contractor evaluation criteria.

h. On-going project concerns.

1) Avionics Update Project (AUP). The RAAF had planned to use USAF maintenance for repair of a number of AUP Line Replaceable Units (LRUs). The RAAF is researching the advantages of commercial repair contract versus USAF in-house support.

2) F-111G. The completion of the OFP Block 2 upgrade is essential to the RAAF. The RAAF will request the USAF not suspend this project.

3) F-111 Automatic Test Equipment (ATE) and Simulator Projects. The RAAF is highly dependent on USAF technical advice and support data for these programs.

4. The RAAF has expressed a general concern about the loss of F-111 expertise during the transfer process and the unknown increases costs when the San Antonio Proven Aircraft Directorate takes sole responsibility for RAAF F-111 support.

JOHN ERIKSEN, Lt Col, USAF
Country Director, Australia
Dep Under Secretary, Int'l Affairs

Document Separator

DEPARTMENT OF THE AIR FORCE

HEADQUARTERS SACRAMENTO AIR LOGISTICS CENTER (AFMC)
McCLELLAN AIR FORCE BASE, CALIFORNIA

MEMORANDUM FOR DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION
ATTENTION: MS. ANN REESE
1700 N Moore St, Ste 1425
Arlington VA 22209

26 MAY 1995

FROM: SM-ALC/LH
5049 Dudley Blvd
McClellan AFB CA 95652-1028

SUBJECT: Ground Communications-Electronics (C-E) Information (BRAC Tour, 22 May 95)

1. We prepared the attached folder in response to your comment at the end of Monday's tour, "that all this workload could be transferred to Tobyhanna." It is our intention that this will provide you with a better picture of unique capabilities between the two centers.

2. We believe the JCSG-DM report underscores the following:

a. Cost-per-hour figures support SM-ALC as the best value for ground C-E.

b. Depicts our technological leadership in area of functional value (Tab A). (Note: Our "electronic warfare" work is under "radar" stock class, therefore, not comparable to the JCSG definition).

c. The JCSG functional capacity data analysis supports our ability to absorb the total TOAD ground C-E workload.

3. We have included (Tabs C, D, and E) additional information on our extensive antenna testing capabilities, capabilities not found at TOAD or elsewhere in the Department of Defense.

4. Please advise if we can provide additional assistance or call M. Greg Schellhase, (916) 643-3906.

FOR THE COMMANDER

MICHAEL D. FLYNN, Col, USAF
Director
Space & C3I Systems

Attachment:
Functional Value Analysis

FUNCTIONAL VALUE ANALYSIS

OF THE

CROSS-SERVICING CAPACITIES AND CAPABILITIES

FOR

GROUND COMMUNICATIONS-ELECTRONICS DEPOT MAINTENANCE

BY

INDUSTRIAL OPERATIONS DIVISION
SPACE AND C3I SYSTEMS DIRECTORATE
MCCLELLAN AFB

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JSCG-DM STUDY FUNCTIONAL VALUE SUMMARY (PGS 1-2)	TAB H

TAB

A

FUNCTIONAL VALUE DATA ANALYSIS

(Information from the JCSG-DM REPORT, 28 NOV. 94, unless otherwise noted)

FUNCTIONAL VALUE SUMMARY FOR GROUND COMMUNICATIONS-ELECTRONICS

	McCLELLAN		TOAD	
	points	ranking	points	ranking
RADIO	47.0	1	45	3
RADAR	56.5	1	43	4
NAVIGATIONAL AIDS	52.5	1	44	3
SATELLITE CONTROL/SENSORS	65.5	1	19	2
WIRE	47.5	2	41	3
ELECTRO-OPTICS/NIGHT VISION	46.5	2	20	6
ELECTRONIC WARFARE	7.5	4	57.5	1
TACTICAL SYSTEMS SOFTWARE	44.0	4	42.5	5
SUPPORT EQUIPMENT SOFTWARE	49.5	3	NONE	NONE
TOTAL	372.5		269.5	

BUDGET LABOR HOUR COST ANALYSIS

	MCCLELLAN	TOAD
BUDGETED LABOR HOUR COST	$65.27*	$66.65**
PROGRAMMED WORKLOAD AT TOAD	1641800	1641800
COST TO PERFORM	$107,160,290.00	$109,425,970.00

ECONOMIC IMPACT: CONSOLIDATION OF THE GCE WORKLOAD FROM TOAD TO MCCLELLAN WOULD RESULT IN A NET SAVINGS OF $2,265,684.00

*source: GO35A-HF3-MM-8BV dated 2/94, for GCE workload only

**source: DOD DEPOT MAINTENANCE OPERATIONS INDICATORS REPORT FOR 2/94 for GCE workload only

FUNCTIONAL CAPACITY DATA ANALYSIS

(all figures are in manhours from the JCSG-DM Report, 28 Nov. 94, unless otherwise noted)

Programmed GCE Workload	**MCCLELLAN**	**1221950**	**MCCLELLAN max GCE Capacity**	**3052181**
	TOAD	**1641800**	**Consolidated GCE manhours**	**2863759**
	TOTAL	**2,863,759**	**DIFFERENCE**	**188422**

TOTAL CONSOLIDATION OF GCE WORKLOAD REPRESENTS JUST 93% OF GCE CAPACITY AT MCCLELLAN

CORE WORKLOAD & TECHNOLOGY CAPABILITIES MATRIX

	MCCLELLAN	TOAD
RADAR	YES	YES*
RADIO	YES	YES
WIRE	YES	YES
ELECTRONIC WARFARE	YES	YES
NAVIGATIONAL AIDS	YES	YES
ELECTRO-OPTICS/NIGHT VISION	YES	NO
SATELLITE CONTROL/SENSORS	YES	NO
RADAR ANTENNA TESTING	YES	NO
E/O NIGHT VISION TEST FIXTURES	YES	NO
non-GCE FACILITIES AVAILABLE FOR EXPANSION	YES	NO
TACTICAL SYSTEMS SOFTWARE	YES	YES**
SUPPORT EQUIPMENT SOFTWARE	YES	NO

*** Commerce Business Daily, 29 June 94, solicitation issued by U.S. ARMY CECOM: "The requirements for contractor support is due to the lack of adequate radar range facilities at Tobyhanna Army Depot (TOAD)".**

**** MCCLELLAN'S tactical software capacity exceeds TOAD by 398%. This lack of capacity at TOAD would necessitate duplicate facilities maintained at MCCLELLAN, in order to ensure adequate software support.**

TAB

B

EXECUTIVE SUMMARY

The economies of scale sought by interservicing can only be achieved through functional and economic analysis of a depots existing capability and capacity for a **specific** commodity group and the indentured categories. Data for the Ground and Shipboard Communications and Electronic Equipment Commodity Group (categories 7A-H) is recorded in the Joint Cross Service Group for Depot Maintenance (JCSG-DM) study. This data readily lends itself to accurate, categorical Ground Communications-Electronics (GCE) interservicing/consolidation functional analysis. By using the **specific** data for each GCE category found in this study pertinent to an individual depots capacity and capability, an accurate picture is drawn of that individual depots strengths and weaknesses in comparison to other depots for GCE depot maintenance.

In the Ground and Shipboard Communications and Electronic Equipment Commodity Group (categories 7A-H), the JCSG-DM study rated McClellan higher than the 11 other DOD depots presently performing depot maintenance for GCE. Results from data gathered from all DOD depots show that McClellan received the highest rating in Radar, Radio, Navigational Aids, and Satellite Control/Sensors. McClellan was ranked second highest in Wire and Electron Optics/Night Vision, and fourth in Electronic Warfare for an overall numeric value of 323 (GCE only). Although Tobyhanna Army Depot (TOAD) is the only other depot with programmed workload in all categories, it garnered only 1 high rating, and was rated as low as sixth (Electro-optics/Night Vision), with an overall numeric value of 269.5 (GCE only). More importantly, this study reveals that McClellan is the only DOD facility with CORE capability in all GCE categories, with TOAD retaining NO CORE capability for either Satellite Control/Sensors or Electro-optics/Night Vision. Clearly, the only depot that has the technology in place to support interservicing of all GCE is McClellan.

Today's complex GCE systems require software to operate, and this highly complex circuitry requires automated test equipment at the depot for accurate diagnostics and quick turn around times. In the JCSG-DM Software Commodity Group are the categories of Tactical Systems Software and Support Equipment Software. Of the 11 depots that perform various levels of GCE maintenance, 7 also have workload in the software commodity group. Here, McClellan is ranked 4th in tactical system software, and TOAD is ranked 5th. However, McClellan's capacity for tactical systems software exceeds TOAD by **398%**, indicating that if TOAD constructed the necessary buildings (high bays) for tactical radar overhaul, they would still be non-compliant, as their low software capacity could not support the increased and diverse demand for software support. This would require duplicate facilities at the Inventory Control Point, to ensure adequate software support.

Another example of McClellan keeping pace with depot maintenance technology is in support equipment software. McClellan has become a leader in automatic test equipment test program set development, and is ranked 3rd in the support equipment software category. In this commodity (group 12.b), TOAD received **no ranking,** as TOAD has **no capacity or CORE identified** for support equipment software.

An indicator that McClellan is the ideal interservicing GCE depot is the fact that McClellan won 5 out of 9 competitions for Army workloads, which equates to 75% of the dollar value of awarded Sacramento Army Depot workload, with cost as the driving factor. According to the DOD Depot Maintenance Operation Indicator Report for the 2nd quarter of 94 (most recent data available for McClellan and TOAD, the only two depots with workload in all categories), TOAD's budgeted hourly rate (the rate given to the customer so they may plan accordingly) was $66.55. McClellans rate for GCE depot maintenance during this time frame was $65.27 (source: GO35A-HF3-MM-8BV, for GCE workload only). This difference of $1.38 an hour equates to a savings of $2,265,684.00 by performing TOADS workload at McClellan. Bring to this the fact that only McClellan has a technological CORE for all categories, makes McClellan the leader in economic value for GCE depot maintenance.

As shown by the results of the JCSG-DM questionnaires for CORE, Maximum capacity and capability (Table 13.1.a), TOAD has NO CORE capability for commodity groups 7E, Electro-optics/Night Vision or 7G, Satellite Control/Sensors. These categories are extremely important to supporting regional conflicts, as seen in Desert Storm: The Defense Support Program and the Global Positioning System (FAD 1-1 satellite control sensor systems) where key to our success, and our "night strike" capability led to an early and decisive victory. As of today, only McClellan has the CORE resources in place to ensure future successes, as well a funded workload **above CORE level requirements** to maintain these resources. As of today, TOAD's funded workload is below CORE level, seriously jeopardizing its ability to support the resources necessary for interservicing.

As indicated, only McClellan can support the GCE workloads presently at McClellan, and capable of the additional TOAD GCE workload, as well. What this documentation doesn't readily indicate is that McClellans technological base reduces dependence on outside resources. In the Commerce Business Daily, dated 29 June 94, the U.S. ARMY CECOM issues a solicitation for depot services of a Doppler navigational system because "***The requirement for contractor support is due to the lack of adequate radar range facilities at Tobyhanna Army Depot (TOAD)".*** Since becoming the Technological Repair Center for C3I in 1974, McClellan has made the capital investments necessary to keep pace with technology, with 6 antenna test ranges available for radar technologies. As such, the need for contractor support would be reduced by consolidating GCE workload at McClellan, supporting the congressional mandate of the "60/40" split, and ensuring a technological CORE for all GCE commodity categories, and the software it depends on for either depot maintenance or real time operation.

TAB

C

ANTENNA TESTING AT MCCLELLAN AFB

Excerpt for Commerce Business Daily, 29 JUNE 1994: "The requirement for contractor support is due to the lack of adequate radar range repair facilities at Tobyhanna Army Depot (TOAD)"... US ARMY CECOM, Command, Control, Communications and Intelligence (C3I) Acquisition Center, Ft Monmouth NJ.

McClellan presently has six ranges specifically for radar antenna testing (see photographs)

Antenna testing at McClellan is just part of the largest radar depot in DoD, with a programmed workload three times greater than TOAD. (Source: JCSG-DM, 28 Nov 94).

McClellan capable of supporting antenna testing for all types of wave propagation technologies, from parabolic reflector through phased array.

McClellan diverse test facilities range include anechoic test chambers, engineering/design parametic test ranges, near field, low power test ranges, and far field testing for antenna and radar system accuracy.

TAB

D

NARRATIVE FOR PICTURES

1. **FPS-117 LOGSET**

FPS-117, Surveillance radar used throughout world. Mock-up/test range used to test hardware and software changes. Logset is the only facility available for engineering in the world.

2. **TEST RANGE FOR US ARMY FIREFINDER RADARS**

Used as an anechoic chamber to test each individual antenna module and as test pad for field test to determine overall radar accuracy.

3. **NEAR-FIELD TEST RANGE/ANECHOIC CHAMBER**

To evaluate receive/transmission properties of antennas.

4. **PRECISION APPROACH RADAR ANTENNA TEST TOWER**

Far-field test range receives signals from across runway for operational certification of FAA and Air Force radars.

5. **TEST PAD**

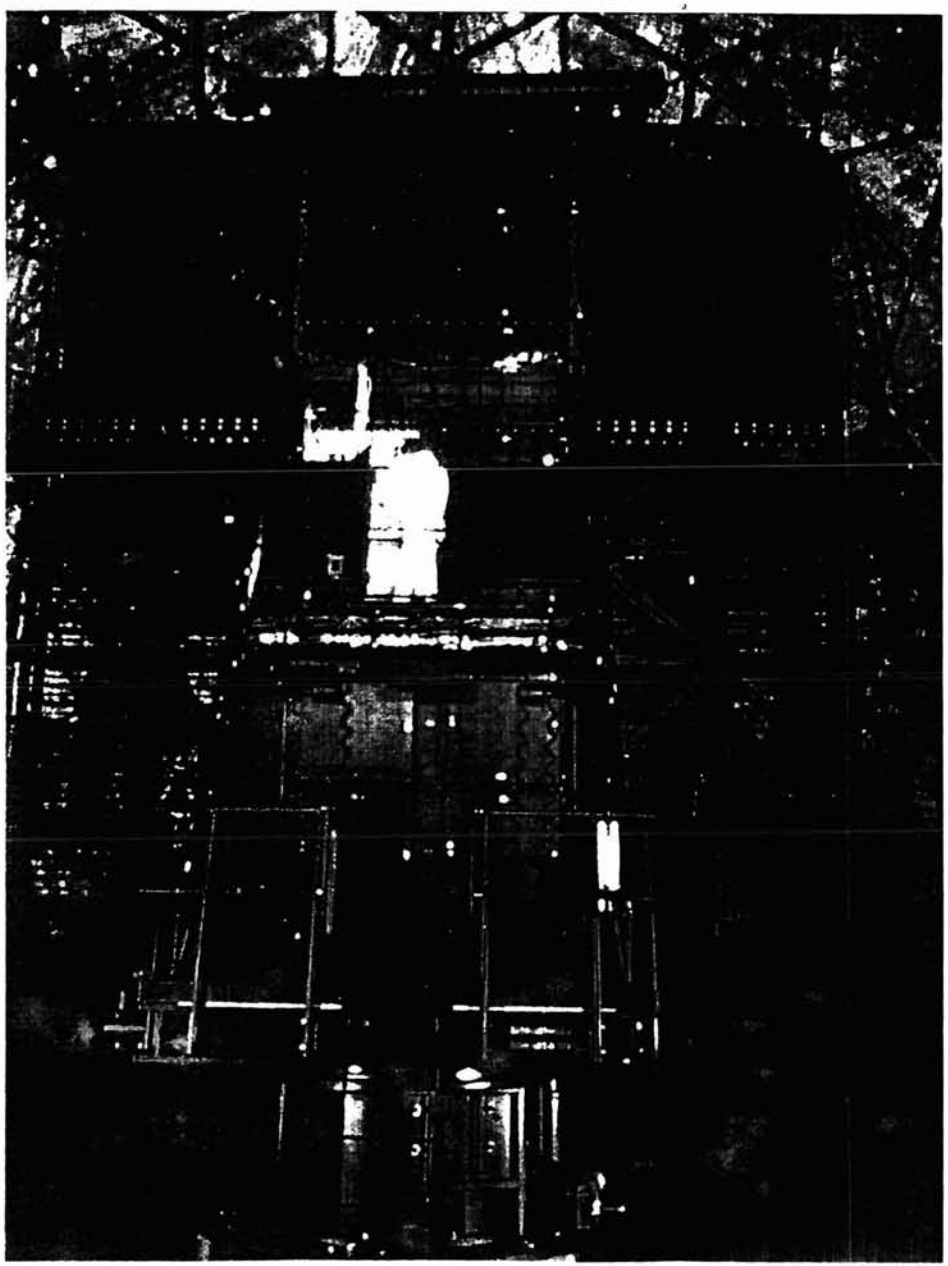
Used for all types of tactical radars and electronic warfare/range threat radars.

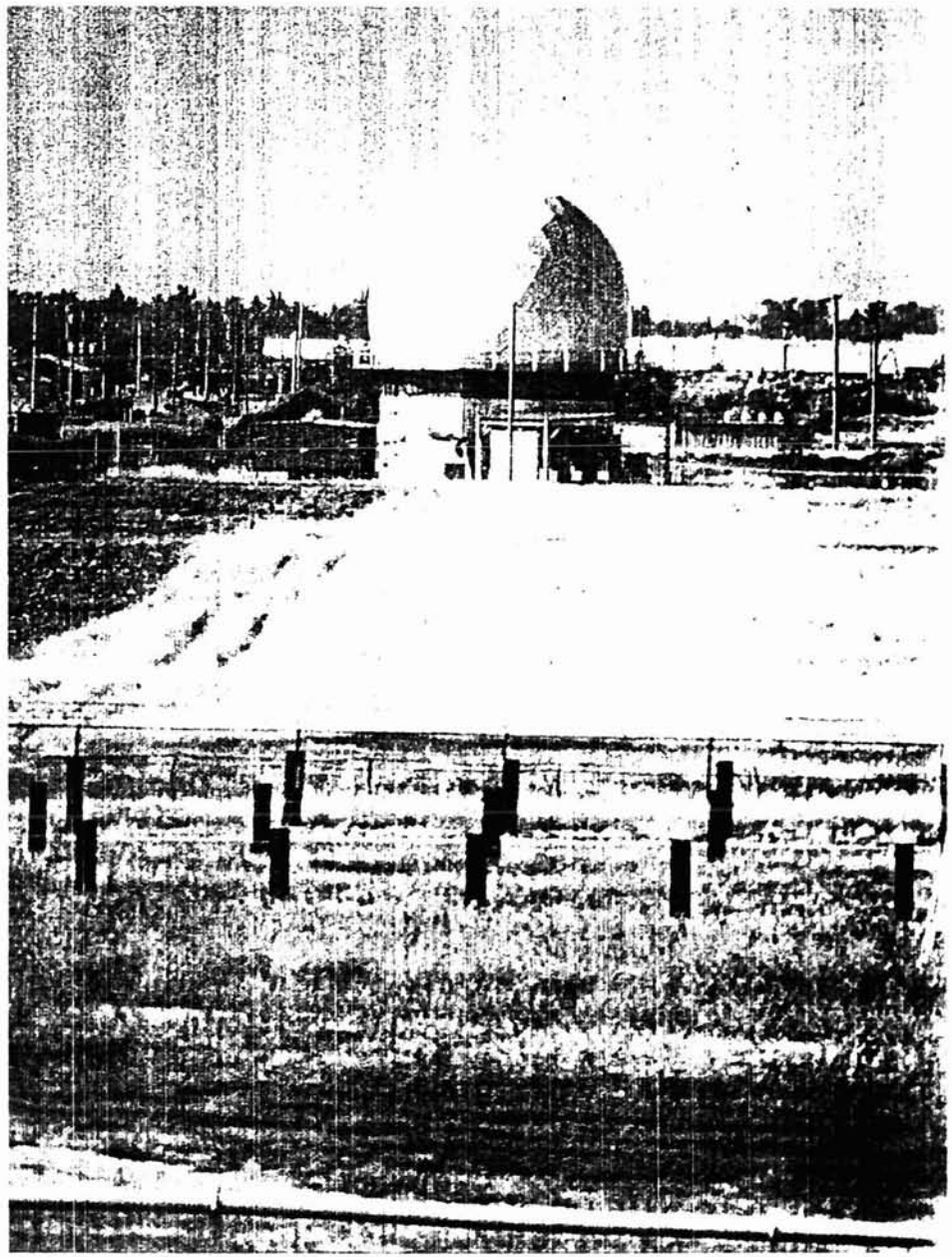
6. **NOT PICTURED:** TACAN anechoic test chamber in Building 251, used to test and ensure accuracy of Air Force and Navy TACAN antennas.

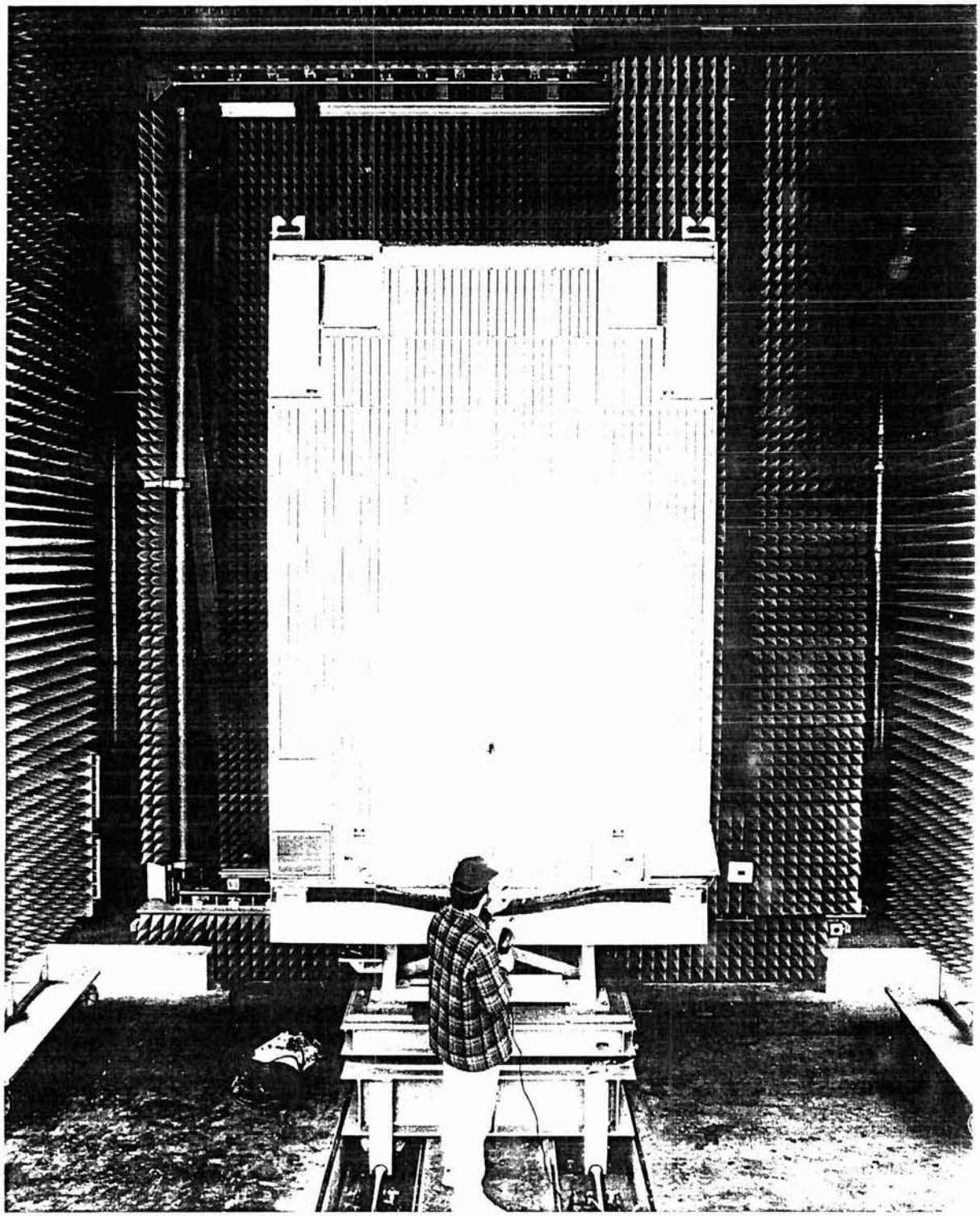
The antenna test capabilities for ground communication-electronics at McClellan Air Force Base are not duplicated at any single location with the Department of Defense or industry.

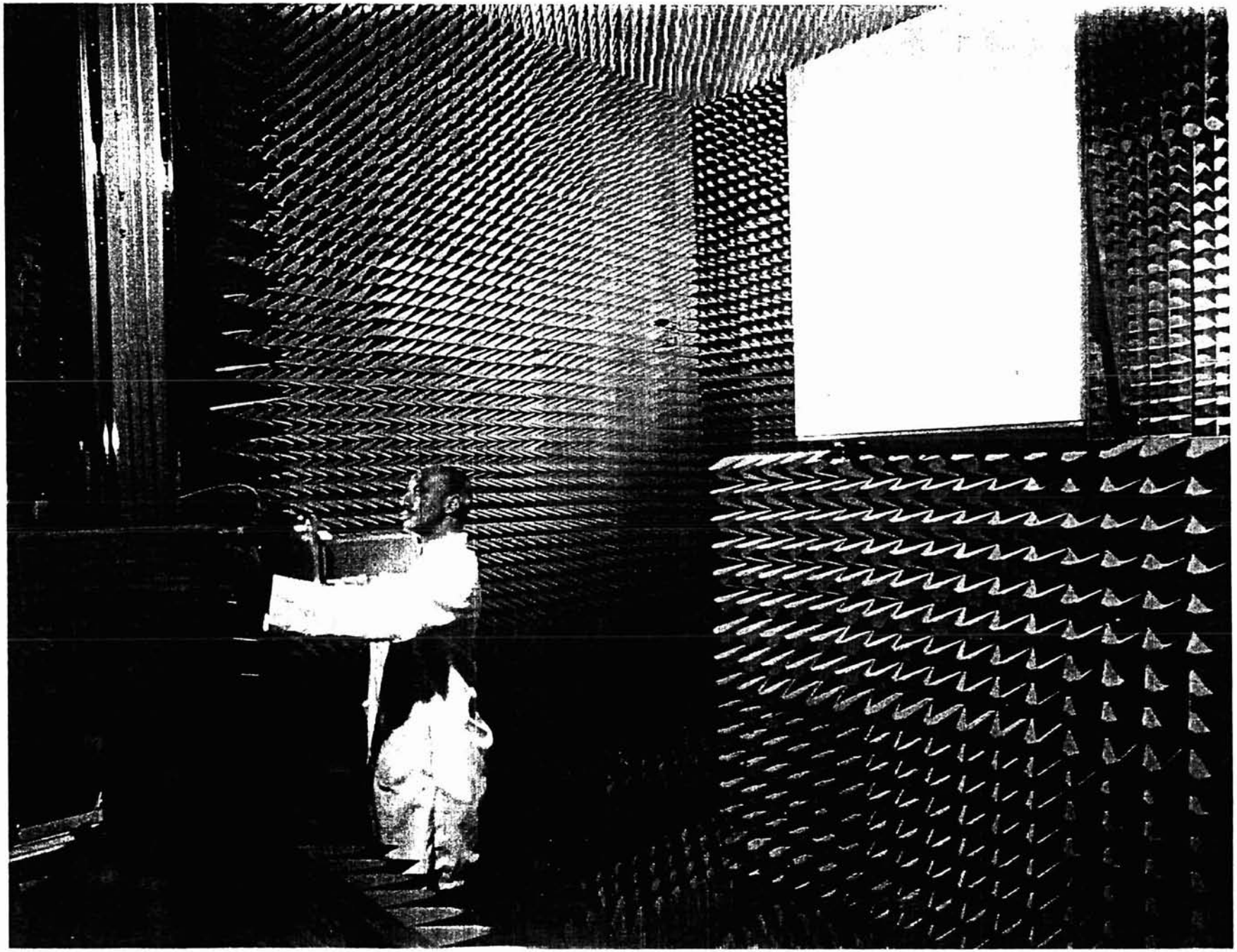
TAB

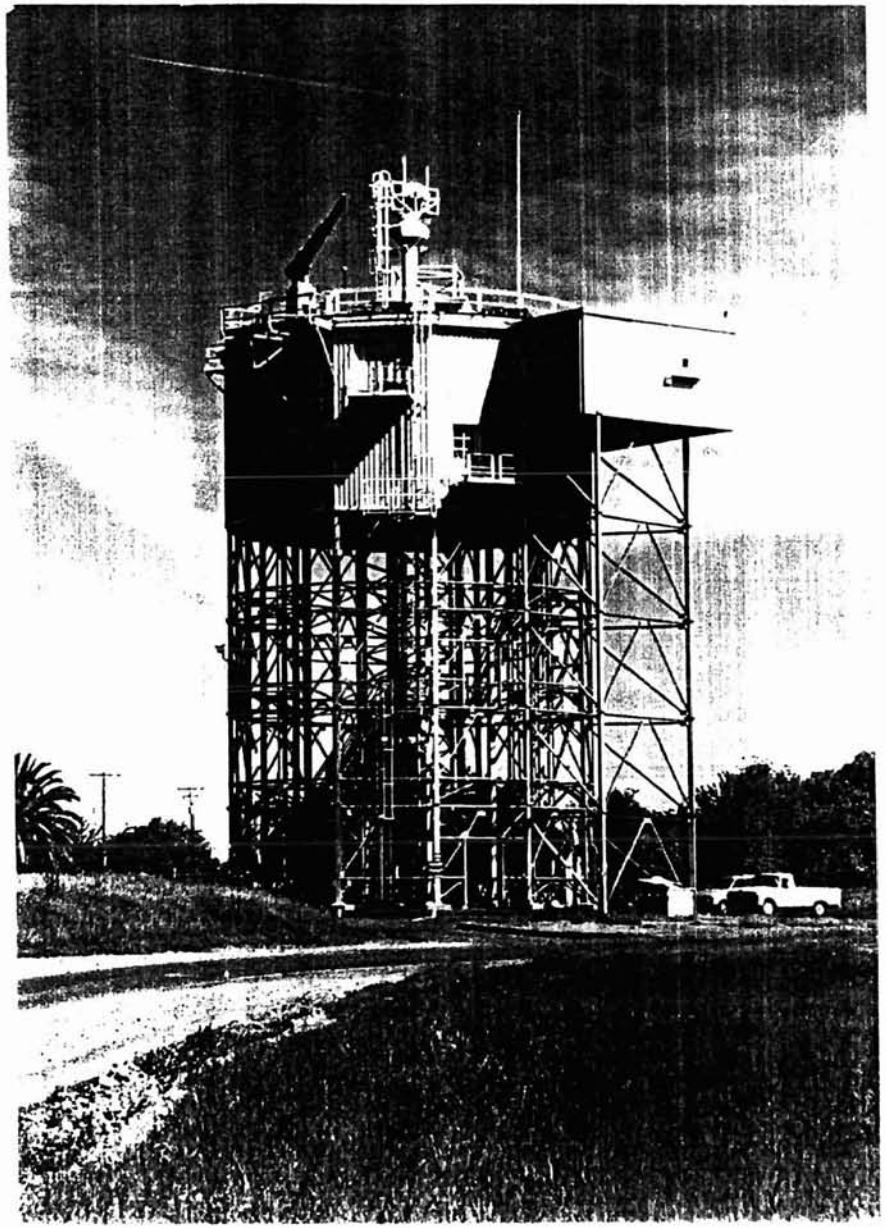
E

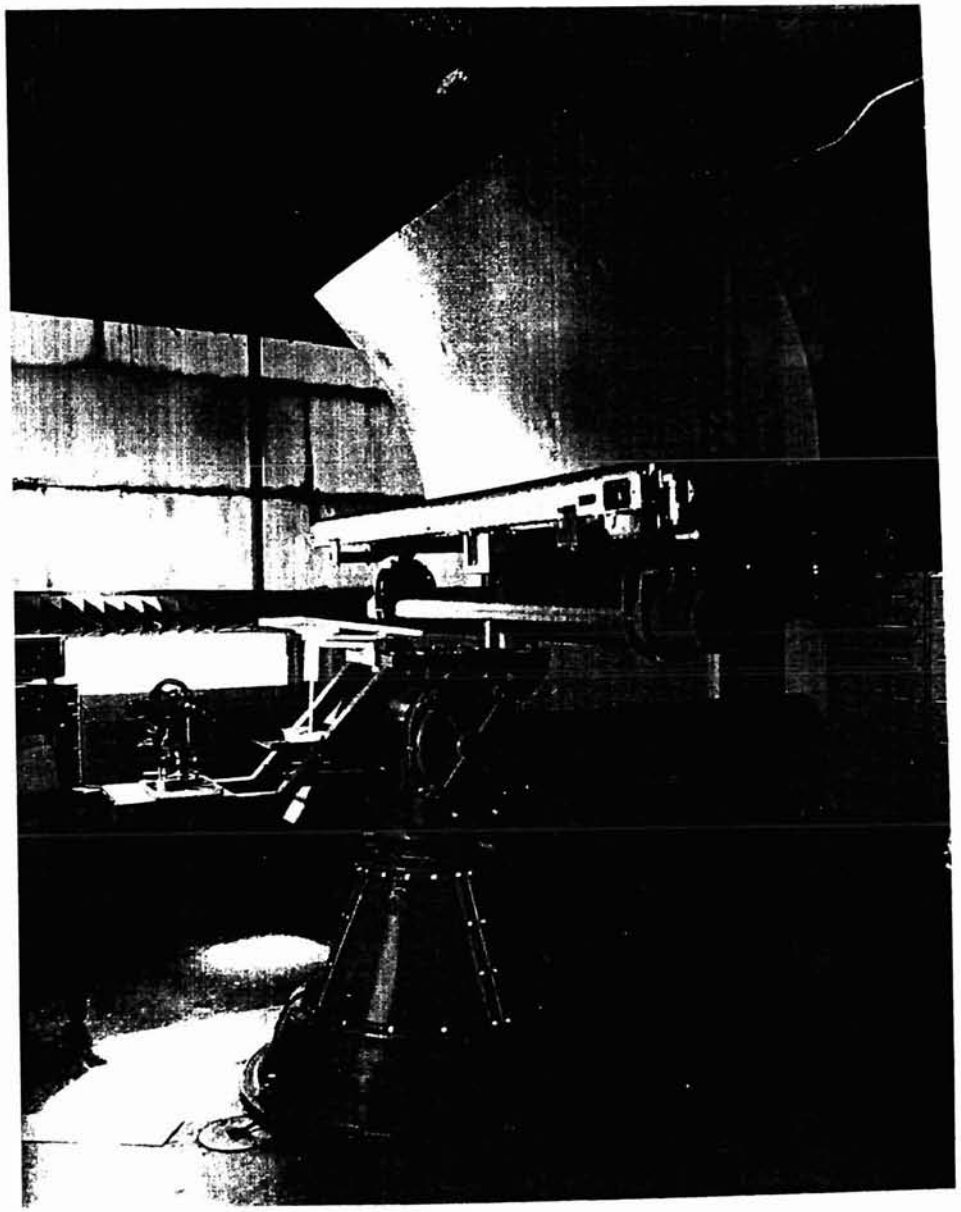












TAB

F

Sheet1

Total Current Capacity (Actuals)

	Table 1.1 Cap Index			Table 1.3 Max Cap		
	SM-ALC	TOAD	SA-ALC	SM-ALC	TOAD	SA-ALC
1 AIRCRAFT AIR FRAME						
1C1 TRANS/TNKR/BOMB	812471		1562600	963790		3250896
1C3 LIGHT COMBAT	1448159			1487959		
1C4 TRAINER			265800			795123
1D OTHER				162332		
TOTAL						
2 AIRCRAFT COMPONENTS						
2B AIRCRAFT STRUCTURES	227364		93800	596138		161844
2C HYDRAULIC/PNEUMATIC	486371		3020	778016		3672
2D INSTRUMENTS	279113		12280	529839		24230
2E LANDING GEAR			7400			15085
2F AVIATION ORDNANCE						
2G AVIONICS/ELECTRIC	451822	390000	112080	818920	774000	141768
2H APU			294980			558624
2I OTHER			250800			442575
2J MANUFACTURING/FABRICATION	566477		368940	821848		1057660
TOTAL						
3A ENGINES (GTEs) - Acft			4951320			7317828
4A MISSILES- STRATEGIC-NUCLEAR			107100			199618
4B TAC MISSILES		93000			129000	
7 GRND & SHIP COM & ELEC						
7A RADAR	708742	110000		1192080	186000	
7B RADIO	337270	1036000		740991	1757000	
7C WIRE	211625	311000		230614	527000	
7D EW		591000		8414	1003000	
7E NAVIGATION AIDS	276544	19000		506941	33000	
7F ELEC-OPTIC/NIGHT VISION	165740	5000		188649	8000	
7G SATELLITE CONT/SENSORS	171271	242000		184492	410000	
TOTAL	1371196	2296900		3052191	3924000	
10 GROUND GEN PURPOSE						
10C MUNITIONS/ORDNANCE			2780			5544
10D GROUND GENERATORS	99294			108676		
10E OTHER	64763	320000		64763	444000	
TOTAL						
12 SOFTWARE						
12A TACTICAL SYSTEMS	398483	10000	20000	450314	16000	25620
12B SUPPORT EQUIPMENT	326032		185420	405071		241179
TOTAL						
13C SPEC INT		505000	660580		622000	978486
14 OTHER	36769	1001000		36898	1697000	
TOTAL	7068310	4633000	8898900	10276745	7606000	15219752

TAB

G

	Table 3.1.b Prog Wkld			Table 12.1.a Service Req'd Core			Table 12.2.a Core Cap retained for Other Services			Ser
	SM-ALC	TOAD	SA-ALC	SM-ALC	TOAD	SA-ALC	SM-ALC	TOAD	SA-ALC	SM-ALC
										N/A
	604288.4		933914.6	506704.5		832605				
	1120528			850233.3						
			194439.2							
	166496.2		54997	237645		90060				
	379537.4		2776.8	404947.8		7702				
	204365.8		6800.2	296755.5		2514				
			4409.8			6503				
						8				
	354218.4	481800	93128	394792.3	33000	28482				
			160545.8			102322				
			179028.8	697.75		181503				
	418832		144615	639836		154730				
			3548334			2552505			7025	
			99803.8			50587				
		86800			76000					
A	456598	143000		397658.8	28000		105			
B	219816.2	672800		212151	1263000			6000		
C	137195.8	148800		5250.5	185000					
D	0	505000		3901	371000			14000		
E	180482.8	16000		173626.5	8000		4675			
F	116789.8	4000					127071			
G	111067	152200		38461.25						
AL	1221950	1641800		831049	1855000		131851	20000		
							20,000			
							151,851			
			2686.4							
	89394.6			59193.25			10980			
	62774	377400								
	306982.6	8000		262034.8	30000	17337				
	251166		183259.6	214655		281273				
		237600	465673		268000	113385				
	30543	772400		466	512000					
	5211076	3605800	6074412	4699010	2774000	4421516	142831	20000	7025	N/A

2

able 12.3.a					
ice-Controlled		Table 13.1.a			
ore (Title 10)		Total Core Workloads			
TOAD	SA-ALC	SM-ALC	TOAD	SA-ALC	
	N/A				
		441201		801836	
		867088			
				25538.75	
		163738		17697.25	
		356703		2574.25	
		200980.3		5771.25	
				4164	
33000		340503	273250	33244	
				108636.3	
				92278	
		419718.8		119870	
				2641638	
				60027.25	
			71000		
2516000					
		400939	70000		
		177156	680250		
		100150.8	137750		
			371000		
		164644	8000		
		115134.3			
		32271			
		990294	1267000		
				1576.75	
		61624			
		210729	8000	15701.5	
		183656		153723	
225000			211000	405222.3	
		399	512000		
2774000	N/A	4236635	2342250	4489498	

3

TAB

H

	Air Logistics Centers					Army Depots					Naval Av Depots			Naval Shipyards					Others				
Commodity Group	OC	OO	SA	SM	WR	TOAD	CCAD	ANAD	RRAD	LEAD	North Island	Cherry Pt	Jacksonville	Norfolk	Lng Beach	Pearl Hrbr	Puget Snd	Portsmouth	MCLB-A	MCLB-B	Crane	Keyport	Louisville
1 Aircraft Air Frame																							
1a Rotary	0	0	0	0	0		64.5					57.5											
1b Vistol	0	0	0	0	0							70											
1c Fixed Wing	0	0	0	0	0																		
1c1 Trans/Tnkr/Bomb	64	39	55	27.5	56							20											
1c2 Comm And Cont	71	0	0	0	0																		
1c3 Light Combat	0	51.5	0	54	40.5						45	29.5	48										
1c4 Admin/Training	0	0	0	0	0						17.5												
1d Other	0	0	0	0	0						48.5	20	40.5										
2 Aircraft Components																							
2a Dynamic Components	0	0	0	0	0		59				26	64.5											
2b Aircraft Structures	45	35	28	30.5	37		54				35.5	29	46.5										
2c Hydraulic/Pneumatic	39	19	37	51.5	10		52				25.5	48	27.5										
2d Instruments	44	36	38	35.5	39		54				30.5	28	25.5										
2e Landing Gear	0	54	29	0	10		46				28.5	25	29.5										
2f Ordanance	20	49.5	10	0	10		10				27	26.5	56										
2g Avionics/Electric	27	28	30	37.5	50	33	30		18			26	44.5								40.5		
2h Apu	0	30	53	0	0		36					58											
2i Other	38	30	37	7.5	36		38				27.5	47	24.5										
3 Engines																							
3a Aircraft	52	20	53	0	0		56					47	43.5										
3b Ship	0	0	0	0	0						75.5												
3c Tank	0	0	0	0	0			75															
3d Blades/Vanes	56.5	0	0	0	0							50.5											
4 Missiles																							
4a Strategic	0	67	47	0	0																		
4b Tactical/Mlrs	0	53	0	0	19	30		18	22	52										16.5	40.5		
5 Amphibians																							
5a Vehicles	0	0	0	0	0														67	65.5			
5b Components	0	0	0	0	0														69	56.5			
6 Ground Combat Vehicles																							
6a Self-Propelled	0	0	0	0	0					65													
6b Tanks	0	0	0	0	0			59.5	53.5										58.5	52			
6c Towed	0	0	0	7.5	0					58.5										59			
6d Components	0	0	0	0	0				67.5										57.5	17.5			
7 Grnd & Ship Com & Elec																							
7a Rdr	0	0	0	56.5	10	43								40	46.5	37			39	43.5			
7b Rdo	0	0	0	47.5	10	45									41.5	38	43		45	40.5			
7c Wire	0	0	0	47.5	10	41													48	7.5			
7d Electronic Warfare	0	0	0	7.5	0	57.5									42	55.5							
7e Nav Igation Aids	0	0	0	52.5	10	44									34.5	33	35	48			16.5		

	Air Logistics Centers					Army Depots					Naval Av Depots			Naval Shipyards					Others				
Commodity Group	OC	OO	SA	SM	WR	TOAD	CCAD	ANAD	RRAD	LEAD	North Island	Cherry Pt	Jacksonville	Norfolk	Lng Beach	Pearl Hrbr	Puget Snd	Portsmouth	MCLB-A	MCLB-B	Crane	Keyport	Louisville
7f Elec-Optic/Night Vision	0	0	0	46.5	10	20		10							17.5		34	35	20	51.5	29.5		
7g Satellite Cont/Sensors	0	0	0	65.5	0	19									17.5								
7h Crypto						68																	
8 Auto/Constr Equipment	0	0	0	0	0				52.5										58.5	55			
9 Tactical Vehicle																							
9a Tactical Auto Vehicle	0	0	0	0	0				10										67	60.5			
9b Components	0	0	0	0	0				20										70	28.5			
10 Ground Group																							
10a Ground Support	0	0	0	0	0														20	17.5			
10b Small Arms/Pers Wpns	0	0	0	0	0			58.5											62.5	18			
10c Munitions/Ordnance	0	0	20	0	0			20		14													
10d Ground Generators	0	0	0	62.5	0				14	15									20	17.5			
10e Other	0	36.5	0	17.5	0	20		19	31.5	15									20	17.5			
11 Sea System																							
11a Ships	0	0	0	0	0									53.5	51	50.5	57.5	52.5		53	38		
11b Weapon Systems +(Other)	0	0	0	0	0									234	111	154	164	147			53.5	58.5	61.5
12 Software																							
12a Tacticalsystems	52.5	49.5	37.5	44	51.5	42.5													20				
12b Support Equipment	33	48	64	49.5	53																		
13 Special Interest Items																							
13a Bearings Refurbish	45	21	0	0	0		45				37.5												
13b Calibration	0	0	0	0	0																		
13c Test Measurement	20	0	42	0	0	52					28.5	33	28.5		36.5	43	35		20				
14 Other	0	0	0	17.5	0	19					49	30.5	41						19	17.5	17.5		
15 Manufacturing/Fabrication	19	20	21	21.5	23	42					39.5	44	28.5			43	40						
16 Fleet Support											137	93	119										
Total	626	687	591.5	787.5	485	576	544.5	260	289	219.5	678.5	847	603	327.5	398	454	408.5	282.5	781	695	236	58.5	61.5

Document Separator

McClellan's Technical Edge

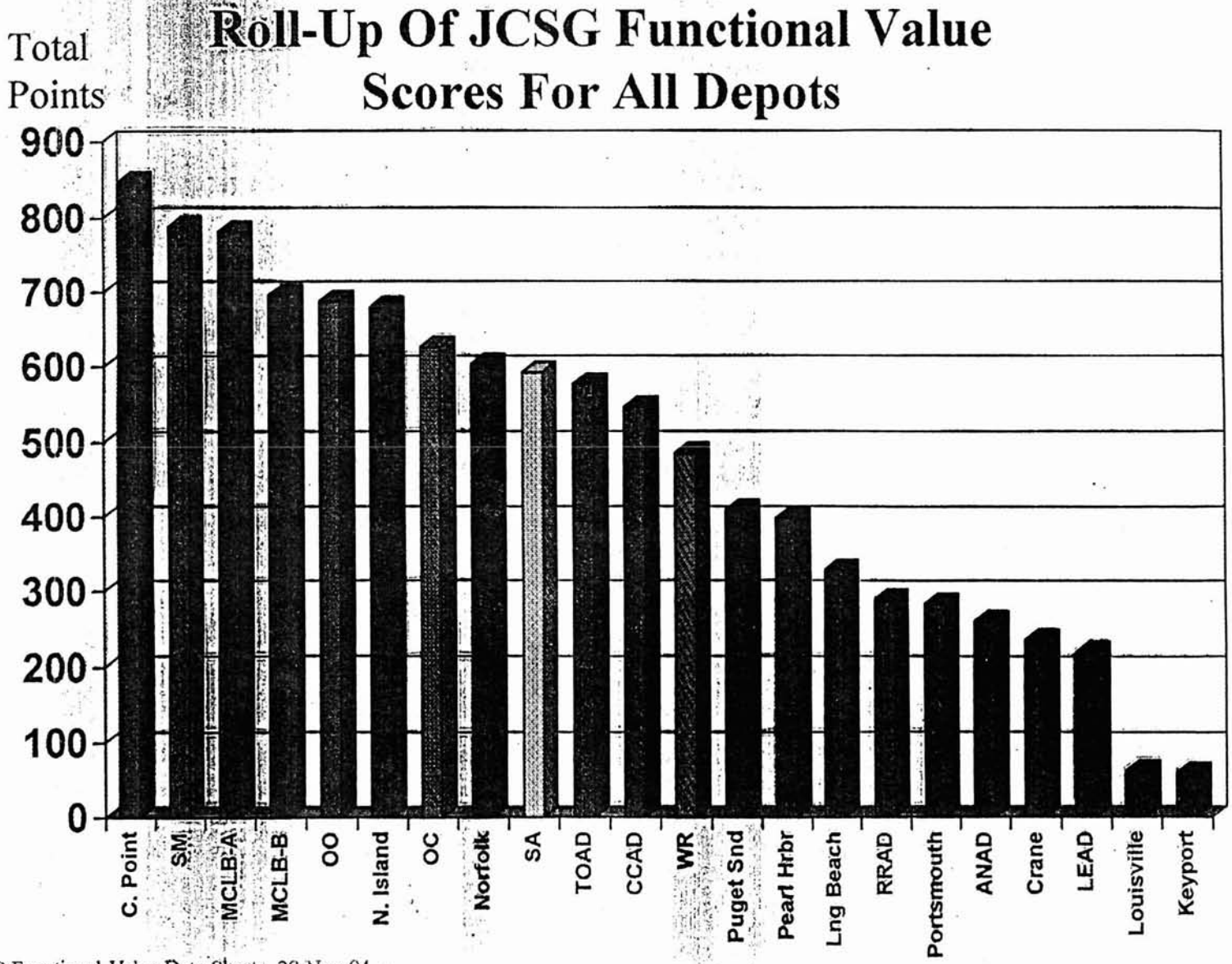
Technology	Unique Product or Service	Air Force Center of Excellence	Only DoD Source of Repair	Cross Service
Microelectronics	X			X
Nuclear Radiation Center	X		X	X
Cold Proof	X		X	
Hydraulics		X		
Instruments - Flight Controls		X		
Ground Comm-Electronics		X		X
Electro-Mechanical Spt Eq		X		
Composites & Plastics		X		
Electro-Optics/Night Vision		X		X
Firefinder			X	X
Bradley Fighting Vehicle			X	X

Functional Value

"The merit of performing a cross-service function at a given site or activity."...JCSG-DM

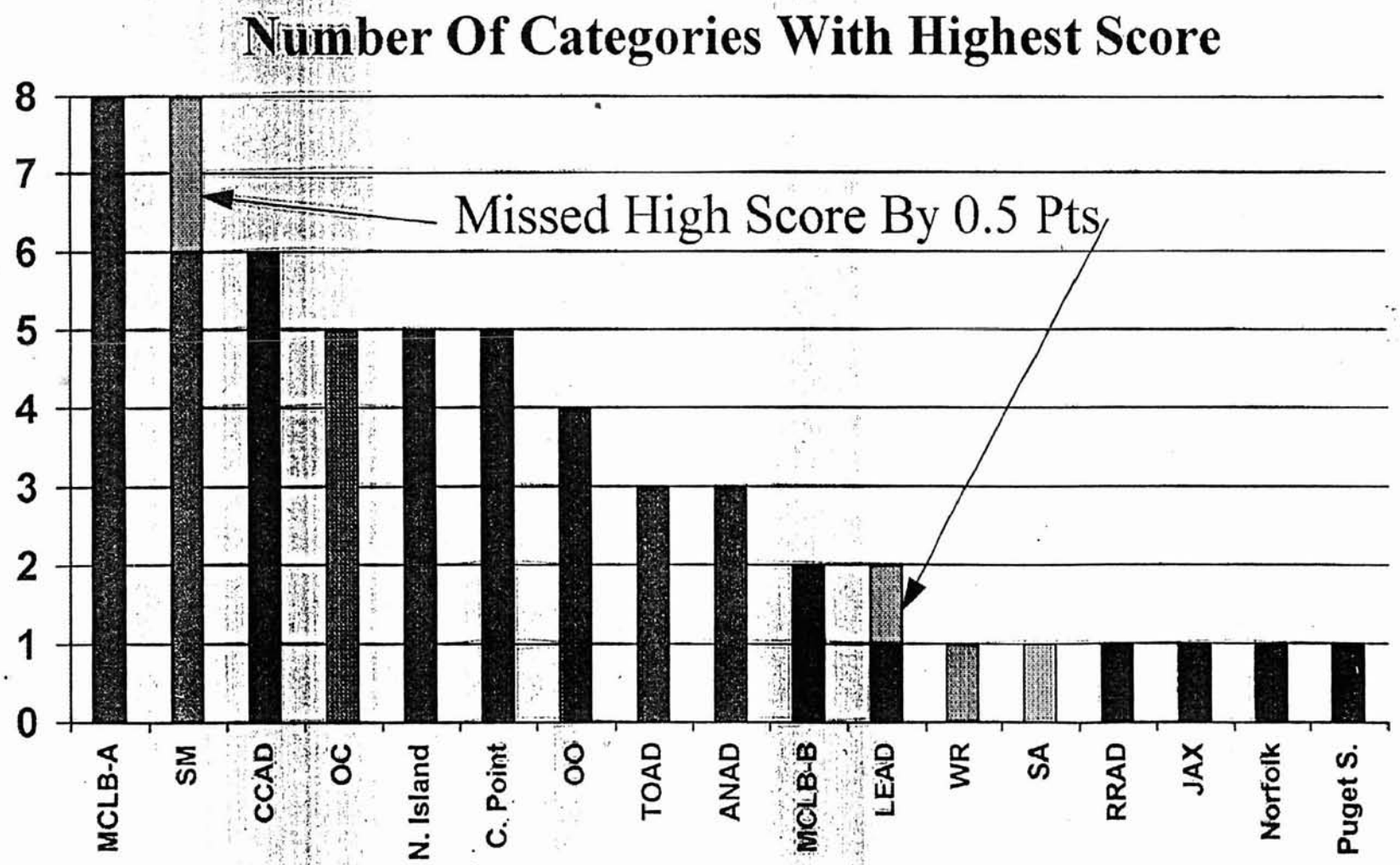
- **Core Workload/Core Capabilities (30 Max)**
- **Unique/Peculiar Core Workloads, Capabilities, Capacities (15 Max)**
- **Unique/Peculiar Core Workload Test Facilities (15 Max)**
- **Other Workloads (15 Max)**
- **Environmental Issues/Questions (10 Max)**

Functional Value



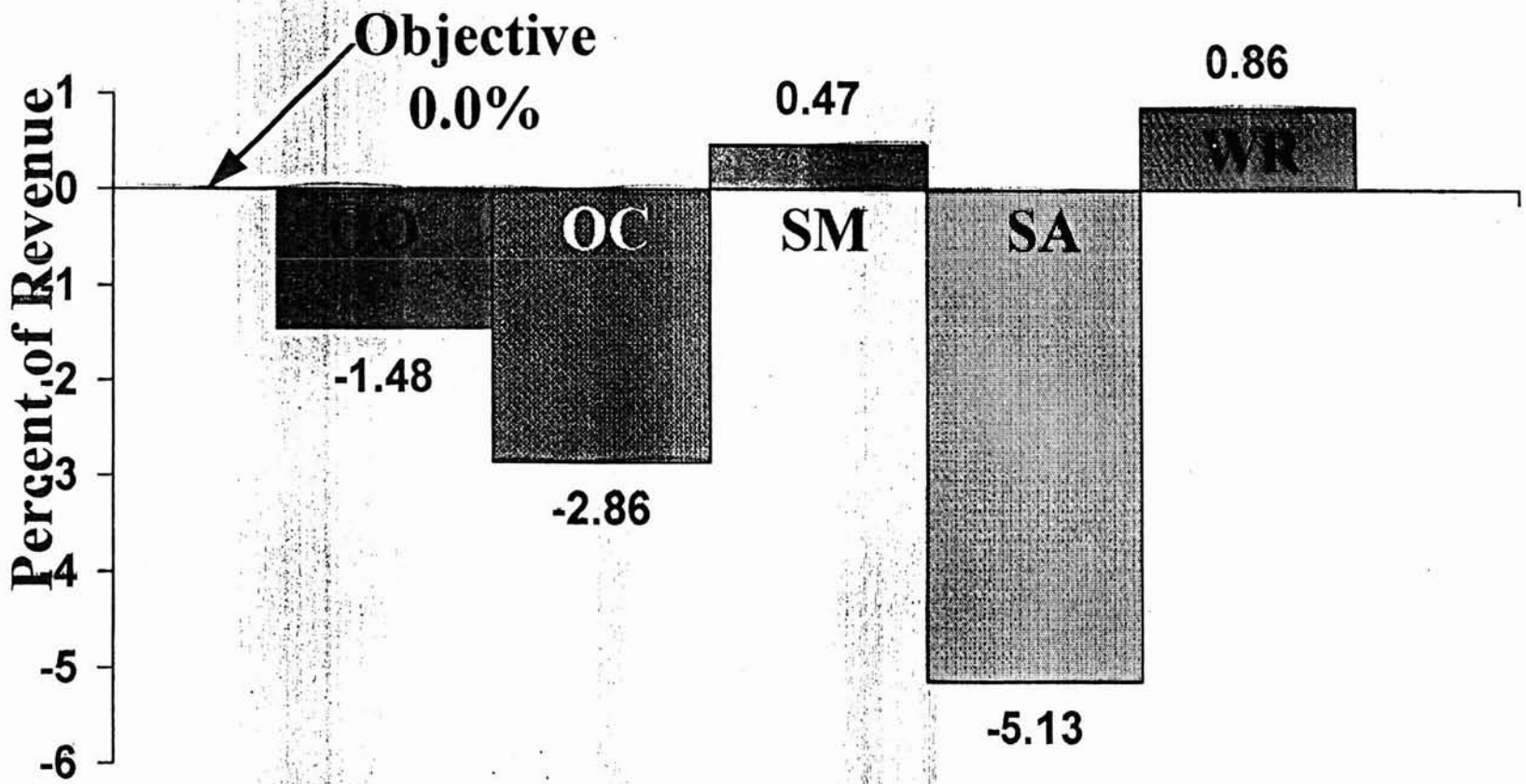
Source: JCSG Functional Value Data Sheets, 28 Nov 94

Functional Value

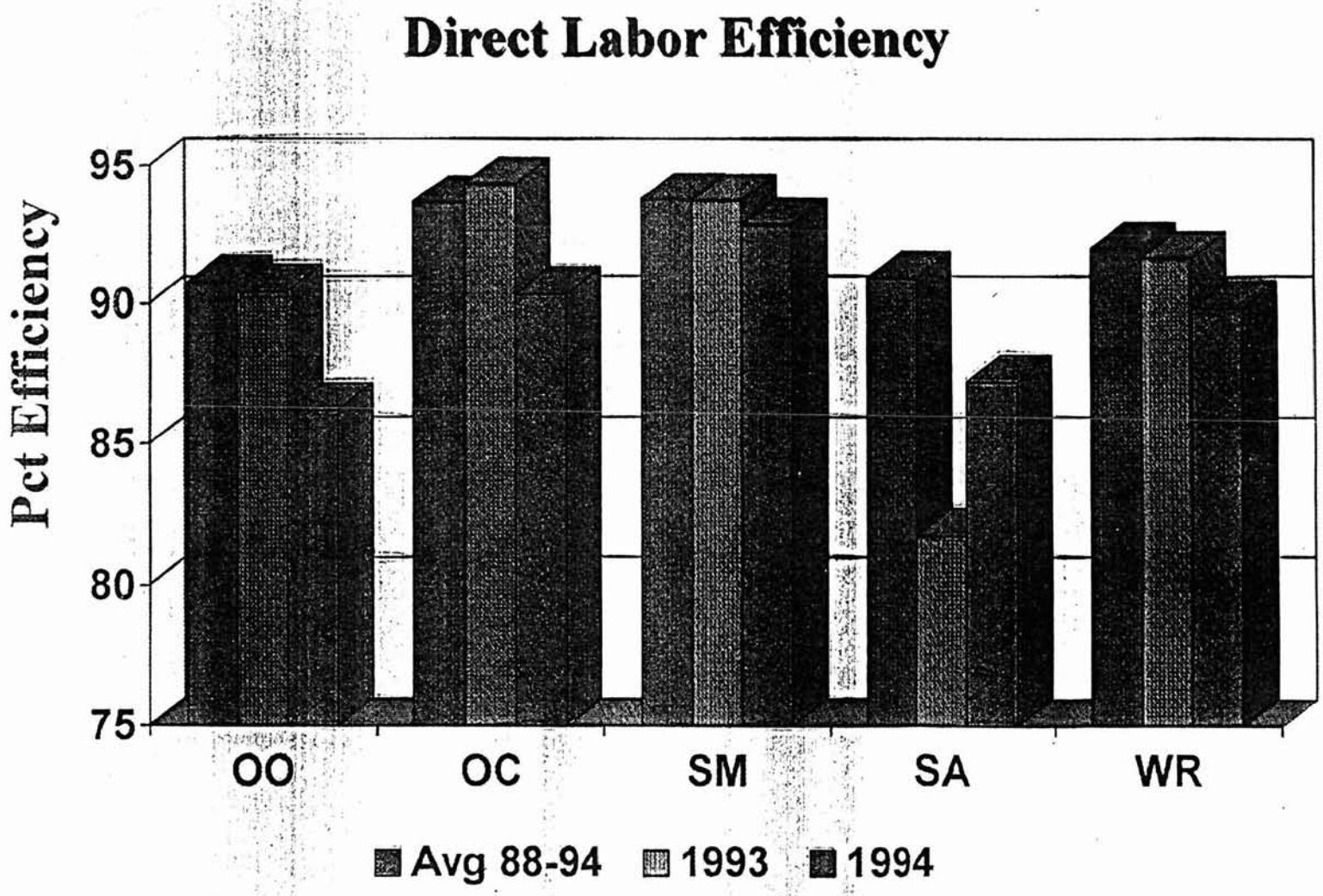


Labor Rate vs Effectiveness

Annual Operating Results
1988-1994 Cum

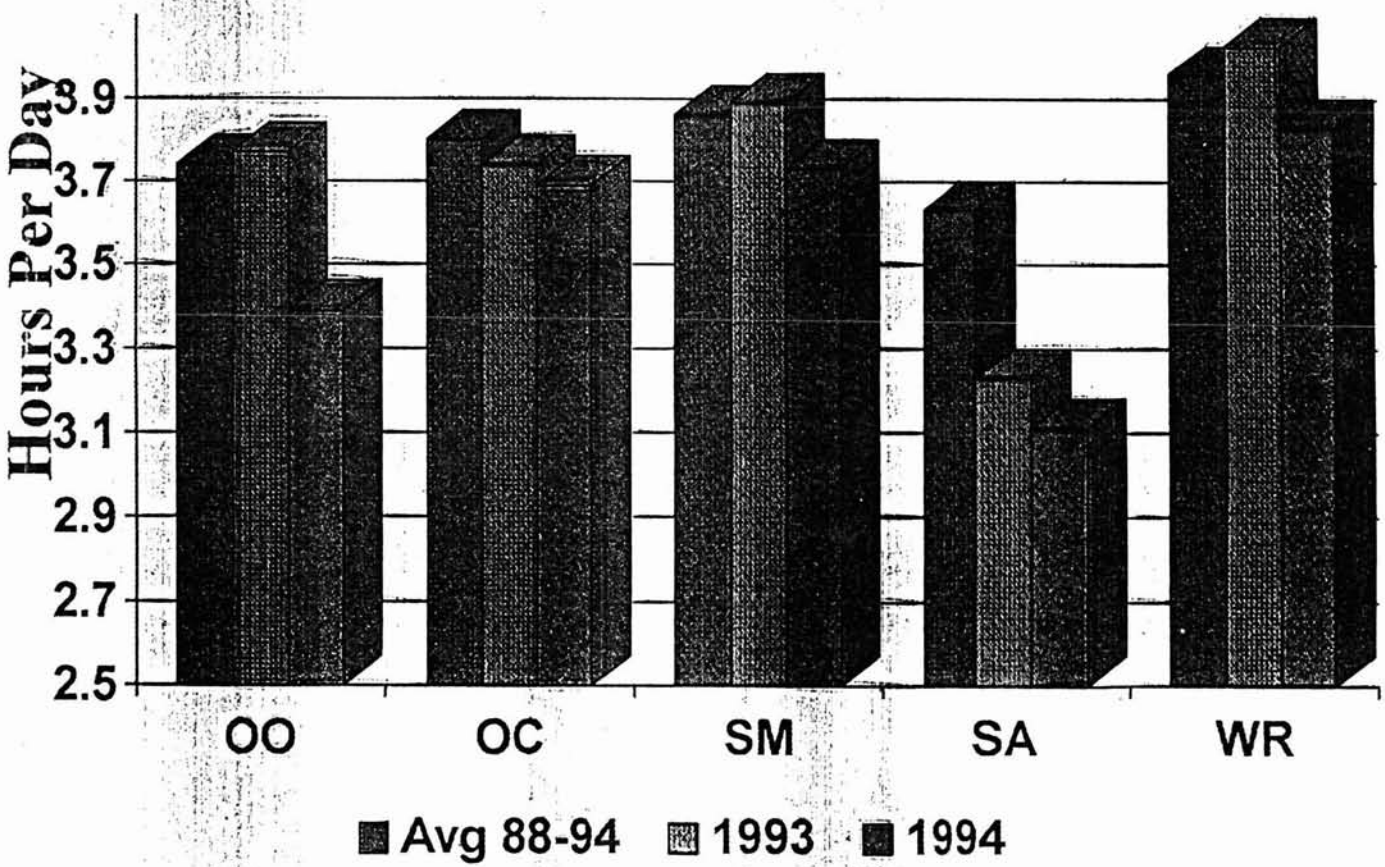


Labor Rate vs Effectiveness



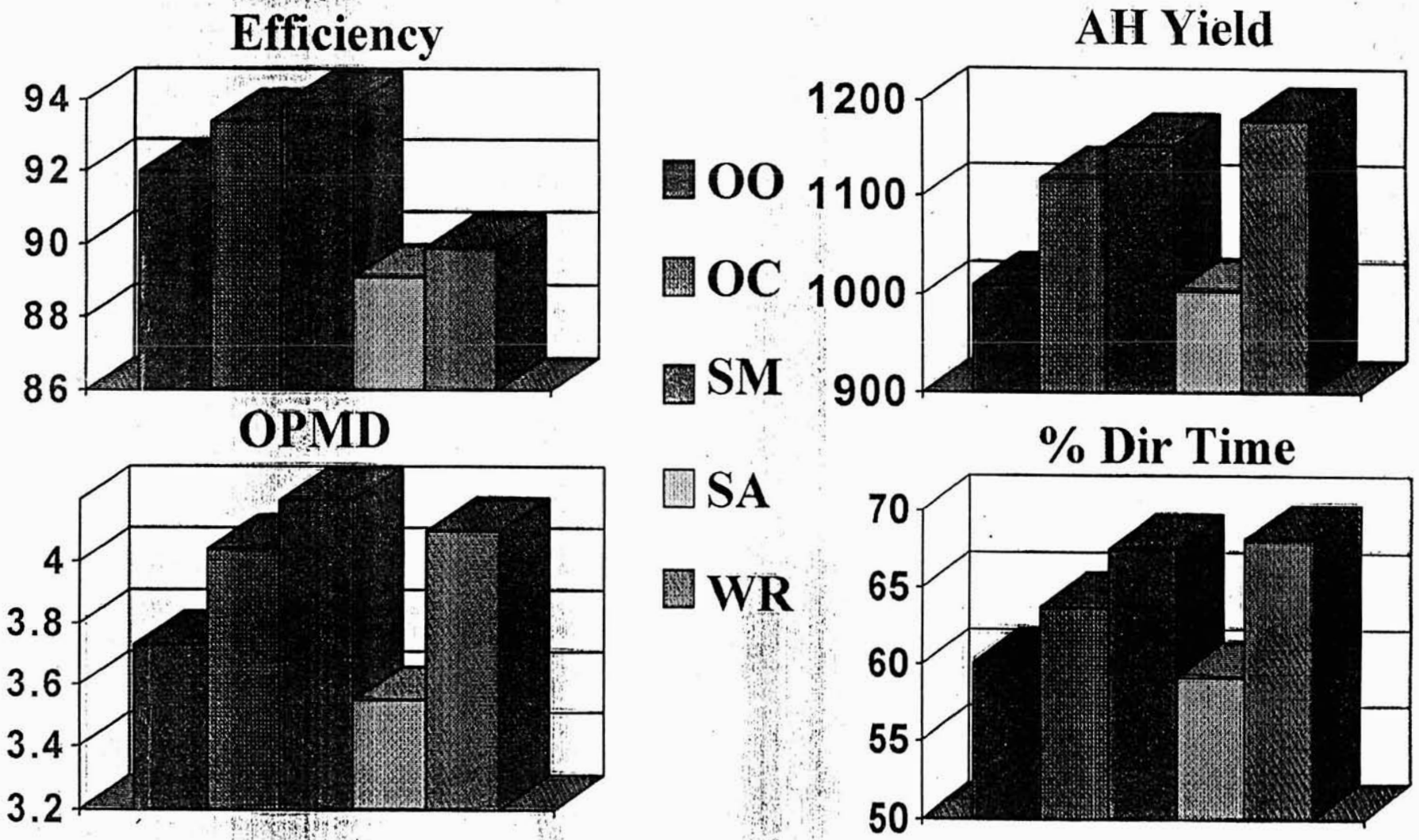
Labor Rate vs Effectiveness

Output Per Paid Manday



Labor Rate vs Effectiveness

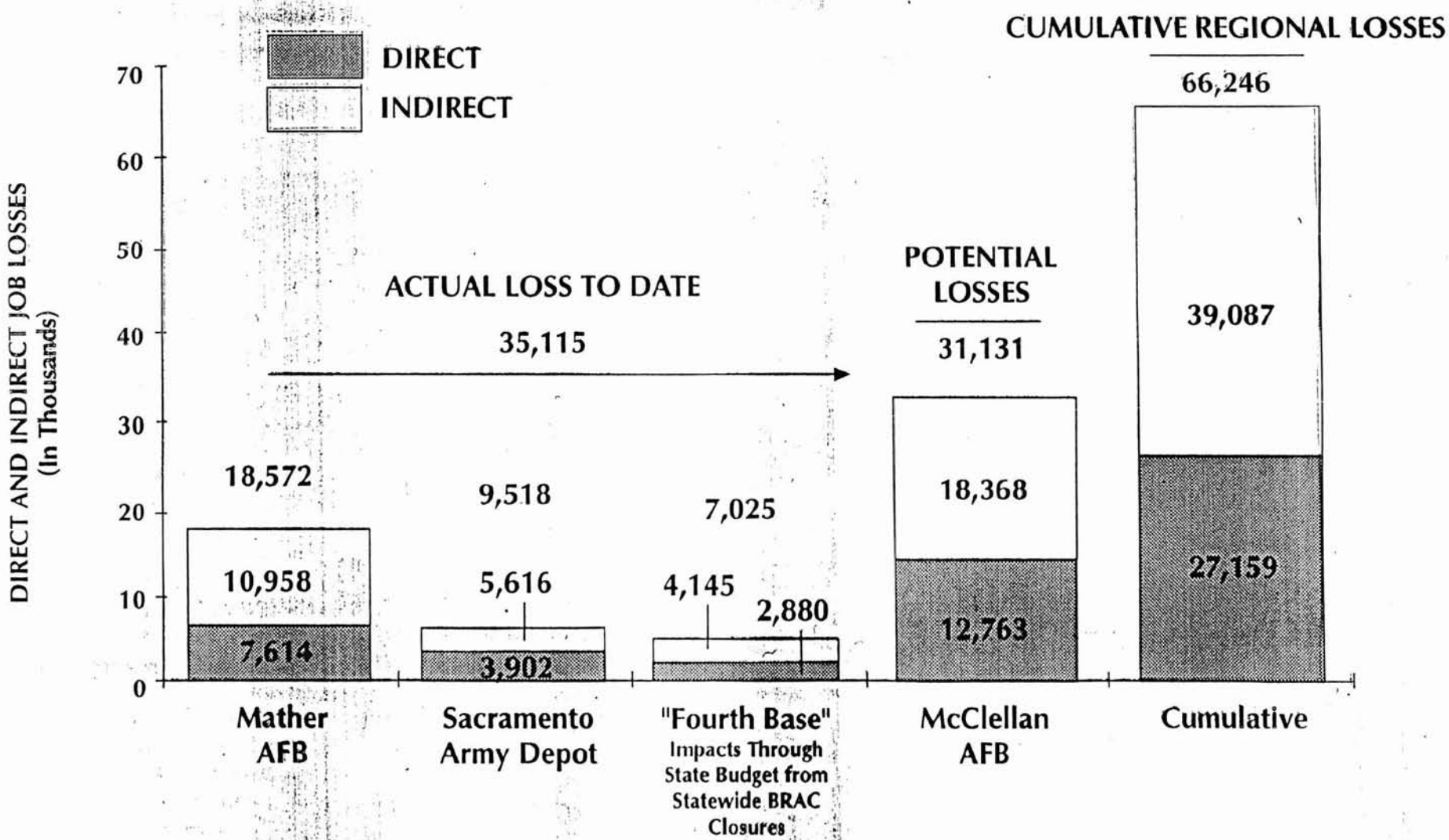
FY 95 Budgeted Performance



Required Adjustments To COBRA Worksheets

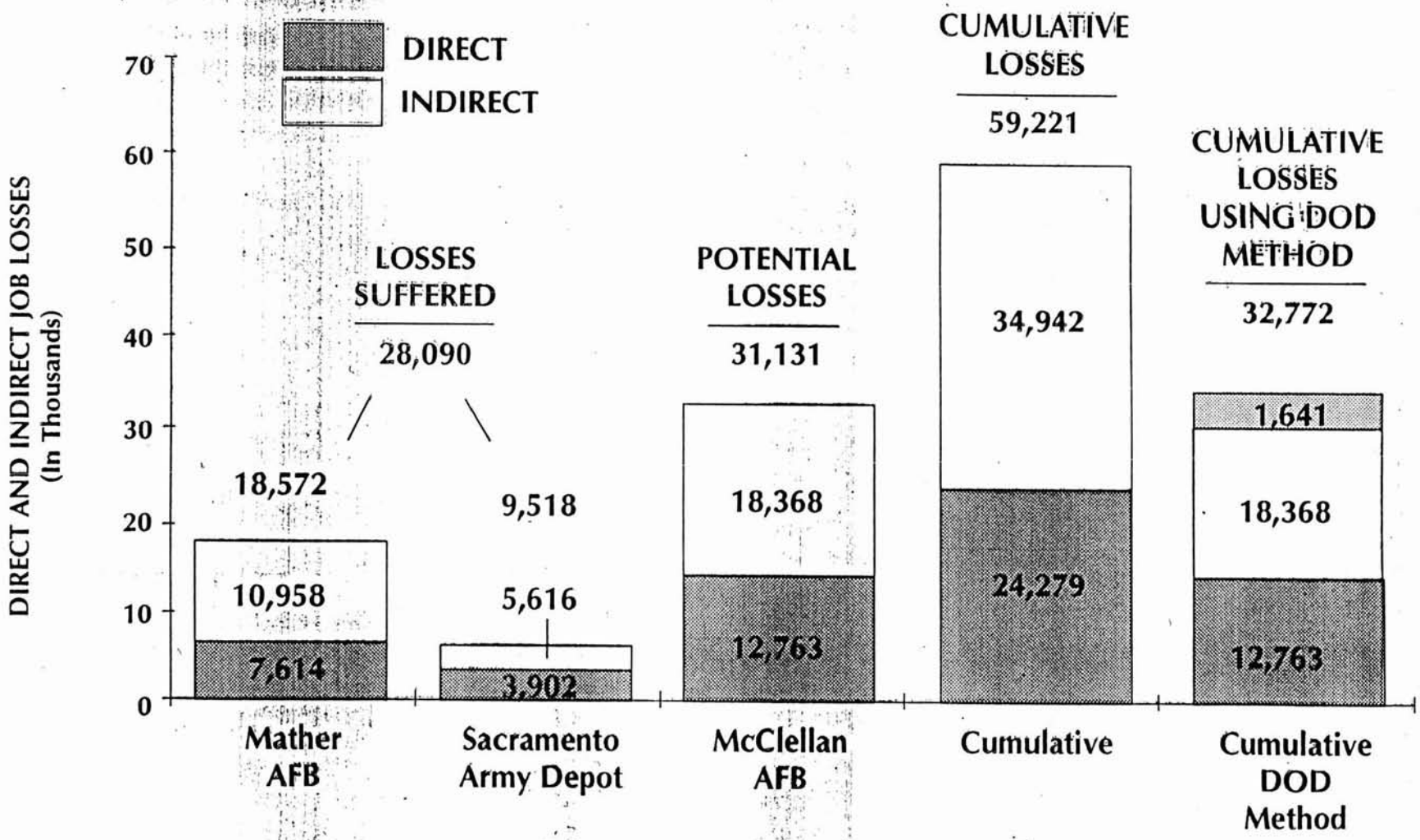
	Steady-State Savings Overstated By	One-Time Costs Understated By
BOS Associated w/940th Relocation Which Must Be Moved	76 PEs	PCS & Beddown For 76 BOS Associated w/940th Relocation
Understatement Of BOS Reduction For F-111 Retirement Not Attributable To Closure	32 PEs	
Mission Manpower Mischaracterized In COBRA Worksheet As BOS, But Which Must Be Moved	222 PEs	PCS & Beddown For 222 Mission PEs
BOS Associated w/Mission Manpower Alone Which Must Be Moved	18 PEs	PCS & Beddown For 18 BOS PEs Associated w/Above
Share Of Not Yet Booked Outyear Manpower Reductions (9.6% Of 821 Reduction)	79 PEs	
Total	427 PEs	
Impact On Steady-State Savings	$17M	

TOTAL CUMULATIVE IMPACTS ON THE SACRAMENTO REGIONAL ECONOMY FROM ALL FOUR BASE CLOSURES



Source: CSU Real Estate & Land Use Institute.

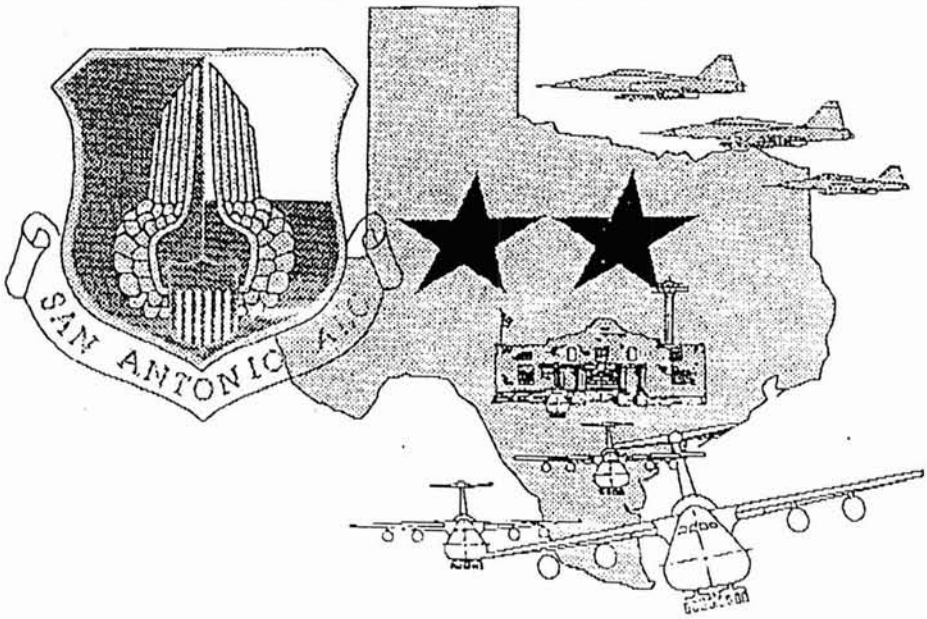
CUMULATIVE JOB LOSSES DUE TO BASE CLOSURES



Source: CSU Real Estate & Land Use Institute.

Document Separator

SAN ANTONIO AIR LOGISTICS CENTER
FAX COVER SHEET



KELLY AIR FORCE BASE

TO: Ms Ann Reese

OFFICE: BRAC

OFFICE NO.: 226-0504 FAX NO.: 703-696-0550

NUMBER OF PAGES (INCLUDING THIS PAGE): 7

SUBJECT: FAX From LtC Gabriel

COMMENTS:

FROM: SrA Foster

OFFICE: SA-ALC/CCA

OFFICE NO.: 945-4032 FAX #: (DSN) 945-9928
(COMM) 210-925-9928

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE MATERIEL COMMAND
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

5 MAY 1995

MEMORANDUM FOR HQ USAF/RT

FROM: HQ AFMC/XP
4375 Chidlaw Road, Suite 6
Wright-Patterson AFB OH 45433-5006

SUBJECT: Real Property Maintenance (RPM) Costs for Use in BRAC COBRA Estimates

1. During the BRAC Commission staff visit to Kelly AFB on 21 April 1995, commission staff members questioned Kelly AFB financial management representatives on RPM costs used in Air Staff BRAC COBRA runs. Specifically, the commission staff asked why the Kelly AFB RPM costs were so much higher than those used for other depot bases in COBRA:

BASE	RPM ($M)
Hill	6.020
Kelly	16.898
McClellan	5.663
Robins	6.147
Tinker	3.616

2. From conversations with your staff and SAF/FMC, we understand that the RPM costs shown above represent the projected FY94 costs (inflated to FY96) reported in section IV.1. of the Base Questionnaire. The higher RPM costs for Kelly are because Kelly included some cost categories, such as utilities and custodial services, which were not included by the other depot bases in projecting their FY94 RPM costs. Significant variances also appear in the FY94 projections for base operating support costs used in COBRA:

BASE	BOS($M)
Hill	16.024
Kelly	13.945
McClellan	21.097
Robins	22.001
Tinker	26.012

OPTIONAL FORM 99 (7-90)
FAX TRANSMITTAL
To: DEBBIE WILSON
From: AFMC/XPX
Dept./Agency: SA-ALC/FEMP
Phone #: 787-2600
Fax #: 945-6204
Fax #: 986-1744
NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

3. To ensure equitable treatment of the depot bases, we recommend that COBRA estimates provided to the BRAC Commission use the certified FY93 data from section IV.1. of the Base Questionnaire. The FY93 data represents actual expenditures, rather than projections. Variance

in the FY93 data is less than in the FY94 projections, and should provide more consistent COBRA estimates for the depot bases:

BASE	RPM($M)	BOS($M)
Hill	12.235	21.242
Kelly	11.873	15.319
McClellan	11.830	24.585
Robins	9.757	21.895
Tinker	18.189	17.549

4. Please advise us of your decision on the above recommendation. My POC is Mr. Tom Koepnick, HQ AFMC/XPX, DSN 787-2622.

EUGENE L. TATTINI
Brigadier General, USAF
Director of Plans

Sheet1

FY93 ACTUAL EXPENDITURES

BASE	RPM ($M)	BOS ($M)
Hill	$ 12,235	$ 21,242
Kelly	$ 11,873	$ 15,319
McClellan	$ 11,830	$ 24,585
Robins	$ 9,757	$ 21,895
Tinker	$ 18,189	$ 17,548

FY96 ESCALATED EXPENDITURES

BASE	Factor	RPM ($M)	BOS ($M)
Hill	0.927	$ 13,198	$ 22,915
Kelly		$ 12,808	$ 16,525
McClellan		$ 12,762	$ 26,521
Robins		$ 10,525	$ 23,019
Tinker		$ 19,621	$ 18,931

4. Cost categories included as RPMA in the Kelly AFB submission are as follows:

	FY94
Utilities	$7.5M
Custodial Services	5.3M
Civil Engineering (CE) Services	1.1M
CE Materials	0.9M
Demolition	0.5M
Architectural and Engineering Design	0.3M
Reimbursement of Base Produced Water	0.3M
All Other	0.2M
TOTAL*	$16.1M

* Inflation factor of 5.8% applied to this total to arrive at the $16.9M (FY96) cost identified in the Kelly COBRA.

5. As you can see from the above data, $12.8M or 80% of the 16.1M is for utilities and custodial services which were apparently left out of the other depot installation's submission.

6. Based upon our review, inconsistent procedures were used across the depot installations. A distortion in these cost elements would either over or understate the savings which can be achieved and would have a corollary impact on the Net Present Value and the Return on Investment of a given installation. Therefore, we request an immediate bottoms-up review (information by PEC and cost category) be performed to standardize inputs to ensure the submissions are valid and consistent throughout the command.

7. Our point of contact is Ms. Deborah Wilson, SA-ALC/FMPF, DSN 945-4757, ext. 891.

LOUIS E. CURTIS III
Major General, USAF
Commander

Gene,
This is a priority issue with us. The numbers don't make sense to me. We'll appreciate your help.
Lou

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From the Desk of the
Chief, Environmental Law Division
Office of the Staff Judge Advocate

20 April 1995

To: Major General Curtis

Sir:

Attached is the final version of the Letter of Intent as approved by area water districts to supply 15,000 acre feet of treated surface water annually on a wholesale basis to area military installations. Also provided is a map indicating the location of the water supply lines and treatment plants as agreed among the parties. As you will note from the map, the pipeline will deliver water directly to the boundary fence of Kelly AFB.

The document we were provided was signed as an original by those members of the coalition present along with Joe Moore, the court appointed water monitor. The document is presently being circulated to obtain all signatures and will be provided to us when that process is complete.

The signing of this document is extremely important for Kelly AFB because a ready source of surface water that can be supplied against future missions insures that those missions will have no impact on the Edwards Aquifer whatsoever, and no impact on the endangered species which rely on the aquifer for habitat. Therefore, concerns over an adequate water supply will no longer be an issue in mission development.

V/R

Byron F. Cotton

Atch:
(1) Letter of Intent
(2) Map

LETTER OF INTENT
AMONG
CANYON REGIONAL WATER AUTHORITY,
NEW BRAUNFELS UTILITIES,
BEXAR METROPOLITAN WATER DISTRICT,
SAN ANTONIO WATER SYSTEM,
SAN ANTONIO RIVER AUTHORITY,
AND
GUADALUPE-BLANCO RIVER AUTHORITY

April 19, 1995

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At the Panel meeting held on January 12, 1995, the Monitor defined the elements of the Monitor's proposed incidental take permit application. Those elements include at least 75,000 acre-feet per year of treated water to be supplied initially, and quickly, from currently available surface waters in the Guadalupe River Basin, and at least 75,000 acre-feet per year of treated water to be supplied initially, and quickly, from currently available surface water in the Colorado River Basin. Recently, the Court entered its March 6, 1995 Order on the Sierra Club's Second Motion for Additional Relief, and the Court included the following paragraphs in that Order:

> (2) the San Antonio Water Systems (SAWS), the Guadalupe-Blanco River Authority (GBRA) and the Lower Colorado River Authority (LCRA) are strongly urged to enter into the appropriate written agreement or agreements by March 31, 1995 to actually get at least 150,000 acre-feet per year of treated water from other sources flowing in Bexar County at the earliest practicable date;
>
> (3) the Monitor is directed to report by March 31, 1995 on such agreement or agreements and, to the extent necessary, on obstacles to any of the three parties reaching such agreement or agreements; . . . .

Section 2(d) of the GBRA Act, Chapter 75, Acts of the 43rd Legislature, 1933, as amended (formerly codified at Article 8280-106, V.T.C.S.) provides, in part, that

> ... [GBRA] shall not enter into any agreement which contemplates or results in the removal from the watershed of the Guadalupe and Blanco Rivers and their tributaries of any surface water of [GBRA] necessary to supply the reasonably foreseeable future water requirements for municipal uses during the next ensuing fifty-year period within such watershed, except on a temporary interim basis; . . . .

Based on current forecasts of demand for water in the Guadalupe River Basin, GBRA has concluded that surface waters from the Guadalupe River can be made available for use in Bexar County only on a temporary interim basis.

CRWA, NBU, BMWD, SAWS, SARA and GBRA believe that this Letter and the regional water supply plan (the "Plan") described in this Letter are in the public interest and consistent with all applicable statutory requirements, the Court's orders, the elements of the Monitor's proposed incidental take permit application, and the studies done and findings made to date in the Texas Water Development Board's Trans Texas Water Program.

IN CONSIDERATION of the foregoing, CRWA, NBU, BMWD, SAWS, SARA and GBRA agree as follows:

LETTER OF INTENT
AMONG
CANYON REGIONAL WATER AUTHORITY,
NEW BRAUNFELS UTILITIES,
BEXAR METROPOLITAN WATER DISTRICT,
SAN ANTONIO WATER SYSTEM,
SAN ANTONIO RIVER AUTHORITY,
AND
GUADALUPE-BLANCO RIVER AUTHORITY

This Letter of Intent (this "Letter") is entered into as of April 19, 1995 by and among Canyon Regional Water Authority ("CRWA"), New Braunfels Utilities ("NBU"), Bexar Metropolitan Water District ("BMWD"), San Antonio Water System ("SAWS"), San Antonio River Authority ("SARA"), and Guadalupe-Blanco River Authority ("GBRA").

RECITALS

The parties to this Letter recognize that there is a critical need in Bexar County and surrounding areas for substantial amounts of treated water from alternative sources, to supplement the available supply of water from the Edwards Aquifer.

The need for additional water supplies was recognized by the Federal Court in *Sierra Club v. Babbitt*, Cause No. MO-91-CA-069 in the United States District Court for the Western District of Texas, Midland/Odessa Division, first in the Court's February 1, 1993 Judgment and Separate Findings and Conclusions, and again in its May 26, 1993 Amended Judgment and separate Amended Finding and Conclusions. Several months later, the Court entered its December 10, 1993 Order Appointing Joe G. Moore, Jr. as Monitor, and the Court included the following paragraph in that Order:

> IT IS FURTHER ORDERED the City of San Antonio, in particular, is strongly urged to cooperate fully with the Monitor. The Court further strongly urges the City to take all actions necessary so that the City will be able to supply to its citizens and other water customers the substantial amounts of water currently available from sources other than the Edwards Aquifer at the earliest possible date. The City is strongly urged to plan to reduce significantly, at the earliest possible date, its withdrawals from the Aquifer, particularly during droughts, with minimal adverse consequences on human economic activities.

The Court repeated the above paragraph in its September 30, 1994 Order Directing the Monitor to Create a Panel whose primary purpose it is to develop incidental take permit applications pursuant to §10(a) of the Endangered Species Act, 16 U.S.C. §1539(a).

ARTICLE I

PURPOSE AND CONDITIONS

Section 1.01. Purpose.

This Letter provides the framework by which the parties agree to develop a Plan to respond to the critical need in Bexar County and surrounding areas for substantial amounts of treated water from alternative sources to supplement the available supply of water from the Edwards Aquifer.

Section 1.02. Need for Regulation of Withdrawals.

This Letter, and development of the Plan, are expressly conditioned upon initiation of regulation of withdrawals of water from the Edwards Aquifer adequate to protect minimum springflows from the Comal and San Marcos Springs as may be required by law and for the preservation of flows in the Lower Guadalupe River Basin. See GBRA Board Resolution attached hereto as Exhibit A.

Section 1.03. Supply by GBRA.

Subject to obtaining all necessary approvals, GBRA will supply raw water on a firm basis for treatment and use in Bexar County under terms and conditions necessary to insure timely return or replacement of Guadalupe surface waters to protect the economic development of the Guadalupe River Basin.

Section 1.04. Initial Sources of Raw Water.

The initial sources of the water supplied by GBRA will be the run-of-river flows of the Guadalupe River supplemented as may be necessary by releases of stored water from Canyon Reservoir.

Section 1.05. Diversions from the Guadalupe River.

The raw water supplied by GBRA shall be diverted from the Guadalupe River at a point or points of diversion to be determined. The initial phase of the Plan (not less than 15,000 acre-feet per year) may include a diversion as reflected on the map attached hereto as Exhibit B.

Section 1.06. Replacement Supplies.

To the extent that surface water supplied by GBRA from the Guadalupe River is not returned to GBRA for its use and control at such times and in such amounts to be defined in one or more detailed and comprehensive contracts prepared pursuant to Section 4.03, below, then GBRA shall have the right under such contracts to timely

acquire for supply within the Guadalupe River Basin adequate replacement supplies from other sources.

Section 1.07. Additional Supplies.

All parties to this Letter understand that substantial additional supplies of raw water must be developed so that sufficient water supplies are made available to Bexar County.

Section 1.08. Protection.

It is expressly understood that the parties to this Letter are obligated and required to provide and protect the water resources of their respective areas.

ARTICLE II

REGIONAL WATER SUPPLY PLAN

Section 2.01. Participant Responsibilities.

The roles of the participants include the following:

GBRA, as part of the Plan development:

1. shall identify available water resources and diversion points from the Guadalupe River system and replacement supplies, if necessary;
2. shall supply treated water to SARA in one or more phases as agreed by parties;
3. shall supply raw water to CRWA and NBU for treatment and delivery to their customers;
4. shall identify and define facilities to be included in the Plan, especially for the diversion, conveyance and treatment of water;
5. shall secure necessary permits for the facilities and for the initial and replacement water supplies and the exportation of Guadalupe River water;
6. shall identify other permit requirements to be included in the Plan and pursued by GBRA; and
7. shall cooperate and assist in cost estimates and appropriate reimbursement of costs and expenses from those benefitting from water use.

SARA, as part of the Plan development:

1. agrees to take all treated water from GBRA available from GBRA to sell to parties in Bexar County at an equitable wholesale rate;
2. shall provide equitable treatment of all entities desiring alternative sources of water for both present and future needs;
3. shall identify projects to be included in Plan to insure both short and long range water needs;
4. shall identify permit requirements to be included in Plan and pursued by SARA; and
5. shall cooperate and assist in cost estimates and appropriate reimbursement of costs and expenses from those benefiting from water use.

SAWS, as part of the Plan development:

1. agrees to take up to 100% of water supplied to SARA, but not less than the projected pro rata needs of users in its service area;
2. shall provide for both short and long term water supplies;
3. shall cooperate with other participants, primarily with GBRA and SARA, to develop a Plan that can be implemented with or without participation by others;
4. shall identify facilities needed for delivery of water to the San Antonio area military bases and communities; and
5. shall include necessary distribution and storage facilities required to utilize available water.

BMWD, as part of the Plan development:

1. agrees to take water from SARA and/or CRWA and/or NBU as needed by users in its service area; and
2. shall include necessary distribution and storage facilities required to utilize available water.

CRWA, as part of the Plan development:

1. may include necessary treatment and distribution facilities as required to serve the following existing and potential customers:

   Green Valley Special Utility District
   Springs Hill Water Supply Corporation
   East Central Water Supply Corporation
   Crystal Clear Water Supply Corporation
   City of Marion
   City of Schertz

City of Cibolo
City of Garden Ridge
Lackland City East Service Area of BMWD

NBU, as part of the Plan development:

1. may include necessary treatment and distribution facilities as required to serve its current customer base and service area and the following potential customers:
   City of Marion
   City of Schertz
   City of Cibolo
   City of Garden Ridge.

Section 2.02. Facilities.

The Plan is contemplated to include the following potential facilities: a new regional water treatment plant, facilities to divert, store and convey raw water from the Guadalupe River to the treatment plant, and facilities to convey and deliver treated water from the treatment plant to SARA and then to participants. Due to the magnitude of the construction, the Plan may be divided into multiple phases. The initial phase of the Plan may include an expansion of the existing NBU or CRWA diversion, treatment and conveyance facilities, through negotiation with GBRA.

Section 2.03. Water Treatment Capacity.

The initial phase of the Plan will have a treated-water design capacity of not less than 14.0 mgd (15,000 acre-feet per year). Subsequent phases of the Plan will have treatment capacity of the treatment plant(s) to accommodate the available supply and the necessary peaking requirements. At the present time, the parties anticipate that the plant(s) will be located in the Guadalupe River Basin and will be constructed, owned and operated by GBRA.

Section 2.04. Allocation of Water.

Water supplied by GBRA to SARA under this Letter will be committed to BMWD, SAWS, and other participants pursuant to an allocation proposed by SARA and agreed to by such participants.

Section 2.05. Military Bases.

The intended customers of any initial phase include the military bases now relying on water withdrawn from the Edwards Aquifer. The plan will include distribution lines to be constructed so as to reach all military installations currently using substantial quantities of Edwards' water.

ARTICLE III

PLAN FINANCIAL CONDITIONS

Section 3.01. Reimbursement of Facilities Costs.

Providers shall be reimbursed for all costs incurred in connection with the design, construction, operation and maintenance of the necessary facilities developed in the plan.

Section 3.02. Charges for Raw Water Committed from Initial Sources.

GBRA shall be paid for the raw water committed to be supplied initially from surface waters of the Guadalupe River Basin at a rate or rates to be defined in one or more detailed and comprehensive contracts prepared pursuant to Section 4.03, below.

Section 3.03. Reimbursement for Replacement Water Supplies.

GBRA shall be reimbursed for all costs incurred by GBRA in acquiring and supplying any replacement water supplies required pursuant to Section 1.06, above.

ARTICLE IV

PLAN PROCESS CONDITIONS

Section 4.01. Public Process.

Participants shall conduct a process for public input and information for respective constituents.

Section 4.02. Permitting.

Following Plan development and approval by the parties, GBRA shall prepare and file applications for permits and/or permit amendments to authorize the supply of raw water for the Plan from initial sources and, as may be appropriate, the acquisition and supply of replacement and additional water supplies. All such authorizations shall be conditioned upon initiation of regulation of withdrawals of water from the Edwards Aquifer, as set forth in Section 1.02, above. Any authorization to divert water from the Guadalupe River for any initial phase shall be conditioned upon GBRA obtaining the necessary authorizations to maximize the permitted yield of Canyon Reservoir and the total firm supply of surface water (run-of-river flows firmed up by releases of such stored water) to be diverted from the Guadalupe River. Additionally, any such authorization to divert water for any initial phase shall be subordinate to other diversions to the extent such other diversions provide a greater total firm supply of surface water from the Guadalupe River.

Section 4.03. Contracts.

Following Plan development and approvals by the parties, GBRA and SARA shall promptly cause to be prepared the contractual and other documents necessary to pursue permitting and acquisition of the necessary water supplies, and to begin construction of Plan facilities.

ARTICLE V

MISCELLANEOUS

Section 5.01. Modification of Letter

Any party may propose modifications to this Letter at any time. The parties shall meet to discuss any proposed modification promptly after the proposal is made.

Section 5.02. Withdrawal of Parties.

Any party may withdraw from this Letter at any time upon giving written notice of withdrawal to the other parties. Upon withdrawal of any party, this Letter may be continued upon agreement by the remaining parties.

Section 5.03. Termination of Letter.

This Letter shall terminate on January 1, 1996, unless it is terminated earlier by withdrawal of any party, or extended as set forth below. The parties anticipate that this Letter will be superseded by execution, prior to January 1, 1996, of one or more detailed and comprehensive contracts prepared pursuant to Section 4.03, above. The parties agree that the individuals signing this Letter may, by their written agreement and without need for any further authorization from any party, extend the date of termination to not later than April 1, 1996.

CANYON REGIONAL WATER AUTHORITY

By:_____
David J. Davenport
Administrator

NEW BRAUNFELS UTILITIES

By:_____
Paula J. Difonzo
General Manager

BEXAR METROPOLITAN WATER AUTHORITY

By:_____
Tom C. Moreno
General Manager

SAN ANTONIO WATER SYSTEM

By:_____
Joe A. Aceves
President/Chief Executive Officer

SAN ANTONIO RIVER AUTHORITY

By:_____
Fred N. Pfeiffer
General Manager

GUADALUPE-BLANCO RIVER AUTHORITY

By:_____
W.E. West, Jr.
General Manager

ACKNOWLEDGED AND ATTESTED:

COURT MONITOR AND SPECIAL ADVISOR

By: Joe G. Moore, Jr.
Joe G. Moore, Jr.

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			Hutch		AF		DBCRC			
milcon c-5 hanger			82		52		52			
C-5 portion of milcon engine test & other					26		26			
total milcon for Tinker					78		78			
transfer equip			102		11		11			
training & production cost			102		59		14			
				train c-5	24		20			
				rearrange	19		19			
total prod cost			102		102		53			
		other than C-5 milcon		49					train $ per	4,000
			53%	25.97						
			train per	4,000					transfered	11165
			transfered	11165					53%	5917.45
			53%	5917.45					85%	5029.833
			rearrange	36.7						
			53%	19.451						
			equip mov	21.2						
			53%	11.236						

15 JUN 1995

TO: Ann Reese

You asked for the number of people working C-5 depot maintenance at Kelly. Please note that the numbers below do not include weapon system management and inventory control point personnel. We have broken the numbers into two categories: C-5 PDM and C-5 Speedline.

SA-ALC PEOPLE DEDICATED TO C-5 WORKLOAD

	FY 95	FY 96	FY 97
C-5 PDM	1175	1127	1110
C-5 Speedline	165	190	184
TOTAL	1340	1317	1294

Capt Morris

Ms Reese,

per your request. This data was coordinated and validated by our FM and LA (C-5) directorates. Please note this is Depot Maintenance only.

V/R Capt S. Morris
AIDE DE CAMP

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Kelly	
airframe	1083643
engine	1297663
C-5	2381306
SA total	4462690
C-5 % tota	53%

DBCRC STAFFER DATA REQUEST

1. Data verbally requested by Ms. Anne Reese on 19 June 1995.

2. Data requested:

   a. Workload hours for the C-5 airframe for FY99.

   b. Workload hours for the C-5 engine for FY99.

3. Data provided below in the same format as Table 3.1.b from the JCSG-DM data call and is updated based upon the latest Planned Labor Application, dated April 1995, and differs from the data submitted to the Air Force in October 1994. Airframe and engine work is supported by various commodities beyond the obvious ones, therefore, the portion of the associated workload from each commodity group is identified.

C-5 AIRFRAME Support	FY99 DLH
1C1 C-5 Airframe	826,927
2B Aircraft Components - Structures	142,202
2E Aircraft Components - Landing Gear	227
2G Aircraft Components - Avionics/ Electronics	38,929
2J Aircraft Components - Manufacturing & Fabrication	33,138
3A Engines (GTE) Aircraft	31,034
12A Software - Tactical Systems	471
12B Software - Support Equipment	9,894
13C Special Interest Item - TMDE	821
C-5 AIRFRAME Total	1,083,643

C-5 ENGINE (TF39) Support	FY99 DLH
21 Aircraft Components - Other	1,417
3A Engines (GTE) Aircraft	1,289,891
13C Special Interest Item - TMDE	6,355
C-5 ENGINE Total	1,297,663

4. Data requested by Mr Cantwell on 97/4 manpower for Cryptologic Support Directorate:

20	Officers
178	Enlisted
339	Civilian
537	TOTAL 97/4

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	Tinker Capacity		4,912		Kelly Capacity		7,318
	Tinker Core		2,304		Kelly Core		2,626
	Kelly Core		2,626		Tinker Core		2,384
			4,930				5,010
			-18				2,308

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Reese, Ann

From: Creedon, Madelyn
To: Reese, Ann
Cc: Kaiser, Ralph
Subject: RE: Question from Steele
Date: Monday, March 27, 1995 10:44AM

Ann, the services have authority to lease space that they are not using if it will not interfere with other mission activities and is consistent with national defense. To do this directly, however, as opposed from going through GSA, the land/space must not be "excess". Excess is a term of art under the federal property act that applies to land that is no longer needed for federal use. The term of the lease is generally for five years or less. Services have used this authority in some instances. The lease must be for fair market value and there is special authority for the military services to retain the lease payments. Broader authority is available to the services to lease space and land at closing bases. I will do a short note to WS.

>From: Reese, Ann
>To: Kaiser, Ralph
>Cc: Creedon, Madelyn
>Subject: Question from Steele
>Date: Sunday, March 26, 1995 12:38PM
>
>Ralph, I wanted to remind you that Steele had a question for GC
>staff. She wondered if there was a legal prohabition from
>permitting private sector contractors from utilizing Air
>Logistics Center factilities/ floor space.
>
>We will be packaging up answers to questions posed during the
>Warner Robins trip. I'd appreciate it if you could forward the
>answer to this question ^ to me so that I could include it
>with the others. Thanks!!
>

A one minor.

29 March 1995

General Davis:

Attached please find a draft of the Warner Robins base visit report.

I will be happy to incorporate any changes to the report that you recommend.

Ann Reese

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WARNER ROBINS AIR FORCE BASE VISIT

LEAD COMMISSIONER: Mr. Davis

ACCOMPANYING COMMISSIONER: Mrs. Steele

STAFF ESCORT: Mr. Owsley

ELECTED OFFICIALS ATTENDING: None

BASE'S PRESENT MISSION:

Warner Robins Air Logistics Center
- Provides support to F-15, C-141, C-130 aircraft, and accomplishes most Air Force helicopter depot level maintenance
- 78th Air Base Wing
  Headquarters, United States Air Force Reserve
  19th Air Refueling Wing (AMC)
- 20 KC-135R, 1 EC-135Y, and 2 C-12F

AFSOC (Special Operation Flight)
- 1EC-137D

5th Combat Communication Group (ACC)
9th Space Warning Squadron (AFSPC)

Planned changes:
The Air Force has designated Robins AFB as the main U.S. operating base for the Joint Surveillance and Target Attack Radar System (JSTARS). The resulting manpower authorizations, number of aircraft, and construction requirements have not been finalized.

The 116th Fighter Wing (ANG), currently located at Dobbins Air Reserve Base, GA will relocate to Robins AFB. The unit will begin a conversion from 15 F-15A/B to 8 B-1B aircraft in mid-1995. The conversion/relocation will result in an increase of 192 full-time military, 976 drill, and 453 civilian position authorizations.

DOD RECOMMENDATION:

- Downsize Warner Robins Air Logistics Center.

DOD JUSTIFICATION FOR ACTION:

Reductions in force structure have resulted in excess depot capacity across Air Force depots. The recommended Air Logistic Center realignments will consolidate production lines and move

workload to a minimum number of locations, allowing the reduction of personnel, infrastructure and other costs. The net effect of the realignments is to transfer approximately 3.5 million direct labor hours and to eliminate 37 production lines across the five depots. These actions will allow the Air Force to demolish or mothball facilities, or make them available for use by other agencies. These consolidations will reduce excess capacity, enhance efficiencies, and produce cost savings without the one-time costs associated with closing a depot. Air Force actions to reduce depot capacity will result in a reduction of real property infrastructure equal to 1.5 depots and a reduction in capacity equivalent to about two depots.

MAIN FACILITIES REVIEWED:

The following facilities were toured:

- F-15 Depot Maintenance area,
- JSTARS and B-1 beddown areas,
- WR-ALC SOF team
- C-141 Depot Maintenance area,
- Technology and Industrial Support Directorate
- Electronic Warfare Management Directorate
- Avionics Management Directorate

For each facility, a description of the work performed; data describing annual workload, one-shift capacity, two-shift capacity; and workload transfers resulting from DoD's base closure recomendation was provided.

The tour of the F-15 facility highlighted a new computer application. The F-15 facility is prototyping the Programmed Depot Maintenance Scheduling System for the DoD's Joint Logistics System Center, a multi-billion dollar computer system up-grade program. This application will reduce Air craft flowdays and increase maintenance capacity.

Warner Robins will be receiving JSTARS and B-1 aircraft during FY 1996. No significant issues were highlighted.

The WR-ALC SOF team manages the full spectrum of SOF aircraft to include; C-130 gunships, combat talons, combat tankers, the SOF variant of the C-141 and SOF helicopters. The tour highlighted two unique capabilities developed by WR-ALC, the secondary liquid oxygen converter for the AC-130H and bicarbonate of soda stripping process, The oxygen converter allows for a higher altitude profile and therefore increased survivability. The bicarbonate stripping process has resulted in a 96% reduction in the use of hazardous wastes. The WR-ALC has been designated as the SOF Center of Excellence.

The WR-ALC provides integrated weapon system management of the C-141, the "... backbone of the Nation's strategic airlift fleet. " Prior to WR-ALC having in-house responsibility for C-141 isochronal inspection (ISO), the down time due to inspection was 53 days. Downtime is

now 14 days, resulting in increase availability, improved reliability and financial savings. The WR-ALC process is now being used as a model for other systems.

The Technology and Industrial support directorate is the largest WR-ALC directorate. TI manages:

- sheet metal repair facility (largest in the Air Force),
- machining manufacturing,
- F-15 wing repair capability,
- fastener capability (the only air craft grade fastener capability in DoD),
- propeller overhaul capability,
- sheetmetal manufacturing (the largest and most modern in DoD),
- composites and metal bond repair capability, and
- tubing manufacturing.

In addition to describing the work performed at WR, the tour highlighted the impact of the DoD base closure recommendations, as follows:

	annual workload (in 000's of hours)	impact from BRAC (in 000's of hours)
• sheet metal repair	680	loss of 191
• machining manufacturing	182	gain of 109
• F-15 wing repair	228	none
• fastener capability	unknown	none
• propeller overhaul	93	none
• sheetmetal manufacturing	72	loss of 30
• composites/ metal repair	211	loss of 148
• tubing manufacturing	9	gain of 17

The TI directorate also manages the product data support center. The Center is currently digitizing 44,000 technical manuals.

The tour of the Electronic Warfare Directorate highlighted unique Warner Robins capabilities to include: over 20 threat generators, and 2 anechoic chambers.

The Avionics Management Directorate provides integrated management of the electronic warfare product group, avionics product group and communication product group.

KEY ISSUES IDENTIFIED:

During the tour, Commission Stelle questioned whether the synergies of collocation reflected in the DoD data calls. Warner Robins staff responded that no, the response to the data call did not and could not reflect synergies. However, a measurement of "flowdays" could imply synergies. Commission Stelle commented that "the value of things being collocated should have been gauged through the data calls".

Commission Davis stated that the Commission Staff must immediately request data reflecting the effects of BRAC consolidations directly from the Air Logistics Center~~s Commanders.~~

COMMUNITY CONCERNS RAISED:

The Community outlined the history of community support for Warner Robins beginning with the donation of land in 1941. Most recently, local colleges include incorporate into curricula course which are exclusively designed to meet the technical needs of Warner Robins. The Community stated that the community support is translated into enhanced military value of Warner Robins AFB.

REQUESTS FOR STAFF AS A RESULT OF VISIT:

Commissioner Steel asked ~~is~~ if there was a legal prohibition on permitting private sector contractors from utilizing Air Logistic Center facilities. The Commission's legal staff is researching this.

Commissioner Davis suggested the Commission staff consider obtaining data which describes the impacts of BRAC workload transfers/downsizing actions directly from each ALC Commander. There appeared to be discrepancies between information discussed during the Air Force Hearing and the information briefed during the base visit.

Reese/Cross Service Team/03/29/95 5:25 PM

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DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION

SUMMARY SHEET

WARNER ROBINS AIR FORCE BASE

INSTALLATION MISSION

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- Provides support to F-15, C-141, C-130 aircraft, and accomplishes most helicopter depot level maintenance
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  Headquarters, United States Air Force Reserve
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DOD RECOMMENDATION

Downsize Warner Robins Air Logistics Center.

Consolidate the following workload to Warner Robins Air Logistics Center:
- Tubing Manufacturing
- Airborne electronics
- Airborne electronic automatic equipment software
- sheet metal repair and manufacturing
- machining manufacturing
- electronic manufacturing (printed wire boards)
- plating

DOD JUSTIFICATION

Reductions in force structure have resulted in excess depot capacity across Air Force depots. The recommended Air Logistic Center realignments will consolidate production lines and move workload to a minimum number of locations, allowing the reduction of personnel, infrastructure and other costs. The net effect of the realignments is to transfer approximately 3.5 million direct labor hours and to eliminate 37 production lines across the five depots. These actions will allow the Air Force to demolish or mothball facilities, or make them available for use by other agencies. These consolidations will reduce excess capacity, enhance efficiencies, and produce cost savings without the one-time costs associated with closing a depot. Air Force actions to reduce depot capacity will result in a reduction of real property infrastructure equal to 1.5 depots and a reduction in capacity equivalent to about two depots.

COST CONSIDERATIONS DEVELOPED BY DOD

The Air Force did not provide the following data for each of the Air Logistics Centers (ALC). The downsize inplace strategy requires every ALC to be realigned. It does not permit visibility of installation specific actions, but requires that the entire strategy be executed to achieve the Air Force-wide savings.

The following data described on the following 5 lines reflects Air Force wide savings:

- One-Time Cost: $ 183 million
- Net (Costs) and Savings During Implementation: $ 138.7 million
- Annual Recurring Savings: $ 89 million
- Break-Even Year: 2 years
- Net Present Value Over 20 Years: $ 991.2 million

MANPOWER IMPLICATIONS OF THIS RECOMMENDATION (EXCLUDES CONTRACTORS)

	Military	Civilian	Students
Baseline	**0**	**0**	**0**
Reductions	-8	-526	0
Realignments	0	0	0
Total	-8	-526	

MANPOWER IMPLICATIONS OF ALL RECOMMENDATIONS AFFECTING THIS INSTALLATION (INCLUDES ON-BASE CONTRACTORS AND STUDENTS)

	Out		In		Net Gain (Loss)	
Recommendation	Military	Civilian	Military	Civilian	Military	Civilian
TOTAL	(8)	(1168)	0	0	(8)	(1168)

ENVIRONMENTAL CONSIDERATIONS

- Volatile organic compounds, paint strippers, paints, solvents, phosohoric and chromic acids, oils cyanide and carbon remover used on base.
- Robins placed on National Priority List in 1987

REPRESENTATION

Governor: Zell Miller
Senators: Sam Nunn, Paul Coverdale
Representative: Saxby Chambliss

ECONOMIC IMPACT

- Potential Employment Loss: 1168 jobs (534 direct and 634 indirect)
- Macon Area Job Base: 157,770 jobs
- Percentage: .7 percent decrease
- Cumulative Economic Impact (1996-2001): .7 percent decrease

MILITARY ISSUES

- none at this time

COMMUNITY CONCERNS/ISSUES

The Community has not expressed an opinion of the downsizing of Warner Robins ALC.

ITEMS OF SPECIAL EMPHASIS

- Warner Robins does approximately 30 % of the airframe work and 34% of the air craft component work for the Air Force
- The Air Force rated Warner Robins AFB in tier 2 (middle ranking) and rated the depot activities in tier 1 (highest ranking).

Reese/Cross Service Team/04/10/95 9:10 AM

COST DATA

WHAT HAPPENS TO COST PER HOUR?						
		FY94	FY01	FY01	FY01	85% CAP
		ACTUAL	WKLD	REALIGN	DWNSZ 15%	6/10%
AIRCRAFT						
DPSH		2,664	1,755	1,755	1,755	2,439
$/HR		101.95	121.65	121.65	117.65	101.75
ELECT						
DPSH		2,227	2,933	3,385	3,385	4,157
$/HR		74.30	64.40	62.03	63.20	57.93
OTHER						
DPSH		2,069	1,899	1,656	1,656	2,213
$/HR		64.78	69.95	80.81	69.77	60.27
CENTER TOTAL						
DPSH		6,960	6,587	6,796	6,796	8,809
$/HR		82.05	83.89	82.83	79.47	71.30

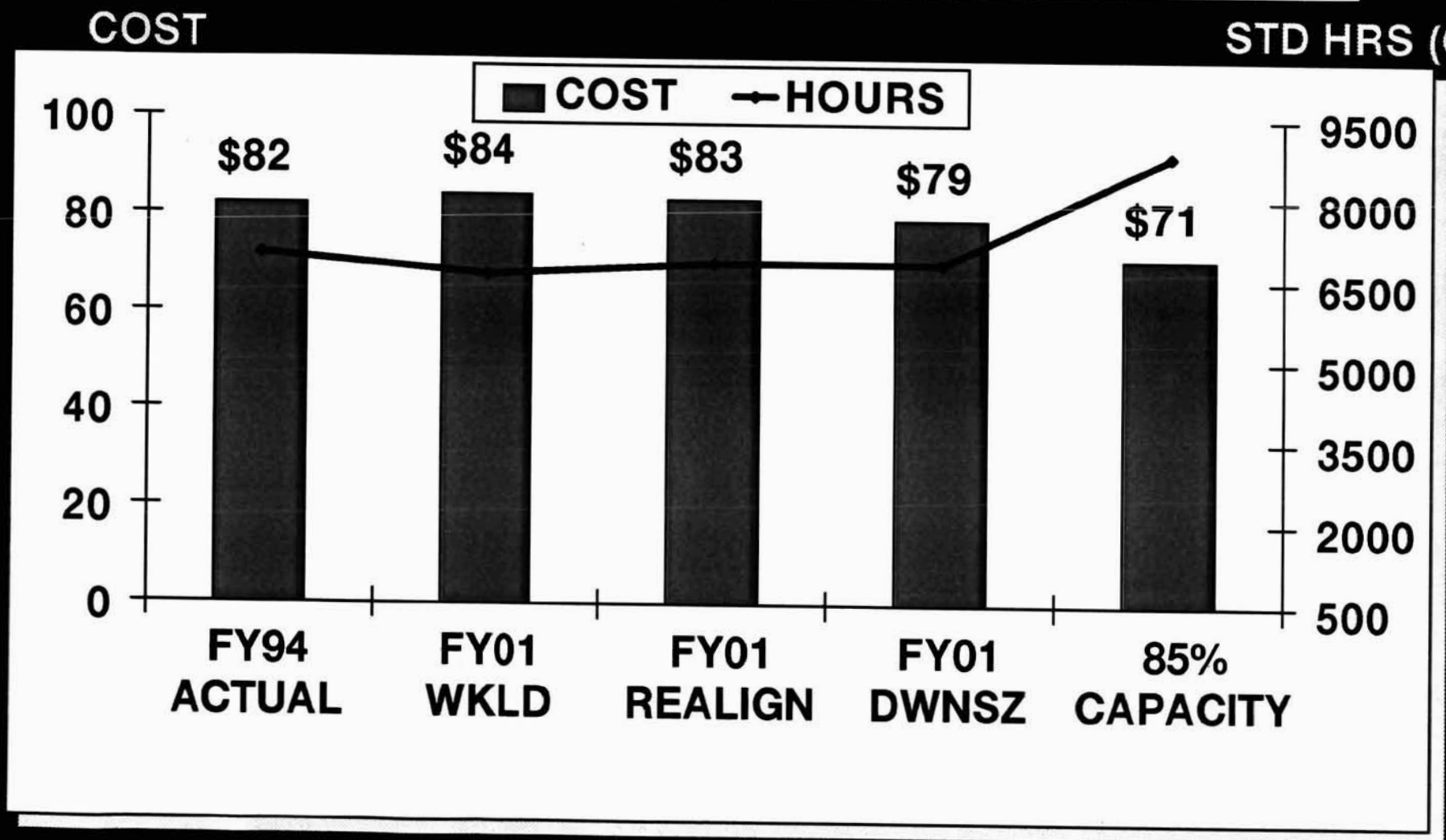
COST DATA

	FY94	FY01	FY01 REALIGN	-6%	-6/10%	-15%	85%WKLD 6/10%
****** RATES ******							
TOTAL ACFT							
DPSH	2,664	1,755	1,755	1,755	1,755	1,755	2,439
COST	101.95	121.65	121.65	120.05	117.49	117.65	101.75
DIR LAB	25.56	25.56	25.56	25.56	23.00	25.56	23.00
DIR MAT	38.34	38.34	38.34	38.34	38.34	38.34	38.34
OTHER	38.04	57.74	57.74	56.15	56.15	53.75	40.40
LAB-OH	14.18	21.52	21.52	20.23	20.23	18.29	14.55
LAB-GA	3.39	5.14	5.14	4.83	4.83	4.37	3.48
MAT	7.87	11.94	11.94	11.94	11.94	11.94	8.59
OTH	12.61	19.14	19.14	19.14	19.14	19.14	13.77
TOTAL ELECT							
DPSH	2,227	2,933	3,385	3,385	3,385	3,385	4,157
COST	74.30	64.40	62.03	64.04	61.30	63.20	57.93
DIR LAB	27.41	27.41	27.41	27.41	24.67	27.41	24.67
DIR MAT	18.51	18.51	18.51	18.51	18.51	18.51	18.51
OTHER	28.38	21.55	18.67	18.11	18.11	17.28	14.75
LAB-OH	11.21	8.51	7.38	6.93	6.93	6.27	5.65
LAB-GA	2.87	2.18	1.89	1.77	1.77	1.60	1.44
MAT	2.66	2.02	1.75	1.75	1.75	1.75	1.42
OTH	11.64	8.84	7.66	7.66	7.66	7.66	6.24
TOT ALL OTHER							
DPSH	2,069	1,899	1,656	1,656	1,656	1,656	2,213
COST	64.78	69.95	80.81	71.18	69.29	69.77	60.27
DIR LAB	18.89	18.89	18.89	18.89	17.00	18.89	17.00
DIR MAT	16.47	16.47	16.47	16.47	16.47	16.47	16.47
OTHER	29.42	32.05	36.75	35.81	35.81	34.41	26.80
LAB-OH	10.11	11.02	12.63	11.87	11.87	10.74	8.89
LAB-GA	2.40	2.62	3.00	2.82	2.82	2.55	2.11
MAT	6.48	7.06	8.10	8.10	8.10	8.10	6.06
OTH	10.42	11.36	13.02	13.02	13.02	13.02	9.74
CENTER TOTAL							
DPSH	6,960	6,587	6,796	6,796	6,796	6,796	8,809
COST	82.05	83.89	82.83	80.84	78.43	79.47	71.30
DIR LAB	24.17	24.17	24.17	24.17	21.75	24.17	21.75
DIR MAT	25.50	25.50	25.50	25.50	25.50	25.50	25.50
OTHER	32.38	34.22	33.17	31.18	31.18	29.80	24.05
LAB-OH	12.02	12.70	12.31	11.57	11.57	10.46	8.93
LAB-GA	2.93	3.09	3.00	2.82	2.82	2.55	2.17
MAT	5.79	6.12	5.93	5.57	5.57	5.57	4.30
OTH	11.65	12.31	11.93	11.22	11.22	11.22	8.65

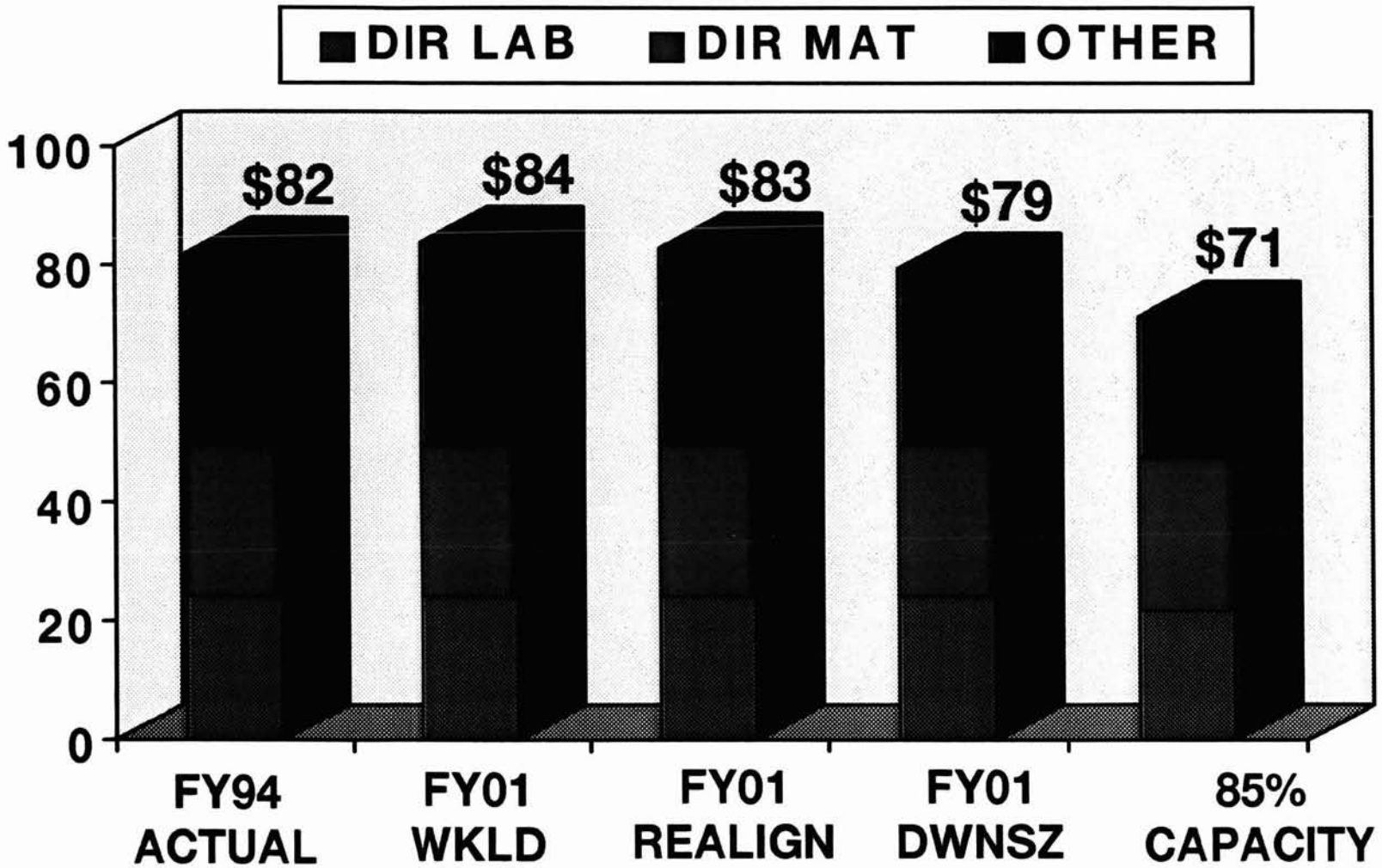
COST DATA

		FY94	FY01	FY01 REALIGN		-6%	-6/10%	-15%	85%WKLD
									6/10%
TOTAL ACFT (-TI)									
DPSH		2,664	1,755	1,755		1,755	1,755	1,755	2,439
COST		271,584	213,495	213,495		210,687	206,202	206,476	248,164
DIR LAB		68,091	44,857	44,857		44,857	40,372	44,857	56,106
DIR MAT		102,151	67,295	67,295		67,295	67,295	67,295	93,523
OTHER		101,342	101,342	101,342		98,535	98,535	94,324	98,535
LAB-OH		37,763	37,763	37,763		35,497	35,497	32,099	35,497
LAB-GA		9,026	9,026	9,026		8,484	8,484	7,672	8,484
MAT		20,959	20,959	20,959		20,959	20,959	20,959	20,959
OTH		33,594	33,594	33,594		33,594	33,594	33,594	33,594
TOTAL ELECT (AV+S									
DPSH		2,227	2,933	3,385		3,385	3,385	3,385	4,157
COST		165,467	188,884	209,976		216,765	207,486	213,944	240,823
DIR LAB		61,047	80,400	92,790		92,790	83,511	92,790	102,557
DIR MAT		41,225	54,294	62,661		62,661	62,661	62,661	76,952
OTHER		63,195	63,195	63,195		61,314	61,314	58,492	61,314
LAB-OH		24,968	24,968	24,968		23,470	23,470	21,223	23,470
LAB-GA		6,386	6,386	6,386		6,003	6,003	5,428	6,003
MAT		5,913	5,913	5,913		5,913	5,913	5,913	5,913
OTH		25,928	25,928	25,928		25,928	25,928	25,928	25,928
TOT ALL OTHER (TOT OTH + MFG + OTH EXCH)									
DPSH		2,069	1,899	1,656		1,656	1,656	1,656	2213
COST		134,027	132,828	133,815		117,869	114,740	115,539	133,385
DIR LAB		39,088	35,876	31,286		31,286	28,157	31,286	37,628
DIR MAT		34,078	31,278	27,276		27,276	27,276	27,276	36,450
OTHER		60,861	60,861	60,861		59,308	59,308	56,978	59,308
LAB-OH		20,919	20,919	20,919		19,664	19,664	17,781	19,664
LAB-GA		4,966	4,966	4,966		4,668	4,668	4,221	4,668
MAT		13,412	13,412	13,412		13,412	13,412	13,412	13,412
OTH		21,564	21,564	21,564		21,564	21,564	21,564	21,564
									-
CENTER TOTAL									
DPSH		6,960	6,587	6,796		6,796	6,796	6,796	8,809
COST		571,078	552,552	562,933		549,409	532,983	540,046	628,096
DIR LAB		168,226	159,210	164,262		164,262	147,836	164,262	191,625
DIR MAT		177,454	167,944	173,273		173,273	173,273	173,273	224,597
OTHER		225,398	225,398	225,398		211,874	211,874	202,512	211,874
LAB-OH		83,650	83,650	83,650		78,631	78,631	71,103	78,631
LAB-GA		20,378	20,378	20,378		19,155	19,155	17,321	19,155
MAT		40,284	40,284	40,284		37,867	37,867	37,867	37,867
OTH		81,086	81,086	81,086		76,221	76,221	76,221	76,221

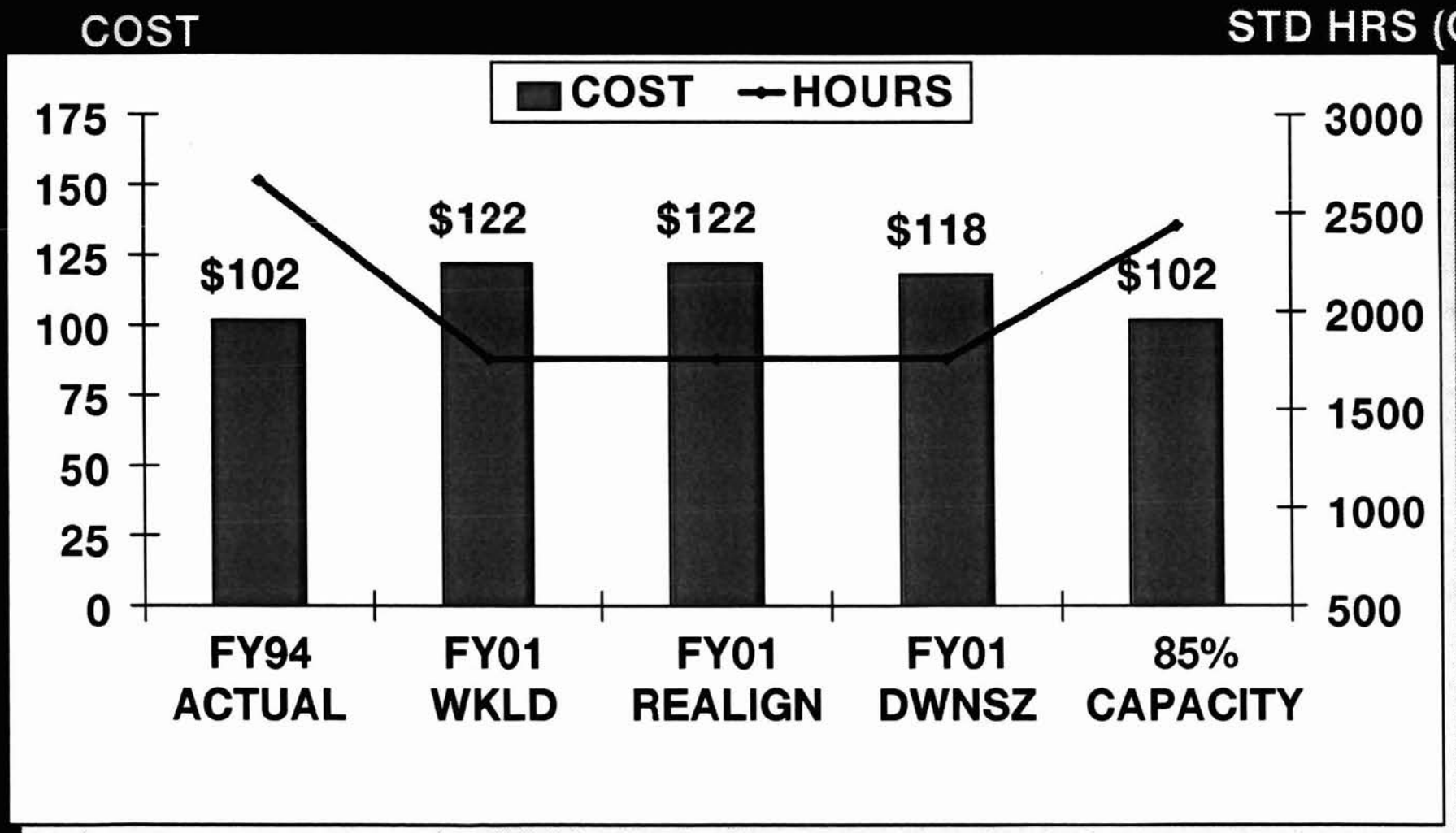
Total Cost Per Hour
Total WR-ALC



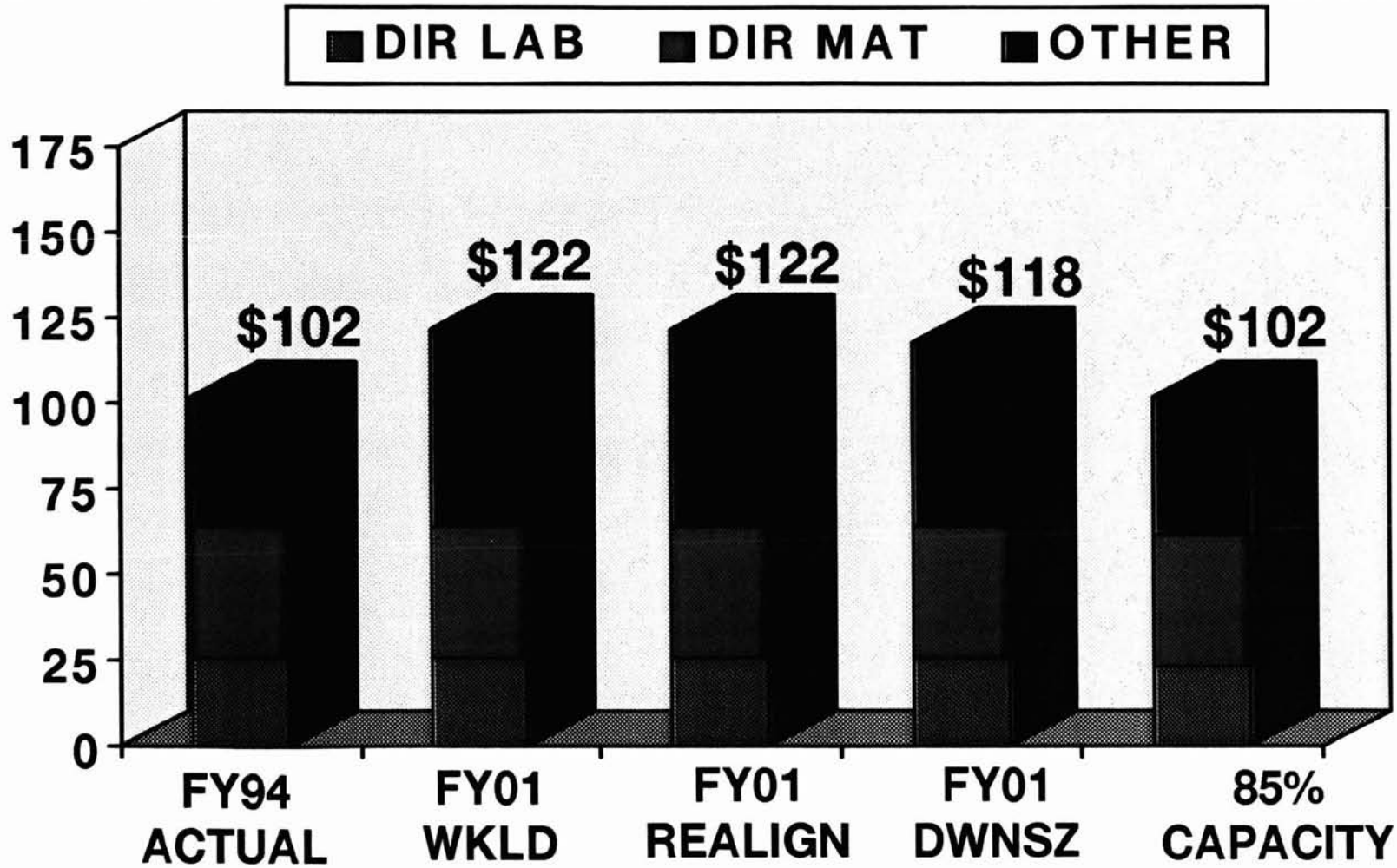
Total Cost Per Hour
Total WR-ALC



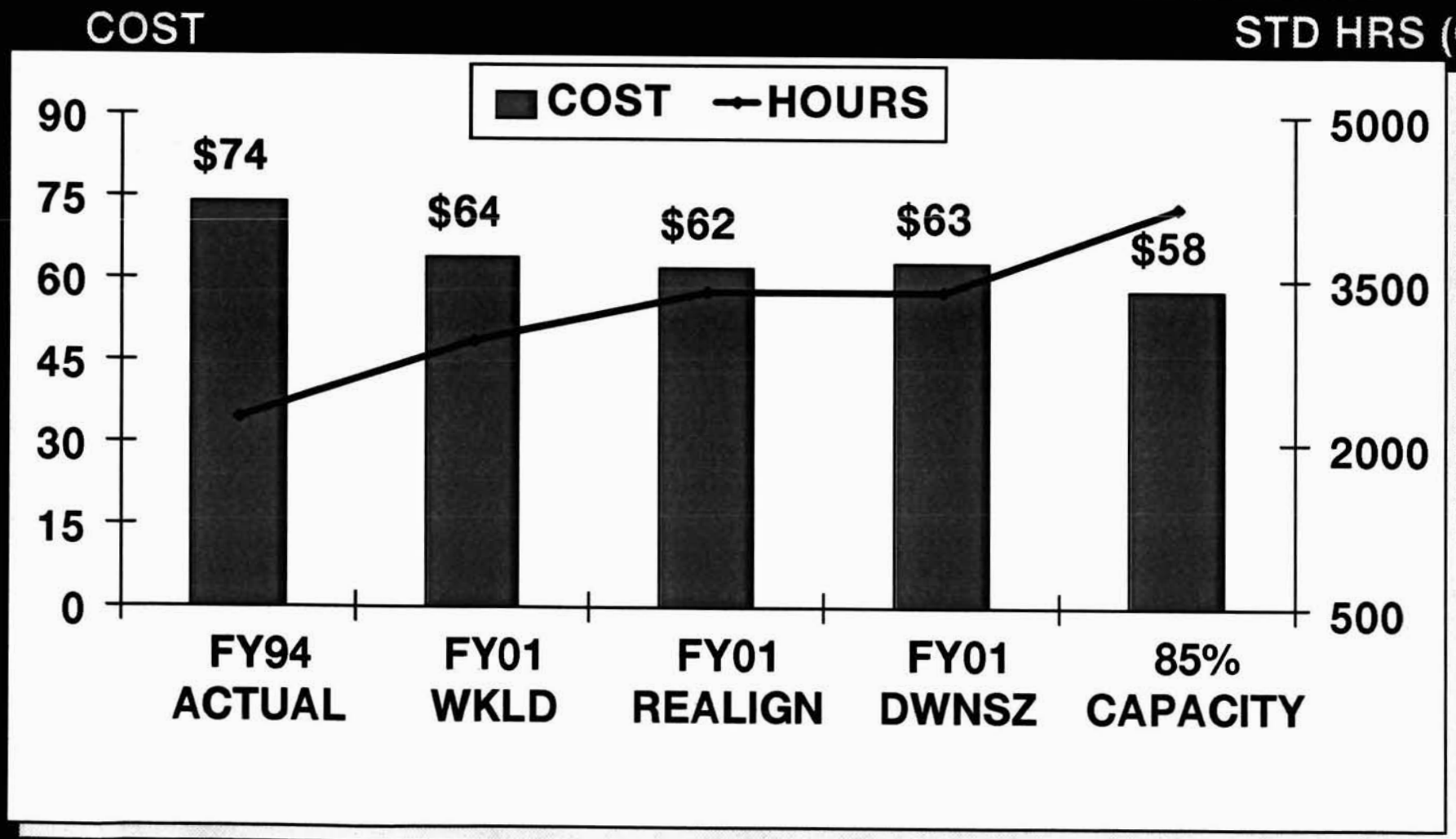
Total Cost Per Hour
Aircraft



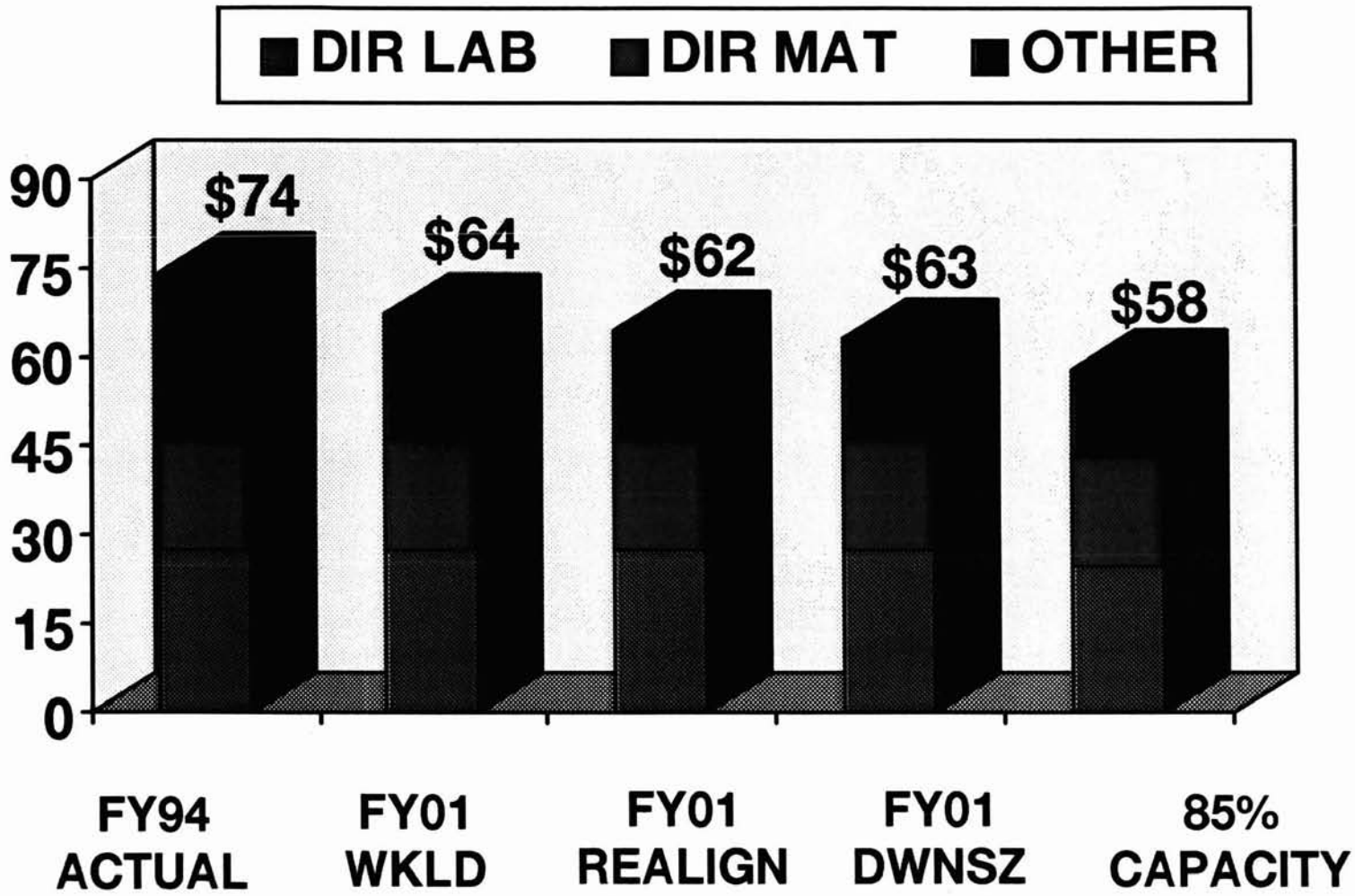
Total Cost Per Hour
Aircraft



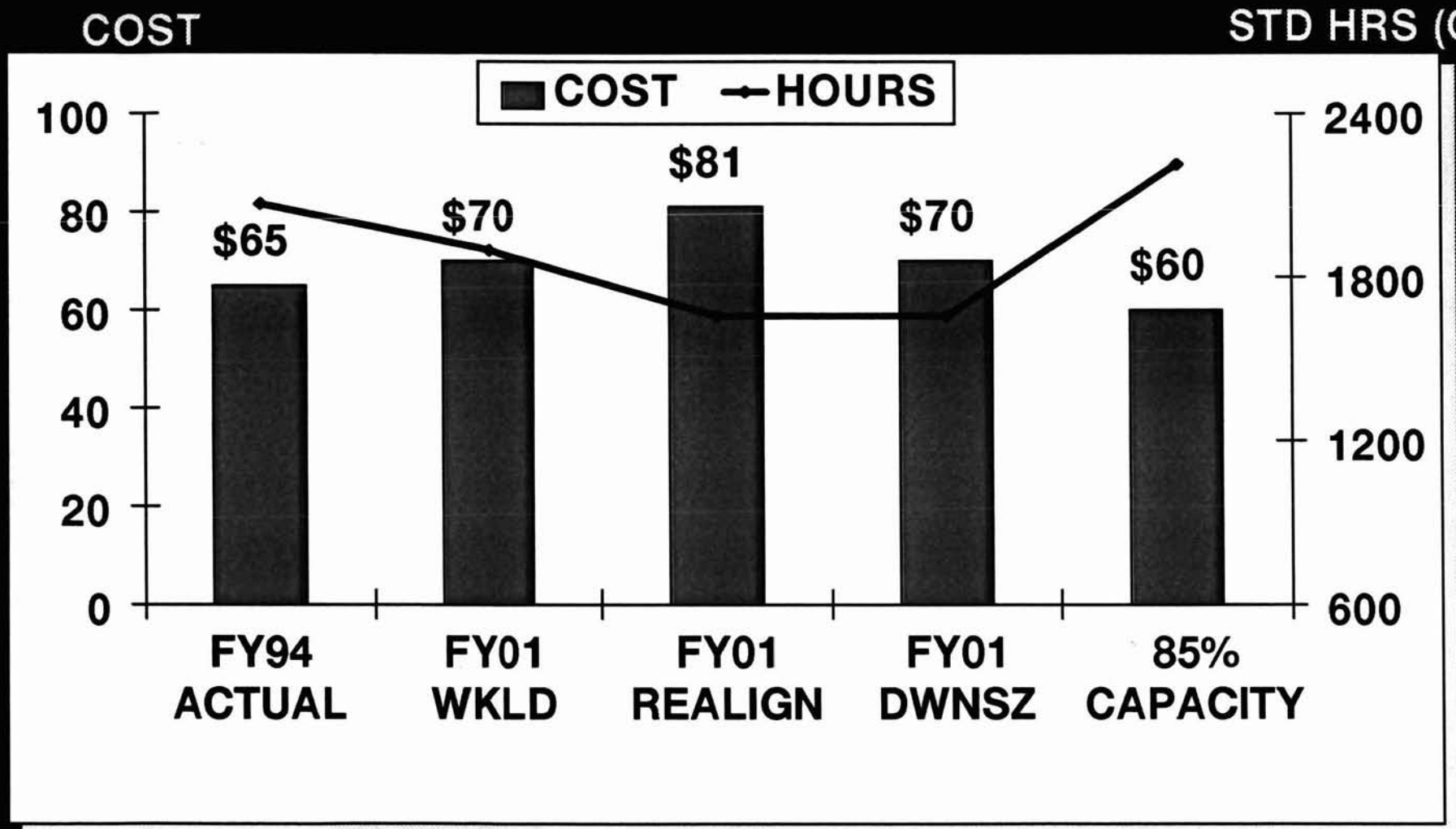
Total Cost Per Hour
Airborne Electronics



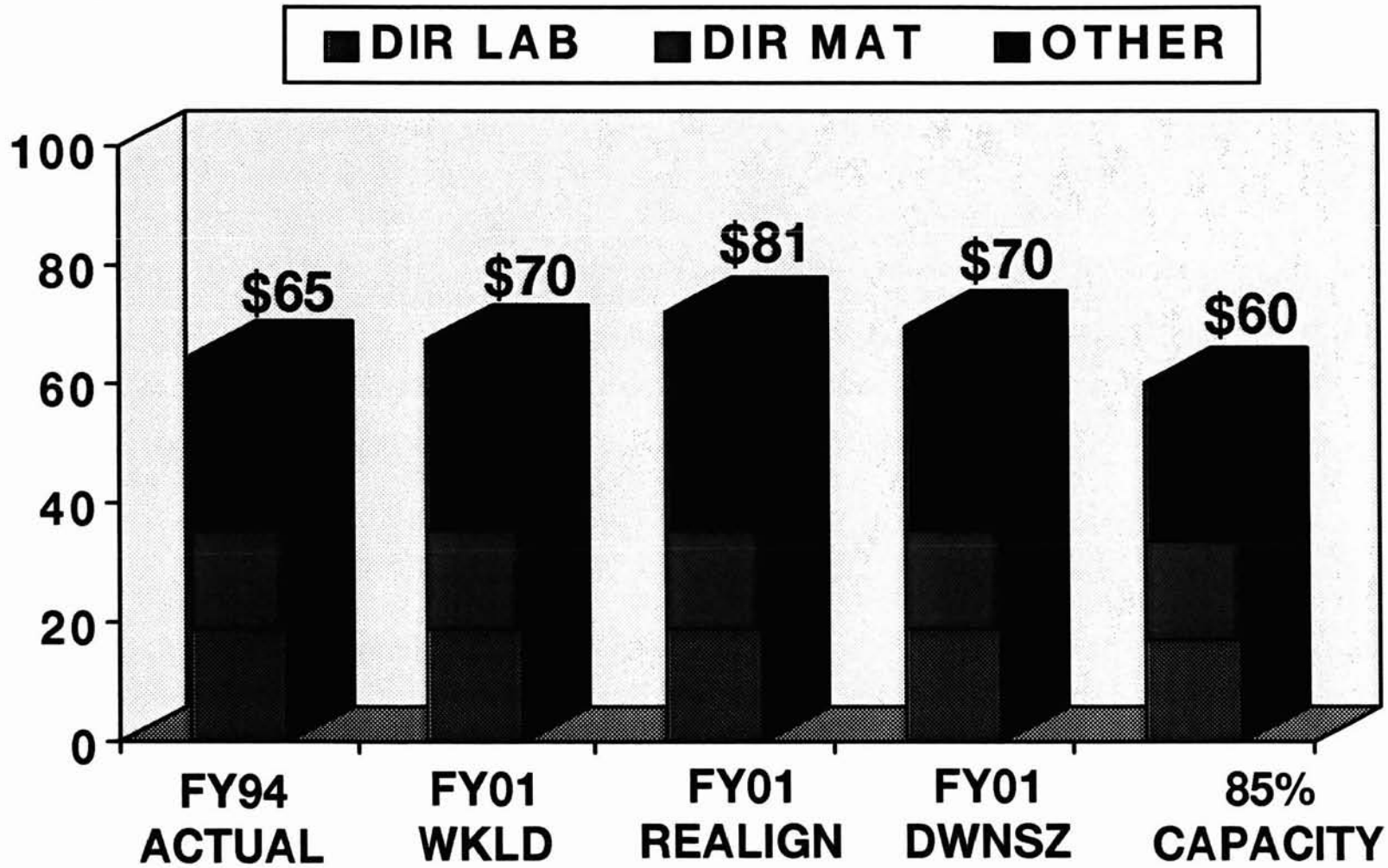
Total Cost Per Hour
Airborne Electronics



Total Cost Per Hour
Other



Total Cost Per Hour
Other



Document Separator

FAX

Date 03/30/95

Number of pages including cover sheet

TO: Ms. Ann Reese

Phone 703-696-0504
Fax Phone 703-696-0550

FROM: Col Alan J. Niedbalski
WR-ALC/TI
420 2nd Street, Suite 100
Robins AFB GA 31098-1640

Phone 912-926-3703
Fax Phone 912-926-7938

CC:

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please Comment

Ann, this is the Reader's Digest version; however, I do recommend that you take the 10 minutes or so to read the underlined portions of the package that George Fed-Exed to you yesterday. Any further questions, please do not hesitate to call.

Al Niedbalski

WR-ALC/TI

ADDITIONAL INFORMATION FOR CONSIDERATION ON COMPOSITES, METAL BOND AND RADOME WORKLOAD

The following information is extracted directly from Revision 1 of the Technical Repair Center Evaluation for Advanced Composites, Plastics and Metal Bonding with adjustments made to address the current command position to move only the MISTR and manufacturing workload to SM-ALC.

WORKLOAD:

- Largest workload of any ALC, actual for FY94 - 227,579 man-hours.
- Largest composites workload of any ALC, actual for FY 94 - 66,120 man-hours.
- Second largest metal bond workload of any ALC, actual for FY 94 - 104,880 man-hours.
- Lowest man-hour rate of any ALC
- Only WR-ALC and SA-ALC have mixed size, large and small aircraft, workloads.
- Only WR-ALC and OC-ALC are accomplishing on aircraft composite repairs of cracked metal structure in large quantities.
- Workload to be moved - current command position.
  [MISTR (56%) + Manufacturing (9%)] x 227,579 = 148,000. man-hours
- Savings due to **assumed** command directed 15%.
  148,000 man-hours x 15% savings x $53. per man-hour = $1,176,600.
- Cost Increase due to difference in manhour rates between WR-ALC and SM-ALC.
  [148,000 man-hours-(15% x 148,000 man-hours)] x ($70./man-hour-$53./man-hour) = $2,138,600.
- Yearly recurring cost for shipment of parts.
  $3,074,425.
- Total **Recurring Additional Cost** per year due to workload move
  $2,138,600. + $3,074,425. - $1,176,600. = **$4,036,425.**

-- This does not include the one time cost for tooling duplication which was not considered in the TRC study due to the difficulty of establishing a realistic cost. The TRC study group assumed up front that all workload would be moved to avoid the need for duplicate tooling.

-- This does not include the one time cost to duplicate radome test ranges. The TRC study group realized that for efficiency and flow days, the radome test ranges must be co-located with the repair facility since, from experience, it is not uncommon to have to test the same radome 2 or 3 times during a repair cycle.

FACILITIES:

- All ALC's have the basic equipment and capability such as clean rooms, etch lines, autoclaves, trained personnel, freezers, ovens, etc.
- All ALC's, except SM-ALC, have the necessary water jet equipment for cutting composites.

- All ALC's have unique equipment to cover there specific workload, such as:
  -- Only WR-ALC and SA-ALC have the large autoclaves for large aircraft parts.
  -- Only SM-ALC has a high temperature autoclave necessary for high temperature materials.
  -- Only WR-ALC has the air transportable composite repair trailer for depot field team composite patching of metal structure.
  -- Only OO-ALC has an automated canopy polisher.

- All ALC's currently have the basic support shops necessary for timely and efficient support.
  -- Only WR-ALC and SM-ALC have chemical mill capability.
  -- Only WR-ALC has a fluid cell press for cost effective manufacture of complex contoured aluminum parts.

- All ALC's have the necessary NDI support, though it is accomplished with different equipment
  -- All ALC's have X-ray.

The following information has been extracted from previous WR-ALC studies on bonded structure repair methods and current ongoing studies.

- The Neutron radiography (N-ray) capability at SM-ALC is an additional NDI capability, though from our review **it is not well suited for use on thin skinned metal bond sandwich or composite structures.**
  -- N-ray **can be used to identify water**, but it **cannot differentiate** between water and other organic materials or materials containing hydrogen such as epoxy adhesives, sealants and resins which are inherent in bonded construction. Even SM-ALC uses X-ray as the decider as to what is and isn't water.
  -- N-ray has a special problem with current epoxy based composites (all composite parts on the F-15 and F-16) due to the epoxy based matrix of the material.
  -- Thin aluminum, such as honeycomb core, is transparent to N-ray. Therefore, X-ray is still required as part of the repair procedure to determine core condition.
  -- WR-ALC has been effectively using real time X-ray to identify water in bonded structure.
  -- We know of no prime contractor or airline overhaul facility using N-ray for aircraft NDI.

- WR-ALC is actively pursuing the use of thermography for detection of water (currently 3 units available) in metal bond and composite sandwich structure.
  -- Testing has shown that as little as 1 **cc of water** can be clearly identified.

  -- Thermography can differentiate between water and other fluids such as fuel and hydraulic fluid which **neither N-ray or X-ray can accomplish.**
  -- Thermography is easily portable, **the latest versions are hand held.**
  -- **Thermography is safe**, it can be readily used in a shop, hanger or ramp environment with no protection or unique safety measures.
  -- Thermography is relatively inexpensive, less than $100,000 per unit.
  -- Thermography is environmentally responsible.
  -- Thermography is currently being used by British Airways to identify water in bonded structure on commercial aircraft while on the ramp.

Document Separator

Ann,

Attached is a set of documents covering Non Destructive Inspection (NDI) for composite repairs done here at Warner Robins and how it compares to the Neutron Radiography process used at Sacramento. There is a lot of information here, but Col Niedbalski wanted to provide as objective a picture as possible. To do so he has provided analysis done by the F-15 directorate here on a McClelland proposal to use their process for F-15 inspections. The bottom line is that the NDI techniques used here are equal to, or better, than Neutron Radiography by itself. To get a quick grasp of the information, his recommendation is that you focus on the underlined portions of the data. Please feel free to call me, or Col Niedbalski, for further information.

George Falldine

TO: Ms. Reese 28 Mar 95

FROM: Col Alan J. Niedbalski (WR-ALC/TI)

Attached are several documents that quantitatively and qualitatively describe the relative cost and capability between SM-ALC and WR-ALC composite repair. I suggest reading only underlined areas (about 10 minutes required); however, I included the entire texts if anyone wants to get technical.

You will notice I included data/info on the neutron radiography (N-ray) issue from multiple sources for credibility including the F-15 directorate engineers, the Air Force Nondestructive Inspection Office, McDonnell-Douglas, and SM-ALC themselves.

The bottom line--N-ray can detect smaller amounts of water but makes more mistakes in identity than x-ray, must be verified by x-ray, costs more, and the small amounts of water that it detects will not cause the inflight problems originally feared. As you can see from the dates on the documents, the issue came to a head in late 1993 and early 1994, was decided, briefed and agreed to by all parties (i.e. HQ USAF, HQ ACC, USAF NDI office, and all users).

If you need any more information please call.

Alan J. Niedbalski

Col Niedbalski

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS WARNER ROBINS AIR LOGISTICS CENTER (AFMC)

20 JAN 1994

FROM: WR-ALC/TIE

SUBJ: Position Paper Regarding N-ray Versus X-ray

TO: WR-ALC/TIR

1. This concerns your request for a paper discussing neutron radiography versus X-radiography as related to possible F-15 workload.

2. Neutron radiography is a relatively new NDI tool which is similar to X-radiography except that it uses neutrons rather than X-rays as the penetrating radiation. Neutrons and X-rays differ in their interaction with materials, and for this reason neutron radiography can be used effectively to image many material combinations which cannot be handled by X-radiography. A common example of this is the detection of hydrogen-containing materials in metal parts or structures. Hydrogen has a quite high attenuation coefficient for neutrons, and this permits hydrogen-containing materials such as water, fuels, elastomeric seals, explosives, and adhesives to be located in heavy metal containers. As pertaining to aerospace applications, neutron radiography has been known to locate, though not necessarily differentiate, water, hydrated metallic oxides, sealants and adhesives, fuels, and other hydrogen-containing substances within metallic structures.

3. The problem neutron radiography has with composite structures is that composites contain organic resins, typically epoxy, which also contain hydrogen. Boron-epoxy structures compound the problem because boron is another great neutron attenuator. This means that the structure itself would muddle any image of moisture, adhesive irregularities, or other defects. Also, since aluminum and most other metals are relatively transparent to neutrons, the presence of metallic honeycomb damage or foreign objects within composite structures could also remain undetected.

4. Composite skins are relatively transparent to x-radiation, so moisture, foreign objects, and honeycomb damage are usually all readily located by X-radiography, either filmed or real time. Since the metallic skins of aerospace structures are usually thin and made of lightweight metals, they usually do not obscure the x-ray imaging of these same defects. X-radiography has the added advantage of being able to detect variations in metallic skin thicknesses thereby locating corrosion damage directly, without relying on the presence of water or wet products of corrosion.

5. WR-ALC has been tracking the use of neutron radiography for over 20 years; we experimented in 1974 with the use of the neutron-emitting isotope Californium-252. While the growing use of accelerators and reactors has increased the speed, safety, and image quality of neutron radiography, the physics of the method still remain the same, and we have not been able to endorse the method, especially for composite parts. We should also note that

while neutron radiography is being used by aerospace contractors to check the presence and condition of munitions, propellants, elastomeric seals, etc., in metallic weapon components, we are not aware of any contractor using or advocating the method for moisture or corrosion detection, particularly in composite parts.

6. At WR-ALC we have been successful in using X-radiography to locate moisture, foreign objects, and impact or corrosion honeycomb cell damage in either metallic- or composite-skinned structures. We have the equipment, personnel, and facilities for both real-time and filmed radiography and are able to inspect any bonded structure, including any on the F-15.

7. At WR-ALC we are presently experimenting with thermography to find water in composite structures. It has been demonstrated that one drop of water can be readily found in F-15 rudders. We will try this method on the thicker parts in the near future.

8. We suggest that a test be carried out to settle the X-ray versus N-ray issue. This test could be monitored by the Air Force NDI Program Office to insure there is no inpropriety in the test. The test could be made in the following manner. WR-ALC/LF would furnish one repairable horizontal stabilizer leading edge. WR-ALC/TI would dry the part and NDI engineers would then inject known amounts of water in various areas of the structure. They would then be inspected using X-ray, real time X-ray and thermography. The equipment operators would not be told where the water was injected. All results would be recorded. The part would then be dried again and sent to SM-ALC. The part would then be dried again to insure that no water was entrapped during shipment. The same engineers would then inject the same amounts of water in the same places. SM-ALC would then perform an N-ray inspection of the part. After this they could perform any other inspection they desire. This test should finally settle the differences between claims of water detection capability.

9. Please advise if you desire us to conduct the above test. If so, we will provide you the costs and suggested schedule with milestones. Our point of contact is Mr Don Hazen, WR-ALC/TIEDM, DSN 468-4489.

Stanley K. Finley

STANLEY K. FINLEY
Actg Chief
Tech & Engrg Sciences Div

WR-ALC/TI

ADDITIONAL INFORMATION FOR CONSIDERATION
ON
COMPOSITES, METAL BOND AND RADOME WORKLOAD

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-- Largest composites workload of any ALC, actual for FY 94 - 66,120 manhours.
-- Second largest metal bond workload of any ALC, actual for FY 94 - 104,880 manhours.
-- Workload to be moved - current command position.
{MISTR (56%) + Manufacturing (9%)} x 227,579 ≈ 148,000. manhours
-- Savings due to assumed command directed 15%.
148,000 manhours x 15% savings x $53. per manhour = $1,176,600.
-- Cost Increase due to difference in manhour rates between WR-ALC and SM-ALC.
(148,000 manhours-15% x 148,000 manhours) x ($70./manhour-$53. manhour) = $2,138,600.
-- Recurring cost for shipment of parts.
$3,074,425. PER year
-- Total **Recurring Additional Cost** due to workload move
$2,138,600. + $3,074,425. - $1,176,600. = **$4,036,425.**
-- This does not include the one time cost for tooling duplication which was not considered in the TRC study due to the difficulty of establishing a realistic cost and the TRC study group assumed up front that all workload would be moved to avoid the need for duplicate tooling.

- TYPES OF WORKLOAD:

-- Composites:
--- Large and small aircraft parts.
--- Primary and secondary structure.
--- Repair, remanufacture and new manufacture.
--- Using boron, graphite, Kevlar and fiberglass materials.
-- Metal Bond:
--- Large and small aircraft parts.
--- Primary and secondary structure.
--- Repair, remanufacture and new manufacture.
-- Composite Patch:
--- Composite repairs of cracked primary metal structure, over 175 aircraft repaired to date.
--- Capability to field team repair with Air Transportable Composite and Honeycomb Repair Shop (ATCHRS) which is fully self sustained.
-- Radomes:
--- Large and small aircraft.
--- Co-located test range for testing of all radomes.

- FACILITIES:

-- All ALC's have the basic equipment and capability such as clean rooms, etch lines, autoclaves, trained personnel, etc.

-- All ALC's have unique equipment to cover there specific workload, such as:

--- Only WR-ALC and SA-ALC have the large autoclaves (15' diameter) necessary for large aircraft parts.

--- Only SM-ALC has a high temperature autoclave necessary for high temperature materials.

--- Only WR-ALC has the air transportable composite repair trailer for depot field team composite patching of metal structure.

--- Only OO-ALC has an automated canopy polisher.

-- All ALC's have the necessary NDI support, though it is accomplished with different equipment

--- All ALC's except SM-ALC use radiography to identify moisture. WR-ALC evaluated the neutron radiography used by SM-ALC (see attached documentation) and found it to be inappropriate for identifying moisture in either metal bond or composite aircraft construction. This position was substantiated by SM-ALC (see attached letter). WR-ALC is currently pursuing the use of thermography to identify moisture. This approach is portable, safe, inexpensive and has been used extensively by a commercial airline for on aircraft evaluation of bonded structure.

-- All ALC's currently have the basic support shops necessary for timely and efficient support.

--- Only WR-ALC and SM-ALC have chemical mill capability.

--- Only WR-ALC has a fluid cell press for cost effective manufacture of complex contoured parts

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS WARNER ROBINS AIR LOGISTICS CENTER (AFMC)

LFEFS RECORD COPY

9 DEC 1993

FROM: WR-ALC/LF
296 Cochran St
Robins AFB Ga 31098-1622

SUBJ: Proposal To Use Neutron Radiography to Prevent Inflight Failures of F-15 Horizontal Stabilators

TO: See Distribution

1. The proposal to use the N-Ray facility at SM-ALC to eliminate F-15 "sharkbites" has re-emerged via a paper written by CMSGT Brauer, Air Force Safety Agency, Directorate of Nuclear Surety. Summarized, the report proposes that F-15 field units send horizontal stabs to SM-ALC for inspection/repair. It argues that N-Ray's superior moisture detection capability will find small amounts of entrapped water that the current field and WR-ALC depot X-Rays are missing. The assumption is that undetected small amounts of moisture are responsible for the majority of sharkbites.

2. There are both logistics and technical issues that must be addressed to evaluate this proposal. We also prefer a problem oriented approach, i.e. first look at the overall sharkbite problem, and see if any available technology, including N-Ray, could be a cost effective improvement. Focusing on N-Ray risks a "technology in search of a problem" force-fit pitfall.

3. To start the dialogue we have prepared a rather lengthy paper, attached, summarizing most of what we know and don't know about sharkbites. Request all interested parties research this paper and reply with their comments.

4. Further, we request an indication of your interest in holding a conference on this subject, at which time Chief Brauer could brief his proposal along with any other proposal from any interested party. We feel this open exchange of views will be in the best interests of the primary member of the F-15 community, the field units. With the current funding controls in their hands, field units must have the primary input on where precious maintenance dollars are spent.

5. We need to resolve this as soon as possible. Please reply by the end of December, so a conference may be scheduled in early January if necessary.

6. Point of contact is Rick Jones, WR-ALC/LFEFS, DSN 468-5476.

WILLIAM D. BUTLEY
Colonel, USAF
F-15 System Program Director

2 Atch
1. Distribution List
2. Discussion Paper

COORDINATION

TECHNICIAN: _____
ENGINEER: _____
UNIT: _____
SECTION: R Jones 6 Dec 93
BRANCH: FFW (6)

E 1 of 10

F-15 HORIZONTAL STABILATOR LEADING AND TRAILING EDGE INFLIGHT LOSSES

or

Everything You Always Wanted To Know, etc. About "Sharkbites"

By
Rick Jones
Chief, F-15 Structures Engineering
F-15 System Program Office
Warner Robins Air Logistics Center

-The exact failure mode of a "sharkbite" has never been positively identified. Examination of failed components is very difficult, because the lost portion is never recovered, and the remaining portion is usually damaged so severely by the breakup that any evidence is obscured. In a few cases, some evidence of corrosion was found in the area of separation, but not always. Moisture in the remaining segment cannot be presumed to have been there prior to breakup. No fatigue indications have been reliably reported by the independent labs who have evaluated damaged stabs. Without precise failure mode determination, we are forced to hypothesize possible failure modes based on the design of the component and its operational environment.

-Because of the manner in which honeycomb components sustain their design loads, disbonding of the skin from the core must be the event immediately preceding failure of a honeycomb component operating within its design parameters. Of course, an intact honeycomb component may fail if subjected to loads beyond design loads. In this case, the failure mode need not require a disbond preceding failure. The load necessary to cause failure would be a function of the margin of safety that was achieved in the design and manufacture, minus any degradation caused by in-service history.

- Most honeycomb components operate as a form of cantilever beam, with external loads reacted primarily by compressive and tensile stresses in the skins along the moldline. The function of the core is to maintain the skin alignment with the tension and compression stresses. Of the two, compression is the most critical. If the skin under compression is not firmly bonded to the core, it will buckle under the compressive stress, rapidly leading to total failure of the component. The tendency of the skin to buckle under compressive stress depends primarily on how much area of skin is disbonded from the core and to some extent how the disbonded area is oriented with respect to the principle stresses. Long, irregular disbonds with short widths may be worse if oriented across the main load path, even though the total area of disbond remains relatively small.

-When sufficient disbonding occurs, the component is no longer able to withstand design loads. The exact amount of disbonding necessary to weaken F-15 stabilator components to failure is not known. Current T.O. limits were determined by conservative analysis only, based heavily on subjective judgment, since no actual testing was done. The limits are very small, allowing only 4 square inches of disbonding before the component must be replaced and sent to the depot for repair. The only data available is the examination of disbonded components that were returned to depot before failure and nearly all of them exceeded the T.O. disbond limit. However, just because these components survived with a given level of disbond, there is no assurance that others would, since the conditions of loading and the other margin of safety variables may be different.

available, no matter how small. During flight, changing air flow around horizontal stabs also creates hundreds of pressure cycles per flight, especially around the leading and trailing edges. Once inside, the water vapor condenses. Multiple repeat cycles of pressure and humidity changes have proven their ability to fill a semi-closed container, as the packaging industry found out long ago. There is even a third method of water entry. The adhesives used in honeycomb construction are often hygroscopic, that is, they have a tendency to absorb moisture from the atmosphere. Some film adhesives incorporate a binder, or scrim cloth backing, that can also wick moisture into the seam if the edge of the scrim cloth is exposed. That is why it is so important to maintain good seam and edge seals in service.

-Unfortunately, the physics of the problem creates great difficulty in getting the moisture back out through the same tiny openings. Theoretically, surrounding the stab with a 100% dry atmosphere for a long enough period of time will drive the moisture back out through any opening using the vapor pressure differential principle. One way to do this is in an oven, which is the primary method in use at depot, although usually beyond field capability. The field can heat the component enough to vaporize the moisture using heat blankets or lamps, but lacking significant vapor pressure differential between outside air and inside the component, this water vapor will only migrate further within the component. Holes can be drilled in the skin and dry air pumped through, in conjunction with heat blankets, but this has proven only marginally effective, and then the field must repair the damage (holes) they caused getting the moisture out. The repaired holes then become another potential source of later moisture intrusion. The only truly effective way to ensure all moisture is removed properly is to remove all or major portions of the skin and dry the entire component in an oven or autoclave, where sufficient vapor pressure differentials will readily drive the moisture from the open core. Re-skinning requires an autoclave cure, making this process a depot only procedure. Even at the depot, this procedure is time-consuming, expensive, and not 100% effective. Stabs repaired in this manner have been returned to depot with more moisture indications after much less time in service than a new component. For this reason, depot TRC policy is to replace any forward or aft honeycomb box with a newly manufactured unit during stab overhaul whenever extensive moisture or disbonding is found.

-There are no allowable field limits on moisture, and if they can't get it out, tech data tells them to NRTS the component to the Technical Repair Center at WR-ALC. However, some field units have consistently requested some allowable level of indicated moisture, based on their observations that some components have displayed an apparent long history of moisture intrusion without failure. Logistics considerations have sometimes forced the field to fly components that have indicated moisture via X-Ray inspection. The only logical explanation is that either the field's X-Ray inspections are falsely indicating moisture or somehow that moisture is not causing any corrosion and subsequent disbonding to occur, for reasons previously discussed.

-Small amounts of water indications are particularly troublesome. Since field drying techniques are very limited, and the depot techniques are so invasive, expensive, and sometimes unsuccessful, very small moisture indications force a very difficult judgment call. First is the uncertainty about whether you are really seeing moisture in the X-Ray. Second, performing major surgery to try to get these few honeycomb cells cleared up risks more damage to the component than is being risked by leaving it alone. Small amounts of moisture are less likely to cause rapid corrosion or freezing disbonds, as previously discussed. This view is supported by field

-We have investigated a new technology for detecting unknown impacts, using micro-encapsulated dye pellets introduced into the paint coating. When struck, the capsules break, and a visible stain appears in the paint coating, leaving a tell-tale "bruise." This bruisable paint, under development at Wright Labs, would permit subsequent disbond inspections. Unfortunately, the micro-encapsulated dye pellets are incompatible with the F-15 paint system. Other problems preventing adoption are difficulties in fine-tuning the level of impact force that produces the bruise to avoid nuisance indications, and a somewhat cool reception by field units because of the paint touch-up workload it would likely cause. We are still monitoring development, however, and have indicated our needs to the scientific community in this area.

-We have placed considerable emphasis on finding and preventing moisture intrusion into honeycomb components, because of the known evidence linking its corrosion potential and disbonds. In addition, T.O. guidance strongly recommends rigorous visual inspections and routine maintenance to keep moisture seals in top condition to avoid intrusion paths. Field inspection for water intrusion via X-Ray can also detect other types of damage, such as FOD. damaged core, cracks, etc. However, there is no known field level inspection that would detect such things as weakened adhesive or small to medium levels of corrosion damage within the honeycomb core.

-Sharkbites nearly always occur during operations near the edge of the approved flight envelope, either during aggressive maneuvering of air combat training or during high-speed operation. This is to be expected, since flight loads on the stab are quite high during this time. Also, high speed flight raises skin temperature and it is well known that this reduces adhesive strength. Many sharkbites were reported very near or at the edge of the approved flight limits. Although they cannot be classified as overload, an unproved theory has been hypothesized that rapid stick movement could overload the stabilator during the process of rotating the aircraft to a higher angle of attack. Rapid stick movement would cause large stabilator deflection, and thus high stabilator loads, since the pilot is commanding a high pitch rate and the aircraft is attempting to comply. Rapid roll stick movement could also cause large stab deflections. High stab loads would not be felt by the pilot nor the aircraft's systems because it would occur before the angle of attack change and subsequent G-loading. Although all but a few sharkbites were reported as having occurred at G-loadings within flight manual limits, some have occurred under circumstances highly suspicious of being outside approved flight manual envelopes, according to informal contacts with field personnel, although not officially reported as such.

-This leads to the distinct possibility that a few sharkbites may have resulted from repeatedly operating stabs that are intact but weaker than the average due to a combination of factors as already discussed, at or near the edge of the design envelope. One unit had three sharkbites in rapid succession after they began operating with the newer, higher powered -220 and -229 engines. The failures occurred during Mach 2+ Functional Check Flights and included one brand new box received from McDonnell production. A hypothetical failure mode would be a flight starting out with an intact stab, but at some point the bond line would separate under repeated high stress, perhaps combined with high temperatures. The initial bond failure would probably be at the weakest point, perhaps an area where joint fit up was less than perfect, or amount of adhesive was less, where the skin had been impacted, etc. The area of disbond would grow, possibly quite rapidly, until breakup occurred. Obviously, detecting an intact but weak stab would require some type of load test that would be difficult to develop and implement. Detecting weak joints

Also, without precise failure mode knowledge, it would be difficult to develop a proof load procedure that would guarantee protection against all hazards. This idea is really not feasible at all, but is discussed because it has been brought up in the past.

--Develop a rotating program of N-Ray inspections where field units would periodically send stabs to SM-ALC for evaluation. N-Ray has a capability to detect very small amounts of moisture within honeycomb components. Corrosion products, since they usually contain the Hydrogen atoms that attenuate N-Ray beams, might also be detected. The potential for N-Ray to prevent sharkbites therefore appears to depend on a presumption that these very small amounts of water and corrosion that are presently undetected by other methods are responsible for a significant number of sharkbites. N-Ray's superior moisture and corrosion detection capability will presumably detect stabs at risk that field inspections cannot.

--To us, the technical merits of N-Ray is not the main issue. First, we have no evidence supporting the basic premise that most sharkbites are caused by small amounts of moisture or corrosion that are undetectable by current field methods such as X-Ray. To the contrary, evidence and theory point to disbonding from a variety of sources as the prime initiator of sharkbites. Second, since N-Ray is only available at SM-ALC, it does not target the prime opportunity to prevent sharkbites in the field. N-Ray therefore does not possess the characteristics of a ideal new sharkbite prevention capability as previously discussed, despite its technical merits. Use of N-Ray will pose logistics problems, and there will be difficulty in establishing criteria for deciding which stabilators need to be sent and how often, since it must be assumed that the target stabs for this program will be those that have passed field inspections and are therefore presumed serviceable. Also, the moisture detection capability of the widely available and less expensive X-Ray, while perhaps not quite as good as N-Ray, has still been determined by independent NDI experts to be adequate to find risk levels of moisture.

--Although not the main issue, there are technical issues with N-Ray that can be debated. N-Ray typically detects only Hydrogen atoms which can be present in sealant, absorbed in adhesive, or otherwise present in forms other than moisture, and which may pose little risk. Moisture or hydrogen atoms undetectable by X-Ray have not been judged likely to place a component at risk. Also, there have been documented cases where X-Ray detected moisture that N-Ray missed. N-Ray also cannot detect core distortion, FOD, or cracks, nor by itself alone readily differentiate between free water and any other material containing hydrogen. Furthermore, N-Ray cannot be used to image structure underneath composite skins, since they also attenuate the N-Rays. Therefore the main torque box of the stabilator would still have to be X-Rayed since it has boron skins. SM-ALC N-Ray technicians nearly always use X-Ray to corroborate N-Ray findings, so the costs of N-Ray would be entirely additive. Also substantial, since it requires operation of a Nuclear Reactor; exact costs are elusive. For all these reasons, N-Ray has not been endorsed by the independent WR-ALC NDI experts, nor the USAF NDI program manager at SA-ALC, as a solution to the F-15 honeycomb problem.

-Develop a new field inspection technique to detect stabs at risk. Difficult to do since we do not know the exact failure mechanism. We have always supported and demanded better disbond techniques for field use, but the NDI research community has been slow to respond to what is admittedly a difficult technical problem. New, computer aided inspection equipment offers promise, but is very expensive and may not be affordable to field units. A recent demonstration by Wright Labs and McDonnell Douglas Aerospace showed

10 Jan 1994

From: Bill Sutherland / SM-ALC/LAFFE

Subject: F-15 Horizontal Stabilizer Leading & Trailing Edge Failures

To: Rick Jones / WR-ALC/LFEFS

Rick:

I have reviewed your letter and report on the subject problem, and provided informal comments, attached. I probably gave you more than you wanted or needed, but your report was so thorough, and similar to the types of problems we had earlier in the F-111 life, that the F-111 related comments seemed natural. I also provided a copy of our F-111 engine bay N-ray / X-ray results, and the listing of the F-15 projects we have worked since the summer of 93.

Regarding your specific questions:

1. For small amounts of moisture found by Nray, we will ormally dry it out if possible, or leave it as is if it is extremely small. We do not arbitrarily cut open the structure to repair small amounts of moisture. Also, we use the Xray results liberally to help make the decision. A typical Nray result may indicate scattered moisture, which we will decide on repair using the Xray. Basically, if the X-ray shows no core or other substructure damage, we may conclude that the Nray finding is not moisture (probably fuel or sealant), and not repair it. This philosophy may not be valid if the part is to be exposed to high temperatures, or if the core is very corrosion resistant, but we feel comfortable with it for our engine bay panels.

2. Regarding the cost question of our horizontal stabilizer program, I can't give you a figure that could be related to the F-15 proposal that you are reviewing. Our stab is considerably larger than yours, and the MISTR accomplishes Nray and Xray of all the components, including the box section and the leading and trailing edges. The box inspection normally reveals moisture which drives it into a standard dryout effort, which can be repetitive. Frankly, if I was in your shoes, I would ask the SM-ALC proposers to show you the cost of their F-15 proposal compared to the costs of the F-111 stabilizer, and I would expect the F-111 costs would be higher.

In the way of summary, I offer the following comments. I believe you have correctly identified that the critical N-ray pplicability question is the amount of water required to cause n-flight failure. If that level is detectable by field level means, then Nray is not a strong candidate under the program

Atch B6

scenarios described in your report (sending stabs from the field to SM-ALC with no reported defects). Nray would be a reasonable candidate if the components were coming into a MISTR from either PDM or the field due to noted defects. We accept Nray as a valid incoming inspection on all of our F-111 MISTR bonded parts, on the merits of Nray alone. In your F-15 case, the economics of inspection at SM-ALC and repair at WR-ALC would weigh heavily against the technical merits of Nray, particularly when the parts are secondary structures.

If I can be of further assistance, don't hestitate to call. My DSN is 633-4224.

Bill J. Sutherland

BILL J. SUTHERLAND
Chief, Structures Engineering Section
F/FB/EF-111 System Program Mgmt Div
Aircraft Management Directorate

3 Atch
1. Comments on F-15 N-ray Stabilator Issue
2. F-111 PDM Panel N-ray / X-ray Results
3. F-15 Project Listing

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS WARNER ROBINS AIR LOGISTICS CENTER (AFMC)

04 FEB 1994

MEMORANDUM FOR WR-ALC/LF

FROM: WR-ALC/TI

SUBJECT: F-15 Horizontal Stabilator In-Flight Failures - INFORMATION MEMORANDUM

1. The Technology and Industrial Support Directorate (TI) non-concurs on the issue of having F-15 horizontal stabilators shipped to SM-ALC for the use of neutron radiography, squirtter and X-radiography for inspection of the major components to determine if water and corrosion are present.

2. Our technicians and engineers have reviewed all the documentation in CMSgt Brauer's proposal (see our attached response and supporting documentation) to prevent in-flight failures of F-15 horizontal stabilators. In response, we have put together the attached study which clearly documents that CMSgt Brauer's proposed course of action is not the best technical approach or economical means to correct the problem on F-15 horizontal stabilators.

3. We feel that it is in the best interests of the F-15 community to study the in-flight failures to determine the cause, prior to making any logistical decision that could have an impact on the end item sales price and F-15 mission capability. Therefore, you will find within our study the rationale with graphs and charts on why you should continue to use WR-ALC/TI to meet and support your requirements. Attached with our study, you will find a list of all the documented correspondence on the subject.

4. Request that TI receive an invitation to any future conferences concerning this subject matter. We look forward to working with your organization on this issue. If you have any questions concerning our study, please contact Mark Johnson/TIRFS at extension 65479.

CLINTON LEWIS
Director, Tech & Ind Support

Attachment:
TI Study

F-15 HORIZONTAL STABILATOR IN-FLIGHT FAILURES "SHARKBITES"

STUDY PREPARED BY

WARNER ROBINS AIR LOGISTICS CENTER

TECHNOLOGY & INDUSTRIAL SUPPORT DIRECTORATE

STRUCTURAL REPAIR DIVISION

F-15 HORIZONTAL STABILATOR IN-FLIGHT FAILURES

"SHARKBITES"

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Prepared by: WR-ALC/TIR

F-15 HORIZONTAL STABILATOR IN-FLIGHT FAILURES

"SHARKBITES"

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Prepared by: WR-ALC/TIR

F-15 HORIZONTAL STABILATOR IN-FLIGHT FAILURES

"SHARKBITES"

LIST OF ATTACHMENTS

SOURCE	TITLE	NUMBER
WR-ALC/TIE	POSITION PAPER REGARDING N-RAY VERSUS X-RAY	A
SM-ALC/LAFFE	F-15 HORIZONTAL STABILATOR LEADING & TRAILING EDGE FAILURES	B1
WR-ALC/LFEFS	DISPOSITION OF HORIZONTAL STABILATORS	B2
SA-ALC/LDN	PROPOSAL TO PREVENT INFLIGHT FAILURE OF F-15 HORIZONTAL STABILATORS	B3
HQ ACC/LGF	PROPOSAL TO USE NEUTRON RADIOGRAPHY (N-RAY) TO PREVENT FAILURES OF HORIZONTAL STABILATORS	B4
PACAF/LGM	PROPOSAL TO USE NEUTRON RADIOGRAPHY (N-RAY) TO PREVENT FAILURES OF HORIZONTAL STABILATORS	B5
WR-ALC/LF	PROPOSAL TO USE NEUTRON RADIOGRAPHY (N-RAY) TO PREVENT FAILURES OF HORIZONTAL STABILATORS	B6
AF/LG	F-15 STABILATORS-ACTION MEMORANDUM	C
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Prepared by: WR-ALC/TIR

F-15 HORIZONTAL STABILATOR IN-FLIGHT FAILURES

"SHARKBITES"

1.0 INTRODUCTION: WR-ALC/TIR would like to take this opportunity to address the proposal submitted by CMSgt Brauer, USAF regarding transferring the Air Force repair center for F-15 horizontal stabilators from WR-ALC to SM-ALC. We would also like to take this opportunity to provide our assessment of the in-flight failure problem of the F-15 horizontal stabilator ("sharkbites") and offer a viable solution to the problem. The term "sharkbite" refers to the tearing or ripping of aluminum honeycomb core and bonded external skin, while in flight, where the shape or appearance of the failure resembles the bite of a shark. The F-15 community has been plagued with this problem since the beginning of in-flight failures of horizontal stabilator components. Data from HQ AFSA/SECD shows that the first reported incident was in February of 1983. Many opinions on the possible causes of failure have been discussed, but still the exact failure mode of a horizontal stabilator has never been positively identified. On page one of his proposal CMSgt Brauer stated "*Disbonds caused by corrosion are by far the leading cause of shark bites.*" (Attch. D, CMSgt Brauer, 18 Oct). While corrosion caused by water is a factor in some skin to core disbondment, the exact amount of water, corrosion or disbonding necessary to cause failure is not yet known. We recognize CMSgt Brauer's concern for in-flight safety and appreciate his thoroughness in researching the "sharkbite" phenomenon, we at WR-ALC/TIR must disagree with the conclusions he has reached. Moving an entire workload from WR-ALC to SM-ALC based on the tenuous evidence given in CMSgt Brauer's report simply does not make technical or economic sense. Our opinion is shared by other F-15 community members (Atch. B3, B4, B5, and B6). We disagree with CMSgt Brauer's proposal based on current F-15 Engineering data and in-flight mishap reports addressing causes to the "sharkbite" problem. We share the opinion that

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"disbonds" weaken the F-15 stabilator components which eventually lead to in-flight failure. The paramount question should be, **"What causes the in-flight disbonds of the F-15 horizontal stabilator leading and trailing edge boxes?"** Until this question is answered the type of NDI technique employed is a secondary point. It is a well known fact in the F-15 community that the horizontal stabilator has a persistent problem with water intrusion. Consequently, what is the benefit of supposedly being able to detect smaller amounts of moisture? We are interested in attending any conference on this subject and will discuss any convincing proposals that will lead to a technically sound and cost effective solution to the problem.

In the following paragraphs we will examine data that has been collected by HQ AFSA/SECD on F-15 horizontal stabilator in-flight failures, CMSgt Brauer's recommendations, the various causes of "sharkbites", depot maintenance of F-15 horizontal stabilators, N-ray versus X-ray, and our recommendations. We feel that the evidence is clear that the proposal submitted by CMSgt Brauer does not offer a viable solution to the F-15 in-flight failure problem of the horizontal stabilator forward and aft boxes.

2.0 DATA ANALYSIS In January of 1993 HQ AFSA/SECD prepared a data run for WR-ALC/LF on all F-15 horizontal stabilator in-flight failures. The data base was queried from 1971 to date. The reason that the query began in 1971 was because their data base was developed in 1971. By utilizing this date we were ensured of getting a total report on all reported F-15 horizontal stabilator in-flight failures. During the ten year period of 1983 through 1992 there was a total of 59 flights where the horizontal stabilator delaminated in flight. On three of these flights there were double failures. For example, on one flight both the left hand and the right hand leading edges delaminated in flight. Consequently, this brings the total number of reported horizontal stabilator forward or aft box in-flight failures to **62, for the ten year period from 1983 through 1992**.

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The data was researched to determine the date of occurrence, operating speed, "G" force incurred, and which box failed. On **Figure 2.0-01** we have charted the occurrences broken down by left hand leading edge, left hand trailing edge, right hand leading edge and right hand trailing edge. Of the 62 occurrences, 49 were failures of the leading edge and 13 were failures of the trailing edge. If moisture was inducing corrosion then we feel that the failures would have been consistent between the forward and the aft box. Consideration must be given to the possibility that large amounts of moisture could have played a factor because the heat generated on the leading edge during supersonic flight could have produced a steaming effect in the leading edge that may have lead to disbonds. The X-ray technology that is available to all F-15 users could have detected the large amounts of moisture. However, this is only speculation on our part because we do not have data showing that steaming could have occurred, leading to delamination of the boxes.

The data was then sorted by year to determine if there were any trends over time. As depicted on **Figure 2.0-02** there has been a significant reduction in the number of reported occurrences from 1983 through 1992. From 1983 through 1986 there was an average of 8.25 in-flight failures per year of horizontal stabilator boxes. Then beginning in 1987 the number of occurrences significantly dropped. From 1987 through 1992 the average number of failures per year dropped to 4.7, even with the 1991 data included. If you exclude the 1991 data the average number of failures per year drops to 3.6. It must be remembered that 1991 saw the beginning of Operations Desert Shield and Desert Storm. The examination of this data reveals that the improved manufacturing and repair process that were instituted in 1983 began to pay off. WR-ALC/TIE was a key player in the manufacturing process changes, repair process changes and skin under-cut inspections.

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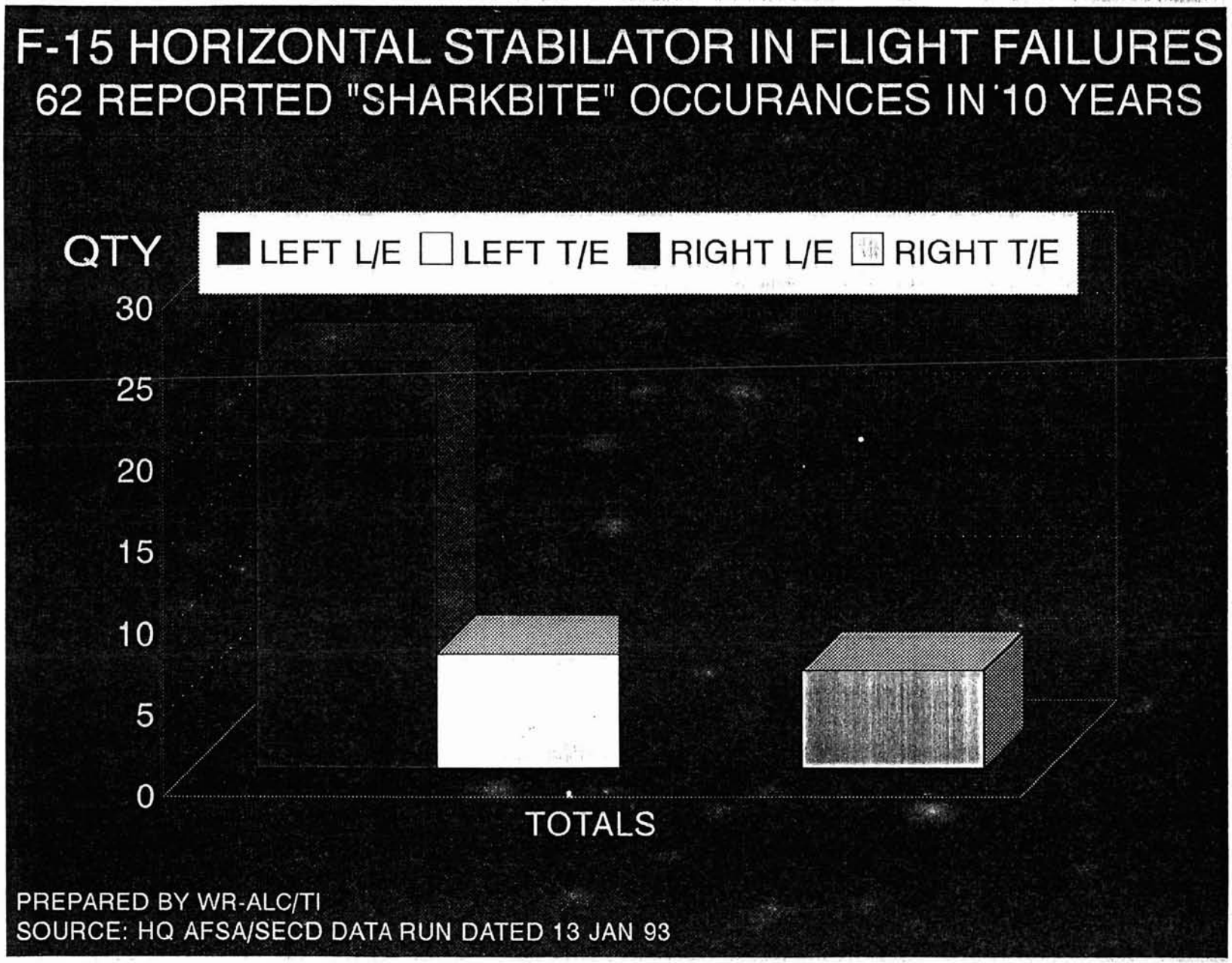

FIGURE 2.0-01 IN FLIGHT FAILURE BY COMPONENT

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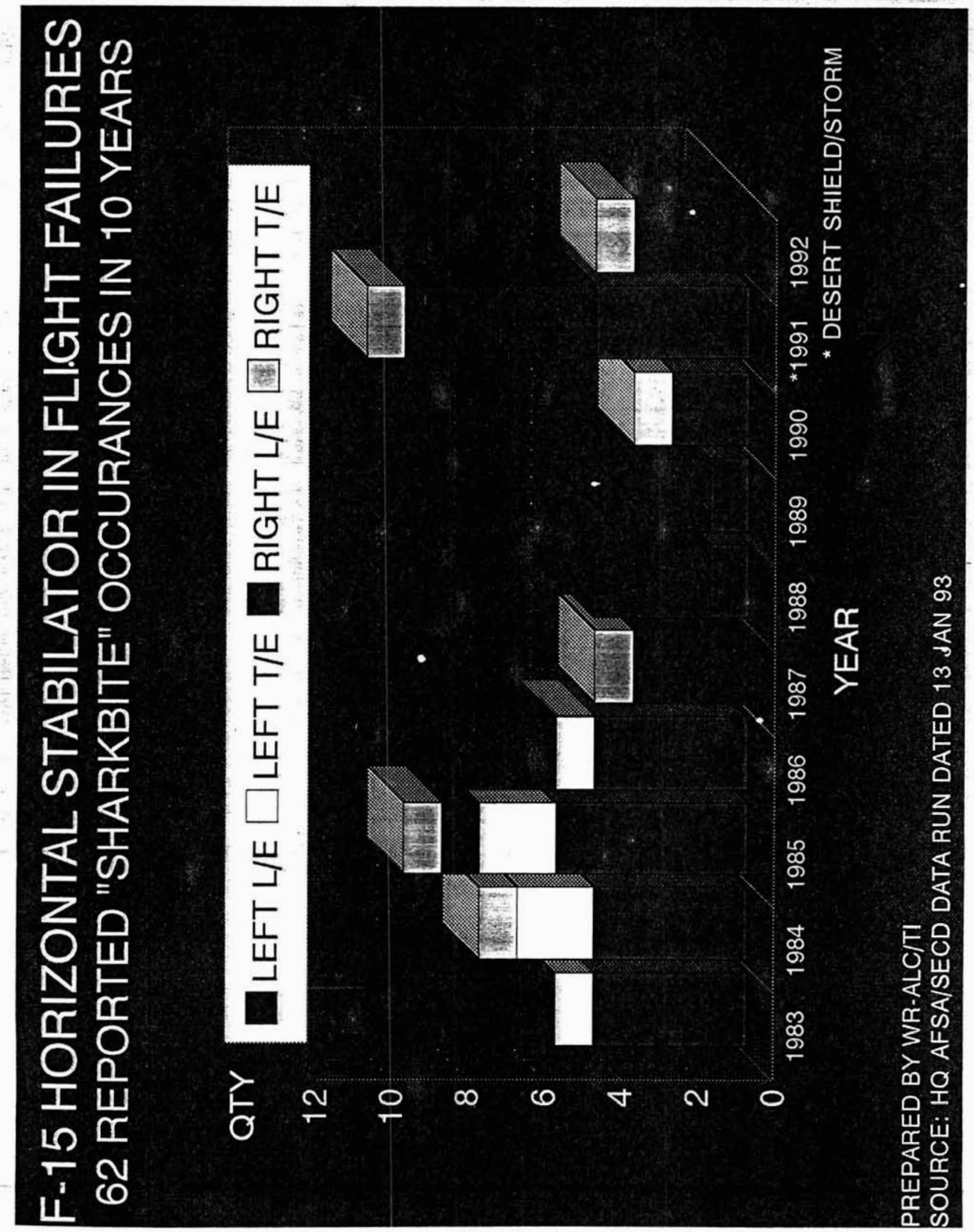

FIGURE 2.0-02 IN FLIGHT FAILURES BY YEAR

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Next we plotted the failure data by the number of occurrences against mach speed ranges. The results of this data is shown on **Figure 2.0-03**. In examining this chart it appears that the failures increase as each mach zone is entered, and then drops off until the next mach zone is approached. Unfortunately, only about 64% of the reports indicated the exact speed at which the delamination occurred. While this chart does not provide conclusive data to indicate a direct correlation between the mach zones and the failure, we do feel that this possibility needs to be more closely examined based on the trends this chart shows.

Last of all we plotted the failure data between "G" force and mach speed. By examining the data presented on **Figure 2.0-04** it appears that "G" force is a key player in the delamination of the boxes. Unfortunately, only 57% of the reports indicated the "G" force that the aircraft was experiencing when the failure occurred. There were two cases where the aircraft was in an over-G condition when the failures occurred. Only one of the failures occurred when the aircraft was exposed to a "G" force less than 5.0. Three failures occurred when the aircraft was exposed to a "G' force of 5.0 to 6.0. The remainder of the failures occured when the aircraft was exposed to "G" forces greater than 6.0.

We do not feel that the data presented offers any conclusive proof to any one factor being the root cause of in-flight delamination of the horizontal stabilator boxes. However, we do feel that there is a strong trend indicating that the leading edge box is not designed to withstand the stress's of high "G" supersonic flight.

3.0 CMSgt BRAUER'S RECOMMENDATION CMSgt Brauer's proposal (Atch. D) recommends standardization of the stabilator inspection and repair between the three depots (WR-ALC, SM-ALC and KOREA). Currently WR-ALC is the only depot that is performing **overhaul** of the F-15 horizontal stabilator. Consequently, we must assume that he is referring to the inspection criteria for the horizontal stabilator. We feel that the current Technical Order

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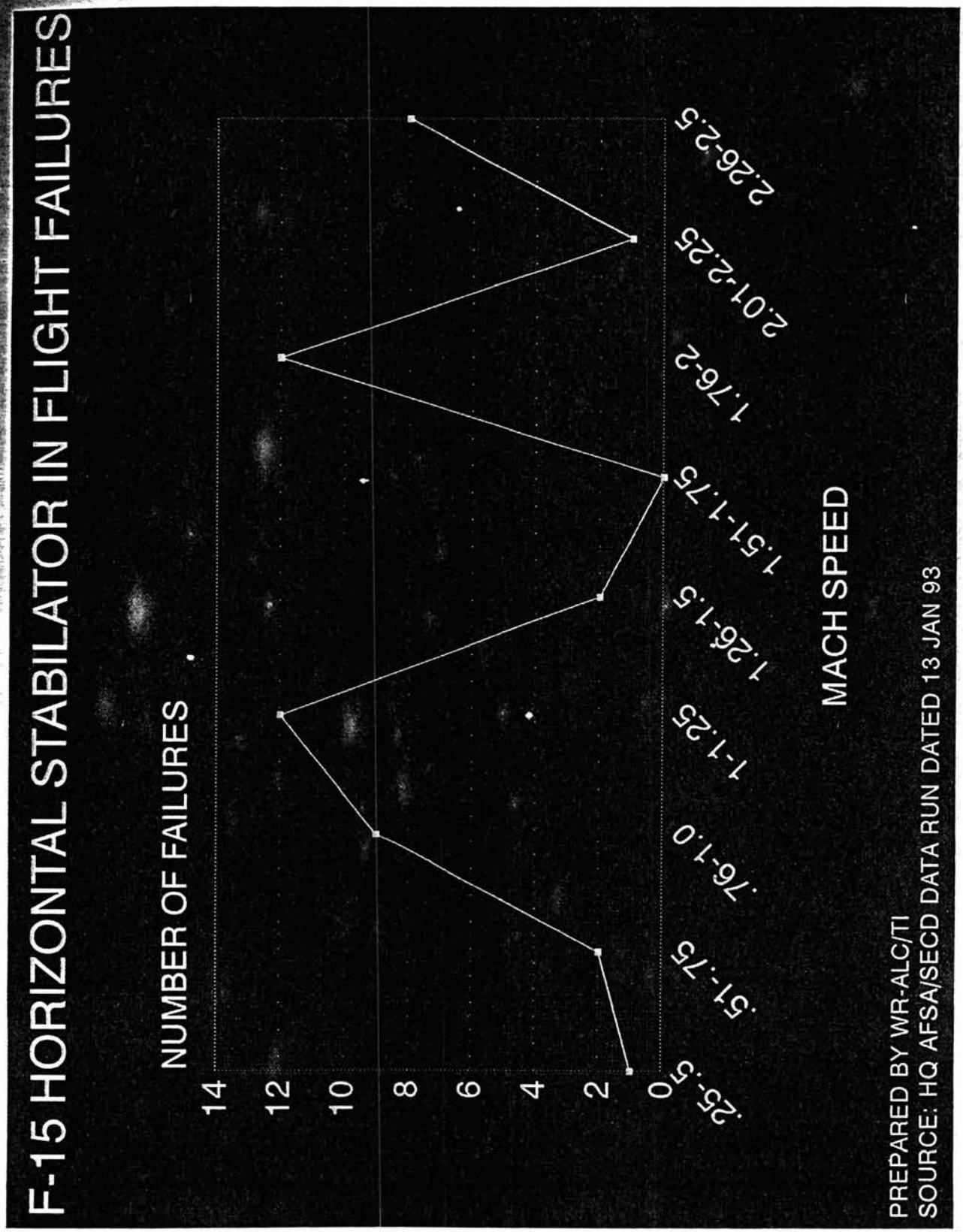

FIGURE 2.0-03 NUMBER OF FAILURES FOR DIFFERENT SPEED GROUPS

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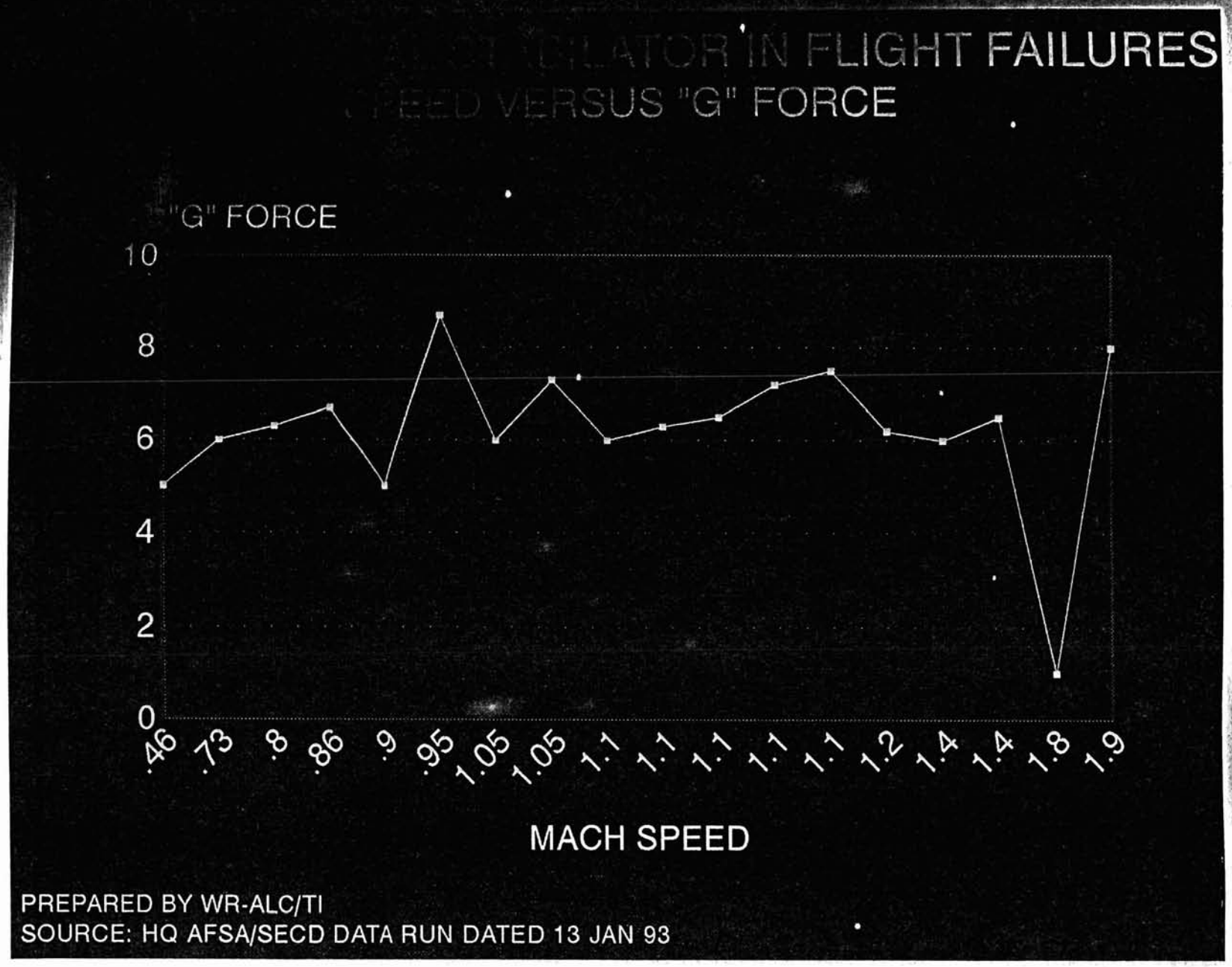

FIGURE 2.0-04 IN FLIGHT FAILURE CORRELATED BY SPEED & "G" FORCE

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criteria (1F-15A-36, Sec III, Pg 3-1 through 3-67) clearly provides for a standard inspection criteria of the horizontal stabilator. Consequently, if all activities are following the Technical Orders then a standardized process currently exists.

The second recommendation that he made is to perform a Time Compliance Technical Order (TCTO) requiring all F-15 stabilators undergo N-ray inspection, Squirter inspection, X-ray inspection and repair at SM-ALC. We need to closely examine the proposal submitted to see if it in fact offers a viable solution to the persistent sharkbite problem. The economic impact as well as mission impact of shipping all horizontal stabilators to SM-ALC on the "assumption" that the added N-ray and squirter inspections will eliminate or reduce horizontal stabilator in-flight failures must be closely considered. Currently there is no evidence supporting CMSgt Brauer's position that his proposal will reduce in-flight failures of F-15 horizontal stabilators. Evidence from a variety of sources points to "disbonding" as the prime initiator of "sharkbites" (Attch. B6 WR-ALC/LF, 9 DEC 93). This fact must also be coupled with the fact that N-ray is not considered to be a reliable tool for the detection of minute amounts of moisture (Attch A, WR-ALC/TIE, 20 JAN 94 & Attch. B1, SM-ALC/LAFFE, 10 JAN 94). Unfortunately, the root cause of disbonds has not been determined. He stated that there are enough spares currently in the pipeline to support this TCTO. Based on the fact that the horizontal stabilator is a "potential critical item", we do not understand how the current quantity of spares could support such an endeavor. Even if assets were drawn from Davis Monthan Air Force Base to provide the needed spares as he recommended, an exorbitant amount of money would be required to place these assets into a serviceable condition. Please keep in mind the data shows that only an average of **4.7 boxes per year fail in-flight**. The small number of failures coupled with the fact that there is no evidence showing that his recommendation would eliminate those failures makes this recommendation very risky and costly.

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His third recommendation is to analyze the data that would be gathered from the TCTO and repair actions and determine the scope of the problem. While we agree with data analysis prior to charting a course of action, we do not agree with a data collection system of the cost and magnitude that his recommendation encourages. The horizontal stabilator depot at WR-ALC has previously assessed the water intrusion problem and determined that over 90% of all stabilators turned in for **depot overhaul** have water entrapped in the honeycomb core. However, if WR-ALC/LF determines that these inspections are necessary WR-ALC/TI can accomplish thermography inspection for minute moisture and the squirter inspections in addition to the real time X-ray inspections that we are currently performing.

The fourth and fifth recommendations state that his proposal would be a "win-win" situation for SM-ALC, WR-ALC and the flying units. We do not agree with this assessment since the only winner in this would be SM-ALC by gaining new workload. The United States Air Force would be a big loser by having to expend a large sum of money (that we do not have) to begin a TCTO that does not offer a sound solution to the in-flight failure problem. This would be a long drawn out process and it would be years before the Air Force would have the necessary data to assess the problem. The only benefit that the Air Force would gain is the documentation of the amount of moisture that is contained in the horizontal stabilators and the degree of disbonds. This is something that can be done at each flying unit and each depot utilizing the current NDI techniques that are in place. If any type of TCTO should be done it would be to have all users and depots perform a one time inspection of their stabilators for moisture and disbonds. After completion of their inspection they could route the results to WR-ALC/LF for analysis. Under this scenario the Air Force would achieve the same results at an affordable cost and a timely manner.

Although we do not agree with his proposal for routing all stabilators to SM-ALC for inspection based on the economic and logistic impact, we would support an effort were all users

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performed a one time inspection and recorded the results. This method would allow WR-ALC/LF an opportunity to assess the magnitude of the water intrusion and disbond problem in a timely and cost effective manner.

4.0 "SHARKBITE" CAUSE The real issue regarding "sharkbites" on the F-15 horizontal stabilator is to determine the root cause of the in-flight failures. We must be careful in evaluating this issue, we do not want to get into a debate regarding the non destruction inspection (NDI) techniques and fail to determine what is causing the "sharkbites". According to reports on the "sharkbite" problem (Attch. B6, WR-ALC/LF, 9 Dec 93) the failure mode has never been positively identified. Lost portions of damaged structure have never been recovered and the remaining portions are usually damaged so severely that the evidence is obscured. A large percentage of the in-flight mishap reports indicate that damage was discovered and not observed and that pilots can only guess at what point in flight the damage occurred.

As outlined in the WR-ALC/LF report (Attach. B6, 9 DEC 93) disbonding of honeycomb assemblies is the primary cause of "sharkbites". There are several possible causes for disbonding.

1. Disbonding may occur when a skin is under compression and is not firmly bonded to the core.

2. A percentage of disbonds are due to manufacturer defect.

3. A percentage of disbonds are associated with corrosion (Atch. B6, WR-ALC/LF, 9 DEC 93). Moisture is the prime suspect for the cause of the corrosion but, there is no data available on how long it takes for moisture to cause enough corrosion to initiate a disbond. Small amounts of moisture are less likely to cause rapid rates of corrosion unless severely contaminated (Attach B1, SM-ALC/LAFFE, 10 JAN 94).

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4. Another theory is the physical expansion of entrapped water by freezing or heating during flight (Attch.B6, WR-ALC/LF, 9 DEC 93). Again, small amounts of water pose less risk. However, any amount of moisture that is detected is an indication of an intrusion path. This opens the door to inadequate sealing of seams and joints during manufacturing or repair of components. Seals can be initially adequate in accordance with Technical Order specifications but, degrade with time and eventually fail, allowing water intrusion.

5. Another possibility for disbonds is impact damage. A component skin absorbs impact energy during flight, maintenance handling and shipping. This can be discovered during normal field and depot level maintenance.

6. Another probable cause for disbonds is the aircraft exceeding the flight envelope causing enough heat to melt sealant bonding.

7. Also, by exceeding the authorized flight envelope excessive "G" force may be induced onto the forward and aft boxes of the horizontal stabilator leading to disbond and catastrophic delamination of the boxes.

By "assuming" that corrosion is the major cause of "sharkbites" (Attch D, CMSgt Brauer, 10 OCT 93), many critical aspects of the problem are being overlooked. Field evidence and other aircraft structural engineering OPRs support the view that components fly many hours with small indications of moisture and at regular inspection intervals still check good for disbonds. Field units have observed that components have displayed a history of moisture intrusion without failure. Performing major surgery to clear up small amounts of moisture within a few honeycomb cells risks more damage to components than the risk of leaving it alone (Attch. B6, WR-ALC/LF, 9 DEC 93).

A significant number of disbonds examined at WR-ALC contained no evidence of moisture nor corrosion damage and furnished no clues as to why the disbonds occurred (Attach. B6 WR-

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ALC/LF, 9 DEC 93). SM-ALC/LAFFE (Attach B1 10 JAN 94) reports that "*For small amounts of moisture found by Nray, we will normally dry it out if possible, or leave it as is if it is extremely small. We do not arbitrarily cut open the structure to repair small amounts of moisture.*" The same report states that X-ray results are used liberally to help make that decision. They also agree that the question of N-ray application is the amount of water required to cause in-flight failure (Atch. B1 SM-ALC/LAFFE, 10 JAN 94). The primary cause of "sharkbites" is still unknown and the common rule of thumb in the metal bond community is, "*If you can't see moisture via X-ray, it's not worth worrying about*" (Attch.B6 WR-ALC/LF, 9 DEC 93).

5.0 DEPOT MAINTENANCE F-15 horizontal stabilators at WR-ALC are processed under two different repair lines. The first repair line is the F-15 aircraft depot repair line. The F-15 aircraft depot at WR-ALC performs an incoming inspection of all horizontal stabilators for disbonds, water entrapment and thin skin. If the stabilator checks good it is placed into storage until the stabilator is ready for installation onto the completed fuselage. If a stabilator is found to be non-repairable by WR-ALC/LFP it is turned into supply in "F" condition and a serviceable stabilator is requested.

The second repair line at WR-ALC is the F-15 horizontal stabilator depot level overhaul shop in the Structural Repair Division. This shop is the only Air Force depot level **overhaul** station for the F-15 horizontal stabilator. In CMSgt Brauer's paper (Attach. D) under "maintainability" he stated that "*WR-ALC treats each stabilator as wet; and puts them into an autoclave for drying*". Also in the same paper under "Estimated Cost" he stated "*WR-ALC treats each horizontal stabilator as wet, and cycles each through an autoclave process, even dry horizontal stabilators. The autoclave is not an NDI inspection, but is a cost added to the inspection of horizontal stabilators.*" We take strong exception with these statements since it is clear he does not understand that the process he refers to is only for stabilators going

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through **overhaul**. Approximately three years ago while performing a process review to reduce the flow days on the horizontal stabilator we analyzed data from our NDI shop on the results of initial real time X-ray inspections. At that time all stabilators in the depot **overhaul** line were first routed for real time x-ray inspection. After the real time X-ray inspections the horizontal stabilator was disassembled and the wet components where routed to the autoclave for drying. The review of the initial real time X-ray data indicated that over 90% of all horizontal stabilators received for depot **overhaul** contained moisture. After reviewing the data we changed our repair process. Now all stabilators coming in for depot **overhaul** are first routed to the stabilator shop after depaint where the stabilator is disassembled. We then route the boxes to the autoclave for drying. After drying the boxes inspected using real time X-ray. Since all stabilators are disassembled during the overhaul process and since it takes much longer to NDI a complete stabilator than it does to NDI the individual boxes we were able to reduce our NDI inspection time. **By this simple process change we were able to eliminate one X-ray inspection, reduce the time required for X-ray and reduced the flow days required to overhaul F-15 horizontal stabilators. Consequently, this is not "a cost added to the inspection of horizontal stabilators" but is a process improvement that has resulted in cost savings to the United States Air Force.**

6.0 N-RAY VERSUS X-RAY Unlike X-rays, neutrons tend to be absorbed or scattered by lighter atoms while readily passing through structures of heavier atoms giving N-ray a great advantage in locating hydrogen-containing materials, such as water or organic materials, inside thick metallic structures. However, where metallic walls are thinner, such as on aerospace structures, this advantage is greatly reduced. Unfortunately, N-ray has no advantage in differentiating between moisture, sealants, adhesives, fuel, paint, or any other organic material appearing in or on the structure. Since N-ray is incapable of detecting metallic skin thickness variations or core damage, it cannot be trusted to find actual corrosion damage. These facts are confirmed by the F-111 engineering office at Sacramento in the 10

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JAN 94 letter from SM-ALC/LAFFE to WR-ALC/LFES (Attch B1, 10 JAN 94), which states, "*A typcical N-ray result may indicate scattered moisture, which we will decide on repair using the Xray. Basically, if the X-ray shows no core or other substructure damage, we may conclude that the Nray finding is not moisture (probably fuel or sealant), and not repair it.*"

Moisture, foreign objects, and honeycomb damage have been successfully located at WR-ALC by filmed and real time X-radiography, not only on the aluminum skinned leading and trailing edges of the stabilator, but in the boron/epoxy skinned torque box, which is not transparent to N-ray. We are adding to our inventory improved methods, such as thermography, described below, to locate and identify moisture in honeycomb, as well as locate disbonds, but have not, over the last twenty years, seen evidence of any need for adding neutron radiography.

The ability of Thermal Infrared Imaging (Thermography) to detect water in composite and aluminum honeycomb structure was demonstrated at Robins AFB in July of 1993. At that time amounts of water as small as one tenth of one cubic centimeter were readily found in an F-15 rudder. The development of this technology was postponed due to the use of thermography to inspect boron composite repairs on C-141 lower inner wing panels. This method will be tried on all types of bonded honeycomb structure in the near future. We feel that it will be as sensitive as any presently known technology for moisture location. It will also be portable and very cost effective.

WR-ALC has been tracking the growth of neutron radiography since 1974. The fact remains that the physics of the method still remain the same and we have not endorsed it becuase of N-rays incompatibility with composite parts as well as N-rays limited use on thin wall aerospace structures. We do not believe that N-ray can accurately detect small amounts of moisture in composite honeycomb structure. The hydrogen atoms that N-ray is looking for are

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present in many of the materials contained in a composite honeycomb structure and would muddle the N-ray results.

7.0 RECOMMENDATION Our most paramount concern is that the problem of F-15 horizontal stabilator in-flight failures be analyzed using sound engineering logic. We also feel that no attempt to "fix" the "sharkbite" problem should be initiated until it is shown to be supported by sound engineering logic and offer a cost effective **solution to the problem**. With this premise in mind we make the following recommendations.

1. No action should be taken on CMSgt Brauer's proposal based on the technical issues that we have addressed in this paper. This position appears to be supported by SA-ALC/LDN, HQ ACC/LGF, HQ PACAF/LGM and WR-ALC/LF. Please refer to attachments B3, B4, B5 and B6.

2. Based on the information we presented under our paragraphs on Data Analysis we feel that the stabilator may not be designed to withstand the "G" forces and mach speeds of the F-15. We recommend that a study be initiated through Wright Laboratory or WR-ALC/TIE to evaluate the leading and trailing edge boxes to determine if they are structurally strong enough for the operating environment. Given the very thin skin that is on the forward box this may be a contributing factor to the "sharkbite" issue.

3. Initiate a testing program to attempt to induce disbonding and delamination in a laboratory environment so that the failures may be observed. Data from this type of testing would aid in determining the actual cause of "sharkbites". With the very thin skin on the leading edge of the stabilator, testing could show if pin holes or extremely thin areas could result in catastrophic failure of the box when exposed to high speed winds. In many of the reports on in-flight failure of the boxes the findings were "thin skin on the leading edge."

4. WR-ALC/TIE has the capabilities to undertake a WR-ALC/LF directed project to redesign the horizontal stabilator to increase the strength of the boxes and to reduce the moisture intrusion paths. It is common knowledge in the F-15 community that moisture

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intrusion is common on the horizontal stabilator. By redesigning the F-15 horizontal stabilator, the paths for moisture intrusion could be reduced. Using real time X-ray, we have found 95 plus percent of moisture immediately next to seams and joints. Some adhesives currently in use are hydroscopic and absorb moisture from the atmosphere (Atch. B6 WR-ALC/LF, 9 DEC 93). The major problem dealing with moisture intrusion is that it's easy to get in and nearly impossible to remove. Since these areas have been identified we should take a closer look at redesigning components and improving manufacturing and maintenance techniques.

5. Recommend a review be conducted of depot and field level T.O. guidance concerning moisture removal, resealing, and bonding of components.

6. Recommend that consideration be given to possible deficiencies in current shipping and storage procedures. For example, the leading edge drainage hole on the forward end of the F-15 horizontal stabilator outboard tip is nearly the highest elevated structural point when the stabilator is installed in the shipping crate. This could be an issue on drainage versus intrusion. Especially considering that while a stabilator is in storage the position of the drainage hole becomes an entrance for precipitation.

7. To obtain the data that CMSgt Brauer recommends in his paper WR-ALC/LF could issue a TCTO directing each user perform a one time inspection, during phase maintenance. This inspection should be for disbonds, water intrusion and delamination using current NDI techniques available to all F-15 users and repair centers. The results of this TCTO could then be analyzed by WR-ALC/LF to assess the current status of the fleets horizontal stabilators at an affordable cost and in a timely manner.

8.0 CONCLUSION Considering all the data and technical opinions throughout the F-15 community it is obvious that an exact failure mode for "sharkbites" has not yet been identified. In summary we do not feel that CMSgt Brauers proposal offers a solution to the "sharkbite" problem. N-ray has difficulty distinguishing water from composite structural materials and adhesives containing hydrogen. X-radiography has been proven to detect

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water, foreign objects, honeycomb damage, and corrosion. Furthermore, based on the in-flight failure data the number of incidents have dramatically decreased through the years.

At this time our efforts need to be focused on analyzing the causes of "Sharkbites". This is a very complex issue with many technical variables interacting to result in the in-flight failures. We feel that any course of action taken should key heavily on using sound engineering logic to analize the technical aspects prior to charting a course of action. However, if WR-ALC/LF determines that the additional inspections are required, WR-ALC stands ready. We can perform Thermography inspection for minor moisture detection and process horizontal stabilators through Automated Ultra Sonic Through Transmission Inspection System (squiter), that is available locally. Additionally, WR-ALC/TI has the technology to assist in failure analysis and redesign of the stabilator. Other than the noted recommendations in paragraph 7.0 we would support the challenge to test the X-ray versus N-ray issue suggested by WR-ALC/TIE (Atch. A, par 8), or a similar test implemented by Wright Laboratory. We need to study this issue before we allow theories and assumptions to make a needless economic impact, and still have the problem of in-flight delamination of the F-15 horizontal stabilator.

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Document Separator

AIR FORCE SUMMARY	AF Current Cap	AF Current Core	AF Avail Cap	AF Xfer'ng Wkld	Losing Center's Original Cap	Com'dty Gp Cap Transfer Factor	Gaining Center's Gained Cap	AF Cap Elim'ntd (Consol)	AF New Core Wkld	Indust Reeng'ng Benefit Factor	AF Reeng'd Core Wkld	AF New Reeng'd Cap	AF Cap Elim'ntd (Total)	AF New Excess Cap	AF Original MPC	AF New MPC
Grand Totals	39545	27010	12534	0	5634	Varies by CG	1324	3057	27010	15%	**22959**	**27010**	11928	4052	56693	57930
Center:	**OC-ALC**															
Commodity Group	OC ALC's Current Cap	OC ALC's Current Core	OC ALC's Avail Cap	OC ALC's Xfer'ng Wkld	Losing Center's Original Cap	Com'dty Gp Cap Transfer Factor	Gaining Center's Gained Cap	OC-ALC's Cap Elim'ntd (Consol)	**OC-ALC's New Core Wkld**	Indust Reeng'ng Benefit Factor	**OC-ALC's Reeng'd Core Wkld**	**OC-ALC's New Reeng'd Cap**	OC-ALC's Cap Elim'ntd (Total)	OC-ALC's New Excess Cap	OC ALC's Original MPC	OC ALC's New MPC
Aircraft:																
FTB	2279	2023	256			80%	0	0	2023	15%	**1720**	**2023**	256	303	2301	2301
Cmd & Ctrl	289	512	-223			80%	0	0	512	15%	**435**	**512**	-223	77	607	607
Components:																
Structures	*403*	*334*	*69*	*-334*	*403*	*10%*	*33*	*370*	*0*	15%	0	0	370	0	*434*	*434*
Hyd	*171*	*121*	*50*	*-121*	*171*	*50%*	*61*	*111*	*0*	15%	0	0	111	0	*544*	*544*
Pnu	*107*	*61*	*46*	*8*	*10*	*50%*	*4*	-	*69*	15%	59	69	38	10	*341*	*341*
Inst	*227*	*264*	*-37*	*-264*	*227*	*75%*	*198*	*29*	*0*	15%	0	0	29	0	*712*	*712*
Avionics	218	93	125			30%	0	0	93	15%	**79**	**93**	125	14	218	218
Other	594	131	463			25%	0	0	131	15%	**111**	**131**	463	20	817	817
Engines:																
Aircraft	2497	2307	190			25%	0	0	2307	15%	**1961**	**2307**	190	346	4912	4912
Bs & Vs	155	76	79			10%	0	0	76	15%	**65**	**76**	79	11	529	529
Software:																
Tactical	238	325	-87			50%	0	0	325	15%	**276**	**325**	-87	49	240	325
SE	*455*	*299*	*156*	*-57*	*86*	*50%*	*29*	*58*	*242*	15%	**206**	**242**	185	36	*455*	*455*
Spec Int Items:																
Bearings	10	15	-5			10%	0	0	15	15%	**13**	**15**	0	2	62	62
TMDE	3	0	3			20%	0	0	0	15%	**0**	**0**	3	0	4	4
Assoc Fab/Mfg:	*162*	*97*	*65*	*28*	*15*	*5%*	*1*	*14*	*125*	15%	**106**	**125**	37	19	*294*	*294*
TOTALS	7808	6658	1150	-740	912		326	580	**5918**		**5030**	**5918**	1575	888	12470	**12555**

DIRECTOR
DEFENSE LOGISTICS AGENCY
CAMERON STATION
ALEXANDRIA, VA 22304-6100

14 February 1995

Major General James R. Klugh, USA (Ret.)
Deputy Under Secretary of Defense
(Logistics)
3000 Defense Pentagon, Room 3E114
Washington, DC 20301-3000

Dear General Klugh,

The Defense Logistics Agency has been offered storage space at several Navy and Air Force bases/depots. These offers have been made in terms of available cubic feet of storage space and, in general, have been non-specific as to the actual buildings involved, condition of the buildings or tenant costs. As such, these notional space offers ***have not been included*** in DLA's BRAC analysis, COBRA runs or BRAC submittal to OSD.

DLA has expressed interest in some of these non-definitized space offers solely as an insurance hedge in the wake of the aggressive storage space reduction plan that is inherent in DLA's BRAC 95 submission. As such, these offers of space to DLA **should carry no weight** in the determination of whether a base/depot remains open. DLA's concept of operation for storage depots remains that we leave bases that close their maintenance depots.

With my respect,

Ed Straw

EDWARD M. STRAW
Vice Admiral, SC, USN

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON DC

MEMORANDUM FOR OADUSD (MP) / L 24 Feb 95

FROM: AF/LGMM

SUBJECT: Correction of Air Force JCSG-DM Information

I presented a briefing to the JCSG-DM on 10 Feb outlining the AF BRAC 95 recommendations concerning depots. Since then I discovered a few mistakes within the briefing that need to be corrected for the record. They are :

CORRECTIONS:

Commodity/Process	Consolidation Sites
Airborne Electronics ATE Software	OC-ALC, OO-ALC and WR-ALC
Airborne Electronics	OC-ALC, OO-ALC and WR-ALC

OMISSIONS: (Jet Engine-related subcommodities)

Commodity/Process	Consolidation Site
Engine Gear Boxes	SA-ALC
Engine Pneumatic Components	OC-ALC
Engine Electronic Components	OC-ALC
Blades and Vanes (all repair types)	OC-ALC
Engine Fuel Accessories	SA-ALC

Additionally, I corrected three minor administrative errors discovered on the first sheet the AF depot workload laydown spreadsheets I provided to you on 18 Feb. I've attached a revised copy of this spread sheet with the corrected information hilighted.

Barry W Pitcher

BARRY W. PITCHER, Lt Col, USAF
Maintenance Policy Division
Deputy Chief of Staff / Logistics

Attachment:
Revised Workload laydown spreadsheet
(AF Summary & OO-ALC page only)

Summary of Potential Closures

	MIN SITES						MIN EXC CAP						MIL VAL			FUNC VAL		
	F/V			M/V			F/V			M/V			F/V					
	#1	#2	#3	#1	#2	#3	#1	#2	#3	#1	#2	#3	#1	#2	#3	#1	#2	#3
ANAD																		
CCAD	D		D	D	D	D	D	D	D	D	D		D	D				
LEAD	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
RRAD	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	A	A
TOAD																		
OC-ALC					X													
OO-ALC																		
SA-ALC	X			X			X	X	X	X	X	X	X	X	X			
SM-ALC							X	X	X									
WR-ALC		X	X			X												
AMARC	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
MCLB AL																		
MCLB BA																A	A	A
NADEP CP		X																
NADEP JX	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
NADEP NI																		
NSY LB							P	P	P									
NSY NF																		
NSY PH	X	X	X	X	X	X	P	P	P	X	X	X	X	X	X	A	A	A
NSY PM	X	X	X	X	X	X	P	P	P	X	X	X	X	X	X	A	A	A
NSY PS																		
NWC CR	X	X	X	X	X	X				X		X	X		X	X	X	X
NWC LO							X	P	X		X			X				
NUWC KP	X	X	X	X	X	X	P	X	P	X		X	X		X	A	A	A
Mod Total	10	10	10	10	10	10	8	8	8	10	9	9	10	9	9	2	2	2
DAT Total	8	9	8	8	8	8	8	8	8	8	7	8	8	7	8	6	6	6

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SECRETARY OF THE AIR FORCE
WASHINGTON

JUN 9 1995

The Honorable Alan J. Dixon
Chairman, Defense Base Closure
and Realignment Commission
1700 N. Moore Street, Suite 1425
Arlington, VA 22209

Dear Chairman Dixon:

RE: The Air Force Depot Analysis is Sound and Carefully Crafted

As the Commission prepares for its final deliberations, we want to state again that the Air Force depot analysis is sound and carefully crafted. Because of the importance we all place in achieving a full and fair base closure review, I want to be sure that we have provided all necessary information, about the Air Force depot initiative, about anticipated savings, and about the recent Commission staff proposal to assume a faster depot closure schedule.

AIR FORCE DEPOTS ARE UNIQUE

In our presentation to your staff on April 24 and again in my May 9 letter to you, we detailed important reasons for the cost differences between Air Force depots and those of our service counterparts. For example, we explained our depot activities are located on much larger installations with significantly more population and infrastructure that would need to be moved; thus, the costs of relocating these activities are greater. The population on our depot bases includes not only personnel directly associated with the depot, but also a large number of DoD and Air Force tenant organizations whose work is completely unrelated to depot maintenance activities. On average there are three and a half times more people located on Air Force Depot installations than on other service depots. We have demonstrated to the Commission staff that this larger population explains much of the relatively higher cost to close. We have confirmed this with DoD experience for all three of the previous base closure commissions as well as for the 95 Commission. As for the Air Logistics Centers (ALC) themselves, they are larger and more complex than counterpart DoD depots because we include all system and item management functions in addition to depot maintenance activities at our ALCs.

Thus, when considering the cost to close a depot we would be required to budget significantly more funds. In today's circumstances that means cutting funds from other very critical areas of the Air Force budget such as modernization or readiness. It is our firm conviction that such cuts would pose a high risk to the Air Force's modernization and readiness programs. Any risk to these programs undermines the Air Force's ability to project power.

AIR FORCE IS AGGRESSIVELY DOWNSIZING CIVILIAN PERSONNEL

Recent Commission Staff testimony also suggested savings from an Air Force depot closure should be more because, compared to other DoD depot closures or realignments, the number of Air Force jobs eliminated as a percentage of total base employment was too low. In the case of a complete Air Force depot closure about 7% to 12% of all jobs on base are eliminated, as contrasted to Army and Navy depots where the percentage of jobs eliminated was seen to be much higher. The three selected examples of Army and Navy depots highlighted in staff testimony reported that about 40% to 60% of the jobs at each of the three depots would be eliminated. However, when all ten DoD depot closures and realignments from all four closure commissions are considered the average drops to about 25%. Because our depots include large numbers of non-depot tenants and non-depot missions the percentage of actual depot-wide jobs eliminated must also be less. If this is not fully understood there could be a tendency to expect more in savings from an Air Force depot closure than is realistic.

Had Air Force depot maintenance employment remained near levels of just six years ago, then I believe we could expect to achieve more job elimination perhaps in the range of 20 percent as suggested in the Commission staff presentation. However, since FY 1989 11,000 Air Force depot maintenance jobs were cut; this represents a 28% reduction in our depot maintenance labor force. We have reduced depot employment as rapidly as we could just as we have reduced Air Force operational force structure in order to gain savings as rapidly as possible. Because of these recent efforts there is little that we can expect to achieve above the 7% to 12% range of jobs eliminated as noted above. Also, if we were to close a depot nearly all of our direct employment would need to be moved to receiving locations to provide the capability required to meet current and future needs. These factors confirm in our mind that depot realignment rather than a costly closure is a far more efficient means to achieve savings.

THE AIR FORCE GOAL: TO CONTINUE SAVING DOLLARS

The Commission staff questioned the six year period assumed for the closure of an Air Force depot. We all realize a more rapid closure schedule provides greater net savings. The six year closure period is needed because of the considerable complexity of closing a large depot installation, with construction and reengineering requirements at the gaining locations, as well as the operational transition problems of moving workload and tenants. Since there is little duplication within the Air Force of types of maintenance work, there is little ability to have another location pick up work during the transition period. An additional, extremely significant issue involves the funding stream for construction and other expenses. The Air Force faces a major effort to fund base closure expenses in the next few fiscal years, including past BRAC actions as well as the current round. Due to budget constraints in FY 96 our MILCON requirements of $246.1 million for BRAC 91 and 93 rounds will have to be stretched to future years. The BRAC 91 and 93 requirement bowwave is critical in FY 96, 97 and 98 with current funding shortfalls of $43, $88 and $39 million, respectively. The acceleration of MILCON

projects into the first two or three years to implement an earlier closure, even if it were operationally possible, compounds these budget problems significantly. We understand the focus on comparative data, but at the same time there are some unique Air Force considerations that I believe warrant serious Commission understanding.

Clearly, these deliberations are significant to us and I want to take every opportunity to ensure that we work very closely with you and the Commission to achieve the most effective operational and economic outcome that we can for all depots. We believe our depot proposal does just that.

Sincerely,

Ronald R. Fogleman, General, USAF
Chief of Staff

Sheila E. Widnall
Secretary of the Air Force

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SECRETARY OF THE AIR FORCE
WASHINGTON

JUN 15 1994

Honorable Alan J. Dixon
Chairman, Defense Base Closure and Realignment Commission
1700 North Moore Street, Suite 1425
Arlington, VA 22209

Dear Mr. Chairman:

During the hearings on Wednesday, several commissioners made reference to depot closure scenarios that can be implemented at lower cost and with greater forecast savings than those estimated by the Air Force. From their remarks, I gather that these scenarios may include different assumptions about personnel reductions, unemployment compensation, and other factors.

You know my concern over the budgetary impacts of closures of depot installations. Consistent with that, I am concerned that the scenarios developed by your staff may include assumptions that decrease costs but are not capable of implementation. I believe that any scenario developed by your staff should be provided to my BRAC staff for review and comment, and ask for your assistance to ensure we have this opportunity before your deliberations commence. Major General Blume is my point of contact for this effort.

I continue to appreciate the dedication and fairness displayed by your Commission and your staff and appreciate this opportunity to continue our cooperative work.

Sincerely,

Sheila E. Widnall

Sheila E. Widnall

Please refer to this number when responding 950621-24

Impacts From A Dual Air Force Depot Closure

- **Disruption to Maintenance Workload Causes Severe Logistical Support Problems**
  - Over 14 million hours of workload transferred, affecting virtually every AF system
  - Impacts 13,000 ALC personnel performing skilled work
  - Loss of trained and skilled workforce requires years to reestablish
  - Closure of multiple depots preempts joint-service streamlining of C4I and aeronautical systems work

- **Reduction In Capacity Too Extreme**
  - Maximum Potential Capacity measure (used to show two depot excess capacity) rejected by Joint Cross-Service Group - invalid
  - Must retain reserve capacity for contingencies, e.g. Desert Shield/Storm
  - Significant barriers to privatization, e.g. 60/40 legislation and OMB Circular A-76, plus increased costs after workload outsourced

- **Material Management Function Disruption** (item management, engineering, production control)
  - Management functions disrupted over major systems

- **Financial Impact**
  - $317 million shortfall across FYDP with Kelly closure
  - Over $985 million shortfall with closure of Kelly and McClellan
  - Costs (e.g., MILCON) accelerated to near years because of ambitious closure schedule
  - Additional unfunded environmental bill of several hundred million results from BRAC closure

- **Program Impacts From Shortfall Across FYDP**
  - Exacerbates FY97 program that is already short
  - Pushes investment/modernization out to future years, dominoes into greater problems in future
  - Specific impacts
    - Readiness
      - Flying Hour Program
      - Real Property Maintenance
    - Bomber Upgrades
      - Munitions Acquisition and Development
    - Quality of Life
      - Child Care Center and Dormitory construction
    - Force Structure
      - F-22 procurement delays
      - F-16 Air Defense Fighter force structure drawdown

SECRETARY OF THE AIR FORCE
WASHINGTON

JUN 21 1995

The Honorable Alan J. Dixon
Chairman, Defense Base Closure
and Realignment Commission
1700 N. Moore Street, Suite 1425
Arlington, VA 22209

Dear Mr. Chairman:

The Air Force approach to the depots is prudent because it saves money for the taxpayers and protects military readiness. It is also the product of exhaustive analysis by military professionals and senior leadership who have been working the proposal for over a year.

Our depot proposal is simple. Building on the personnel reductions that have already been taken from the Air Logistic Centers and depots during the last five years (over 26,000 people), the pending Air Force proposal would reduce and realign the depots by an additional 1,987 jobs (with a net present value of $975 million). While there would be some disruption, the business of the Air Force -- flying combat and transport aircraft, and maintaining our command and control and space network -- would continue unimpeded. This total Air Force depot reduction of 28,000 jobs is almost two and a half times the total depot reduction achieved by all other DoD components in all four BRAC rounds combined.

On the other hand, the staff generated BRAC proposal described to us will cost the Air Force hundreds of millions of additional dollars (in excess of $1 billion in environmental and military construction costs) during the next five years; disrupt military readiness because of the total restructuring of the Air Force logistics and depot system; preclude the Air Force from carrying through on vital readiness and modernization programs; and have a devastating impact on as many as 25,000 DoD employees in Texas and California who would lose their jobs or have to relocate to other Air Force installations at great personal and public expense.

Most importantly, the essential business of the Air Force -- operations, logistics, and budget dollars that are critical to future modernization -- would be greatly disrupted. Since the end of the cold war, the Air Force has reduced its budget by more than $20 billion and reduced personnel by over 200,000 people. Some further reductions and savings are necessary; however, they must be taken in a way that permits the Air Force to continue to carry out its essential mission. The Department of Defense proposal does that; the Commission staff alternative does not.

Sincerely,

Ronald R. Fogleman, General, USAF
Chief of Staff

Sheila E. Widnall
Secretary of the Air Force

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MEMORANDUM FOR MS REESE

FROM: WR-ALC/FMP

SUBJECT: Request for Information on TRC Background

During your meeting with Mr. Falldine on 4 June 1995, you asked that we provide any supporting documentation we could find relative to the amount of time it takes to move workload during the implementation of the TRC concept. The best we could find came from the WR-ALC history files and the appropriate summary page is attached. It should be noted that over 2 million hours of work was moved into WR-ALC and almost 1 million was moved out of WR-ALC in less than 2 years. While this occurred 20 years ago, the fact that we are only moving work in one direction makes us comfortable that the workload identified to us could be transferred in the 18-24 month timeframe we discussed.

Very Respectfully

Randall H Lanier

RANDALL H. LANIER
Chief, WR-ALC Planning Branch

Offic Copy

HISTORY OF THE
WARNER ROBINS AIR LOGISTICS CENTER
1 JULY 1974 - 31 DECEMBER 1975

(Unclassified)

VOLUME I: TEXT

by

RICHARD E. MALTAIS

WILLIAM E. O'KEEFFE

APPROVED BY:

WILLIAM J. BECKER
Brigadier General, USAF
Vice-Commander

Office of History
Warner Robins Air Logistics Center
Robins Air Force Base, Georgia

October 1976

AIR FORCE LOGISTICS COMMAND

RCS: HAF-CHO(AR)7101

were also prepared primarily to display the manner in which Maintenance proposed to utilize its resources in the accomplishment of customer requirements.[7]

Technology Repair Center

The Technology Repair Center (TRC) program was developed to consolidate similar workloads from throughout the command. For example, before this concept, all five of the AFLC Air Logistics Centers had worked on reparable airborne electronic components. Officials felt that this practice fostered a costly duplication of equipment, skills, and overhead. Implementing this new approach to technology in maintenance was a special project initated in 1973, named Project "Pacer Torch":[8]

Project Pacer Torch was implemented in earnest in 1974 when the Technology Repair Center (TRC) concept began. At the same time workloads for Landing Gears, Weapons, Hydraulics, Photographic, Electrical Components, Electro/Mechanical AGE and Instruments, approximately an annual workload of 589,000 manhours, was tranferred from Robins to the four other ALCs. During this same year, workloads for Airborne Electronics, Gyros, and Life Support, approximating one million manhours, were transferred to Robins from the four other ALCs. This project continued in 1975 with Robins transferring Missile Component and Engine Related workloads to other ALCs w/ life gaining ALC workloads of approximately 985,000 manhours in the Airborne Electronics, Gyros and Life Support TRCs.

Project "Pacer Torch" was finally completed on 1 October 1975. It had been a significant project for AFLC. Over 50 individual plans were involved, which resulted in the transfer of more than six million manhours of workloads between the five ALCs. In summary, WR-ALC gained, 2,021,000 manhours of workload and lost 905,000 for a net gain of 1,116,000 hours. There were 875 transfer offers issued relative to gaining workload and 176 personnel transferred to WR-ALC with their jobs. This represented a 20 percent acceptance rate. There were 572 transfer offers issued relative to the losing workload but only 34 personnel accepted transfers. This represented only a six percent acceptance rate.[9]

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ADDITIONAL POM CIVILIAN MANPOWER REDUCTIONS (TOTAL CENTER CIVILIAN MANPOWER)

6/15/94 17:00

CENTER		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	DELTA FY94-01
SAALC	31 DEC 93 PROGRAM	**12059**	11799	11666	11627	11626	11676	11647	11647	
	DELTA	-1507	-1024	-1129	-883	-883	-883	-883	-883	
	10 JUN PROGRAM	10552	10775	10537	10744	10743	10793	10764	10764	
	MEDICAL	*75*	*70*	*70*	*70*	*70*	*70*	*70*	*70*	
	FMS	*721*	*709*	*706*	*706*	*705*	*716*	*687*	*687*	
	GDIP	*0*	*225*	*215*	*209*	*209*	*209*	*209*	*209*	
	PRO RATA BASELINE	9756	9771	9546	9759	9759	9798	9798	9798	
	REDUCTION	-8	-490	-311	-864	-1222	-1768	-1904	-2252	
	NEW PROGRAM	10544	10285	10226	9880	9521	9025	8860	**8512**	**-3547**
	OF THE ABOVE REDUCTION, A FAIR SHARE FOR AN 8% BOS TAIL IS:	-1	-39	-25	-69	-98	-141	-152	-180	
	30 APR 94 ASSIGNED	10632								
	PERSONNEL IMPACT		-347	-59	-346	-359	-496	-165	-348	

NOTE: Medical, FMS, SOF, and GDIP are fenced from reduction.

ADDITIONAL POM CIVILIAN MANPOWER REDUCTIONS (TOTAL CENTER CIVILIAN MANPOWER)

6/15/94 17:00

CENTER		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	DELTA FY94-01
OCALC	31 DEC 93 PROGRAM	**10976**	10878	10726	10243	10202	10153	10136	10136	
	DELTA	-501	-359	-582	-370	-387	-376	-376	-376	
	10 JUN PROGRAM	10475	10519	10144	9873	9815	9777	9760	9760	
	MEDICAL	*144*	*138*	*138*	*138*	*138*	*138*	*138*	*138*	
	FMS Includes DMBA (74)	*408*	*407*	*402*	*399*	*399*	*393*	*387*	*387*	
	PRO RATA BASELINE	9923	9974	9604	9336	9278	9246	9235	9235	
	REDUCTION	-8	-500	-313	-827	-1162	-1668	-1794	-2123	
	NEW PROGRAM	10467	10019	9831	9046	8653	8109	7966	**7637**	**-3339**
	OF THE ABOVE REDUCTION, A FAIR SHARE FOR AN 8% BOS TAIL IS:	-1	-40	-25	-66	-93	-133	-144	-170	
	30 APR 94 ASSIGNED	10443								
	PERSONNEL IMPACT		-424	-188	-785	-393	-544	-143	-329	

NOTE: Medical, FMS, SOF, and GDIP are fenced from reduction.

ADDITIONAL POM CIVILIAN MANPOWER REDUCTIONS (TOTAL CENTER CIVILIAN MANPOWER)

6/15/94 17:00

CENTER		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	DELTA FY94-01
OOALC	31 DEC 93 PROGRAM	**9000**	8758	8198	8163	8159	8143	8123	8123	
	DELTA	-696	-848	-934	-788	-790	-790	-790	-790	
	10 JUN PROGRAM	8304	7910	7264	7375	7369	7353	7333	7333	
	MEDICAL	*128*	*121*	*121*	*121*	*121*	*121*	*121*	*121*	
	FMS	*748*	*746*	*741*	*745*	*738*	*738*	*718*	*718*	
	PRO RATA BASELINE	7428	7043	6402	6509	6510	6494	6494	6494	
	REDUCTION	-6	-353	-203	-576	-815	-1172	-1262	-1493	
	NEW PROGRAM	8298	7557	7061	6799	6554	6181	6071	**5840**	**-3160**
	OF THE ABOVE REDUCTION, A FAIR SHARE FOR									
	AN 8% BOS TAIL IS:	0	-28	-16	-46	-65	-94	-101	-119	
	30 APR 94 ASSIGNED	8454								
	PERSONNEL IMPACT		-897	-496	-262	-245	-373	-110	-231	

NOTE: Medical, FMS, SOF, and GDIP are fenced from reduction.

ADDITIONAL POM CIVILIAN MANPOWER REDUCTIONS (TOTAL CENTER CIVILIAN MANPOWER)

6/15/94 17:00

CENTER		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	DELTA FY94-01
WRALC	31 DEC 93 PROGRAM	**10711**	10372	9939	9596	9591	9574	9531	9531	
	DELTA	-319	-461	-640	-425	-425	-425	-417	-417	
	10 JUN PROGRAM	10392	9911	9299	9171	9166	9149	9114	9114	
	MEDICAL	*127*	*120*	*120*	*120*	*120*	*120*	*120*	*120*	
	FMS	*537*	*530*	*520*	*518*	*517*	*509*	*474*	*474*	
	SOF	*266*	*266*	*266*	*266*	*266*	*266*	*266*	*266*	
	PRO RATA BASELINE	9462	8995	8393	8267	8263	8254	8254	8254	
	REDUCTION	-8	-451	-273	-732	-1035	-1489	-1604	-1897	
	NEW PROGRAM	10384	9460	9026	8439	8131	7660	7510	**7217**	**-3494**
	OF THE ABOVE REDUCTION, A FAIR SHARE FOR AN 8% BOS TAIL IS:	-1	-36	-22	-59	-83	-119	-128	-152	
	30 APR 94 ASSIGNED	10402								
	PERSONNEL IMPACT		-942	-434	-587	-308	-471	-150	-293	

NOTE: Medical, FMS, SOF, and GDIP are fenced from reduction.

ADDITIONAL POM CIVILIAN
MANPOWER REDUCTIONS
(TOTAL CENTER CIVILIAN MANPOWER)

6/15/94 17:00

CENTER		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	DELTA FY94-01
SMALC	31 DEC 93 PROGRAM	**9229**	8728	8669	8516	8510	8488	8488	8488	
	DELTA	-510	-276	-473	-288	-288	-290	-290	-290	
	10 JUN PROGRAM	8719	8452	8196	8228	8222	8198	8198	8198	
	MEDICAL	*167*	*159*	*159*	*159*	*159*	*159*	*159*	*159*	
	FMS	*380*	*368*	*362*	*359*	*359*	*357*	*357*	*357*	
	PRO RATA BASELINE	8172	7925	7675	7710	7704	7682	7682	7682	
	REDUCTION	-7	-397	-250	-683	-965	-1386	-1493	-1766	
	NEW PROGRAM	8712	8055	7946	7545	7257	6812	6705	**6432**	**-2797**
	OF THE ABOVE REDUCTION, A FAIR SHARE FOR									
	AN 8% BOS TAIL IS:	-1	-32	-20	-55	-77	-111	-119	-141	
	30 APR 94 ASSIGNED	8886								
	PERSONNEL IMPACT		-831	-109	-401	-288	-445	-107	-273	

NOTE: Medical, FMS, SOF, and GDIP are fenced from reduction.

ADDITIONAL POM CIVILIAN
MANPOWER REDUCTIONS
(TOTAL CENTER CIVILIAN MANPOWER)

6/15/94 17:00

CENTER		FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	DELTA FY94-01
AFMC	31 DEC 93 PROGRAM	**85635**	83643	81854	80631	80437	80258	80092	80074	
TOTAL	DELTA	-5175	-4928	-7909	-7560	-7693	-7836	-7827	-7801	
Corrected page - this was added	FY95 ADJUST AGMC		-119							
	10 JUN PROGRAM	80460	78596	73945	73071	72744	72422	72265	72273	
	MEDICAL	*1839*	*1742*	*1742*	*1742*	*1742*	*1742*	*1742*	*1742*	
	FMS	*4288*	*4118*	*3943*	*3840*	*3791*	*3696*	*3576*	*3557*	
	GDIP	*49*	*274*	*264*	*258*	*258*	*258*	*258*	*258*	
	SOF	*277*	*277*	*277*	*277*	*277*	*277*	*277*	*277*	
	PRO RATA BASELINE	74007	72185	67719	66954	66676	66449	66412	66439	
	REDUCTION	-60	-3542	-2130	-5773	-8137	-11723	-12633	-14992	
	PERCENT REDUCTION	0%	-5%	-3%	-9%	-12%	-18%	-19%	-23%	
	NEW PROGRAM	80400	75054	71815	67298	64607	60699	59632	**57281**	**-28354**
	30 APR 94 ASSIGNED	79951								
	PERSONNEL IMPACT		-4897	-3239	-4517	-2691	-3908	-1067	-2351	

NOTE: Medical, FMS, SOF, and GDIP are fenced from reduction.

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COMMISSIONER KLING

UCX

cc: FM

FAX

Date May 15, 1995

Number of pages including cover sheet 1

TO: McClellan, Robins, Tinker, Kelly and Hill AFB BRAC offices, Letterkenny Army depot BRAC office, Tobyhanna Army depot BRAC office

Phone

Fax Phone

FROM: Jim Owsley & Ann Reese
Base Closure Commission

Phone 703-696-0504 ext 176

Fax Phone 703-696-0550

CC:

REMARKS: ☒ Urgent ☐ For your review ☐ Reply ASAP ☐ Please Comment

We request the following information be presented to Commissioners during your base visit:

- The average age of all buildings on your installation
- A list showing the age and description for each building within your depot's industrial area.
- For ALC's only – a copy of the Comprehensive Land Use Plan prepared for FAA.

FMPB — Another Copy!

KB (24)

DIRECTOR (23)
DEPUTY D
EXEC OFFI
By DA 23 MAY 1995
To FMP INFO ccs

FAC NR	CAT CODE	NOMENCLATURE	AREA AMOUNT	UM	ORG ASG	YR CP	AGE
237	211-271	SHP INSTM OVHL DEP	97,920	SF	540	89	6
238	211-152	SHP ACFT GEN PURP	60,200	SF	560	86	9
239	211-111	HG MAINT	13,128	SF	500	57	38
240	211-111	HG MAINT	12,595	SF	500	57	38
241	211-254	SHP ACFT & ENG DEP	165,872	SF	540	84	11
242	211-254	SHP ACFT & ENG DEP	186,000	SF	540	88	7
243	211-152	SHP ACFT GEN PURP	576,506	SF	560	75	20
248	211-153	SHP NON-DESTR INSP	41,120	SF	560	88	7
249	211-152	SHP ACFT GEN PURP	190	SF	500	72	23
250	610-675	LOG FCLTY DEP OPS	373,727	SF	520	38	57
251	211-116	HG, MAINT DEP	592,854	SF	500	39	56
253	211-271	SHP INSTM OVHL DEP	180	SF	540	69	26
257	211-152	SHP ACFT GEN PURP	558	SF	500	90	5
258	310-932	SC LAB AVIONICS	17,700	SF	560	89	6
260	211-152	SHP ACFT GEN PURP	3,080	SF	560	89	6
263	610-675	LOG FCLTY DEP OPS	98,234	SF	560	42	53
269	610-675	LOG FCLTY DEP OPS	152,813	SF	500	42	53
324	211-254	SHP ACFT & ENG DEP	240	SF	560	60	35
344	211-254	SHP ACFT & ENG DEP	17,174	SF	560	43	52
349	211-254	SHP ACFT & ENG DEP	273	SF	560	73	22
350	141-763	TECH LAB	6,420	SF	520	43	52
351	211-254	SHP ACFT & ENG DEP	41,361	SF	520	43	52
360	211-116	HG, MAINT DEP	73,094	SF	500	44	51
362	211-116	HG, MAINT DEP	92,675	SF	500	41	54
364	171-621	TECH TNG CLASSROOM	960	SF	500	83	12
365	211-116	HG, MAINT DEP	41,460	SF	500	41	54
366	218-712	SHP A/SE STOR FCLT	1,798	SF	560	69	26
368	141-765	LAB, Q/C DEP	42,112	SF	560	42	53
371	211-254	SHP ACFT & ENG DEP	100	SF	500	65	30
372	211-159	ACFT COR CON	297	SF	500	65	30
375	211-159	ACFT COR CON	38,900	SF	500	72	23
377	723-392	SAN LATRINE	909	SF	500	72	23
378	211-159	ACFT COR CON	2,610	SF	500	71	24
380	211-161	COR CON UTIL STOR	8,785	SF	500	70	25
383	811-149	ELEC PWR STN BLDG	1,200	SF	500	95	0
385	211-153	SHP NON-DESTR INSP	8,653	SF	500	70	25
411	211-254	SHP ACFT & ENG DEP	21,774	SF	500	43	52
412	217-735	SHP, ELCT O&T/D	5,333	SF	520	54	41
426	211-254	SHP ACFT & ENG DEP	697	SF	500	68	27
431	211-183	TST CELL	52,301	SF	500	56	39
441	211-152	SHP ACFT GEN PURP	9,072	SF	500	88	7
473	211-254	SHP ACFT & ENG DEP	41,225	SF	540	42	53
475	211-254	SHP ACFT & ENG DEP	251,393	SF	500	42	53
476	211-254	SHP ACFT & ENG DEP	180	SF	500	93	2
605	217-735	SHP, ELCT O&T/D	1,248	SF	520	86	9
610	217-735	SHP, ELCT O&T/D	24,000	SF	520	69	26
613	217-735	SHP, ELCT O&T/D	1,648	SF	520	82	13
616	217-735	SHP, ELCT O&T/D	10,922	SF	520	68	27
618	141-764	INTEGR SPT FCLTY	73,112	SF	560	84	11
619	217-735	SHP, ELCT O&T/D	5,461	SF	520	68	27
620	141-764	INTEGR SPT FCLTY	75,000	SF	560	87	8
632	211-152	SHP ACFT GEN PURP	2,047	SF	500	89	6
633	211-152	SHP ACFT GEN PURP	2,047	SF	500	89	6
637	217-735	SHP, ELCT O&T/D	111,000	SF	520	88	7
640	217-735	SHP, ELCT O&T/D	150,190	SF	520	54	41
642	610-675	LOG FCLTY DEP OPS	12,392	SF	520	66	29
647	211-152	SHP ACFT GEN PURP	358	SF	500	70	25
652	211-152	SHP ACFT GEN PURP	49,212	SF	560	46	49
654	218-712	SHP A/SE STOR FCLT	18,334	SF	560	65	30
655	217-735	SHP, ELCT O&T/D	203,958	SF	520	53	42
658	211-159	ACFT COR CON	11,096	SF	520	54	41

660	211-152	SHP ACFT GEN PURP	8,188	SF	520	68	27
667	217-736	SHP, RADOM O&T/D	8,191	SF	500	57	38
672	218-712	SHP A/SE STOR FCLT	800	SF	560	65	30
674	218-712	SHP A/SE STOR FCLT	400	SF	560	65	30
677	218-868	LAB, PME	30,134	SF	560	74	21
692	211-159	ACFT COR CON	50,423	SF	500	69	26
694	211-254	SHP ACFT & ENG DEP	8,500	SF	500	71	24
695	211-161	COR CON UTIL STOR	384	SF	500	65	30
704	211-116	HG, MAINT DEP	99,478	SF	500	60	35
707	211-179	MAINT DOCK, FL SYS	5,280	SF	500	56	39
708	211-179	MAINT DOCK, FL SYS	5,280	SF	500	56	39
711	211-152	SHP ACFT GEN PURP	26,775	SF	500	69	26
720	723-392	SAN LATRINE	480	SF	500	70	25
721	211-175	MAINT DOCK, M/A	21,600	SF	500	57	38
722	211-175	MAINT DOCK, M/A	21,600	SF	500	57	38
723	211-152	SHP ACFT GEN PURP	1,806	SF	500	57	38
725	890-123	AIR COND PLT BLDG	437	SF	500	60	35
726	211-152	SHP ACFT GEN PURP	800	SF	500	60	35
733	211-175	MAINT DOCK, M/A	12,600	SF	500	57	38
734	211-175	MAINT DOCK, M/A	15,600	SF	500	57	38
735	211-175	MAINT DOCK, M/A	8,400	SF	500	57	38
738	211-254	SHP ACFT & ENG DEP	320	SF	500	95	0
741	125-977	PMP STN, LF	78	SF	500	70	25
751	211-179	MAINT DOCK, FL SYS	6,720	SF	500	70	25
752	211-179	MAINT DOCK, FL SYS	6,720	SF	500	70	25
753	211-179	MAINT DOCK, FL SYS	6,720	SF	500	70	25
754	211-179	MAINT DOCK, FL SYS	6,720	SF	500	70	25
755	890-136	CMPRS AIR PLT BLDG	252	SF	500	60	35
757	442-258	STOR LIQ OXYGEN	1,432	SF	500	62	33
758	442-258	STOR LIQ OXYGEN	85	SF	500	62	33
762	211-152	SHP ACFT GEN PURP	3,240	SF	500	57	38
763	211-179	MAINT DOCK, FL SYS	4,320	SF	500	57	38
764	211-179	MAINT DOCK, FL SYS	3,600	SF	500	57	38
765	211-179	MAINT DOCK, FL SYS	3,600	SF	500	57	38
766	890-136	CMPRS AIR PLT BLDG	150	SF	500	70	25
767	211-179	MAINT DOCK, FL SYS	4,320	SF	500	57	38
768	125-977	PMP STN, LF	92	SF	500	70	25
770	211-152	SHP ACFT GEN PURP	2,400	SF	500	69	26
771	890-136	CMPRS AIR PLT BLDG	336	SF	500	69	26
772	211-175	MAINT DOCK, M/A	53,160	SF	500	69	26
773	211-152	SHP ACFT GEN PURP	2,400	SF	500	72	23
774	211-175	MAINT DOCK, M/A	13,440	SF	500	72	23
777	211-175	MAINT DOCK, M/A	6,480	SF	500	95	0
784	211-175	MAINT DOCK, M/A	6,480	SF	500	95	0
791	211-152	SHP ACFT GEN PURP	768	SF	500	65	30
792	890-136	CMPRS AIR PLT BLDG	480	SF	500	72	23
796	811-149	ELEC PWR STN BLDG	144	SF	500	72	23
799	890-136	CMPRS AIR PLT BLDG	480	SF	500	72	23
877	211-175	MAINT DOCK, M/A	18,278	SF	500	64	31
878	211-175	MAINT DOCK, M/A	17,751	SF	500	64	31
879	211-254	SHP ACFT & ENG DEP	15,600	SF	540	90	5
1082	217-735	SHP, ELCT O&T/D	4,402	SF	520	68	27
1093	217-735	SHP, ELCT O&T/D	37,485	SF	560	77	18

Average Age of DMBA Facilities: **28.28 Years**

Average Age of All Facilities on Base: **33.27 Years**

Org Code 500 = LA
520 = LH
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Document Separator

CCX

cc: FM

FAX

Date May 15, 1995

Number of pages including cover sheet 1

TO: McClellan, Robins, Tinker, Kelly and Hill AFB BRAC offices, Letterkenny Army depot BRAC office, Tobyhanna Army depot BRAC office

Phone

Fax Phone

FROM: Jim Owsley & Ann Reese
Base Closure Commission

Phone 703-696-0504 ext 176

Fax Phone 703-696-0550

CC:

REMARKS: ☒ Urgent ☐ For your review ☐ Reply ASAP ☐ Please Comment

We request the following information be presented to Commissioners during your base visit:

- The average age of all buildings on your installation
- A list showing the age and description for each building within your depot's industrial area.
- For ALC's only – a copy of the Comprehensive Land Use Plan prepared for FAA.

FMPB — Another Copy!

KB (24)

DIRECTOR (23)
DEPUTY DIR
EXEC OFFICER
By Sm DATE 23 MAY 1995
To FMP INFO ccs

FAC NR	CAT CODE	NOMENCLATURE	AREA AMOUNT	UM	ORG ASG	YR CP	AGE
237	211-271	SHP INSTM OVHL DEP	97,920	SF	540	89	6
238	211-152	SHP ACFT GEN PURP	60,200	SF	560	86	9
239	211-111	HG MAINT	13,128	SF	500	57	38
240	211-111	HG MAINT	12,595	SF	500	57	38
241	211-254	SHP ACFT & ENG DEP	165,872	SF	540	84	11
242	211-254	SHP ACFT & ENG DEP	186,000	SF	540	88	7
243	211-152	SHP ACFT GEN PURP	576,506	SF	560	75	20
248	211-153	SHP NON-DESTR INSP	41,120	SF	560	88	7
249	211-152	SHP ACFT GEN PURP	190	SF	500	72	23
250	610-675	LOG FCLTY DEP OPS	373,727	SF	520	38	57
251	211-116	HG, MAINT DEP	592,854	SF	500	39	56
253	211-271	SHP INSTM OVHL DEP	180	SF	540	69	26
257	211-152	SHP ACFT GEN PURP	558	SF	500	90	5
258	310-932	SC LAB AVIONICS	17,700	SF	560	89	6
260	211-152	SHP ACFT GEN PURP	3,080	SF	560	89	6
263	610-675	LOG FCLTY DEP OPS	98,234	SF	560	42	53
269	610-675	LOG FCLTY DEP OPS	152,813	SF	500	42	53
324	211-254	SHP ACFT & ENG DEP	240	SF	560	60	35
344	211-254	SHP ACFT & ENG DEP	17,174	SF	560	43	52
349	211-254	SHP ACFT & ENG DEP	273	SF	560	73	22
350	141-763	TECH LAB	6,420	SF	520	43	52
351	211-254	SHP ACFT & ENG DEP	41,361	SF	520	43	52
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475	211-254	SHP ACFT & ENG DEP	251,393	SF	500	42	53
476	211-254	SHP ACFT & ENG DEP	180	SF	500	93	2
605	217-735	SHP, ELCT O&T/D	1,248	SF	520	86	9
610	217-735	SHP, ELCT O&T/D	24,000	SF	520	69	26
613	217-735	SHP, ELCT O&T/D	1,648	SF	520	82	13
616	217-735	SHP, ELCT O&T/D	10,922	SF	520	68	27
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652	211-152	SHP ACFT GEN PURP	49,212	SF	560	46	49
654	218-712	SHP A/SE STOR FCLT	18,334	SF	560	65	30
655	217-735	SHP, ELCT O&T/D	203,958	SF	520	53	42
658	211-159	ACFT COR CON	11,096	SF	520	54	41

660	211-152	SHP ACFT GEN PURP	8,188	SF	520	68	27
667	217-736	SHP, RADOM O&T/D	8,191	SF	500	57	38
672	218-712	SHP A/SE STOR FCLT	800	SF	560	65	30
674	218-712	SHP A/SE STOR FCLT	400	SF	560	65	30
677	218-868	LAB, PME	30,134	SF	560	74	21
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694	211-254	SHP ACFT & ENG DEP	8,500	SF	500	71	24
695	211-161	COR CON UTIL STOR	384	SF	500	65	30
704	211-116	HG, MAINT DEP	99,478	SF	500	60	35
707	211-179	MAINT DOCK, FL SYS	5,280	SF	500	56	39
708	211-179	MAINT DOCK, FL SYS	5,280	SF	500	56	39
711	211-152	SHP ACFT GEN PURP	26,775	SF	500	69	26
720	723-392	SAN LATRINE	480	SF	500	70	25
721	211-175	MAINT DOCK, M/A	21,600	SF	500	57	38
722	211-175	MAINT DOCK, M/A	21,600	SF	500	57	38
723	211-152	SHP ACFT GEN PURP	1,806	SF	500	57	38
725	890-123	AIR COND PLT BLDG	437	SF	500	60	35
726	211-152	SHP ACFT GEN PURP	800	SF	500	60	35
733	211-175	MAINT DOCK, M/A	12,600	SF	500	57	38
734	211-175	MAINT DOCK, M/A	15,600	SF	500	57	38
735	211-175	MAINT DOCK, M/A	8,400	SF	500	57	38
738	211-254	SHP ACFT & ENG DEP	320	SF	500	95	0
741	125-977	PMP STN, LF	78	SF	500	70	25
751	211-179	MAINT DOCK, FL SYS	6,720	SF	500	70	25
752	211-179	MAINT DOCK, FL SYS	6,720	SF	500	70	25
753	211-179	MAINT DOCK, FL SYS	6,720	SF	500	70	25
754	211-179	MAINT DOCK, FL SYS	6,720	SF	500	70	25
755	890-136	CMPRS AIR PLT BLDG	252	SF	500	60	35
757	442-258	STOR LIQ OXYGEN	1,432	SF	500	62	33
758	442-258	STOR LIQ OXYGEN	85	SF	500	62	33
762	211-152	SHP ACFT GEN PURP	3,240	SF	500	57	38
763	211-179	MAINT DOCK, FL SYS	4,320	SF	500	57	38
764	211-179	MAINT DOCK, FL SYS	3,600	SF	500	57	38
765	211-179	MAINT DOCK, FL SYS	3,600	SF	500	57	38
766	890-136	CMPRS AIR PLT BLDG	150	SF	500	70	25
767	211-179	MAINT DOCK, FL SYS	4,320	SF	500	57	38
768	125-977	PMP STN, LF	92	SF	500	70	25
770	211-152	SHP ACFT GEN PURP	2,400	SF	500	69	26
771	890-136	CMPRS AIR PLT BLDG	336	SF	500	69	26
772	211-175	MAINT DOCK, M/A	53,160	SF	500	69	26
773	211-152	SHP ACFT GEN PURP	2,400	SF	500	72	23
774	211-175	MAINT DOCK, M/A	13,440	SF	500	72	23
777	211-175	MAINT DOCK, M/A	6,480	SF	500	95	0
784	211-175	MAINT DOCK, M/A	6,480	SF	500	95	0
791	211-152	SHP ACFT GEN PURP	768	SF	500	65	30
792	890-136	CMPRS AIR PLT BLDG	480	SF	500	72	23
796	811-149	ELEC PWR STN BLDG	144	SF	500	72	23
799	890-136	CMPRS AIR PLT BLDG	480	SF	500	72	23
877	211-175	MAINT DOCK, M/A	18,278	SF	500	64	31
878	211-175	MAINT DOCK, M/A	17,751	SF	500	64	31
879	211-254	SHP ACFT & ENG DEP	15,600	SF	540	90	5
1082	217-735	SHP, ELCT O&T/D	4,402	SF	520	68	27
1093	217-735	SHP, ELCT O&T/D	37,485	SF	560	77	18

Average Age of DMBA Facilities: **28.28 Years**

Average Age of All Facilities on Base: **33.27 Years**

Org Code 500 = LA
520 = LH
540 = LI
560 = TI

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MCCLELLAN AFB
3237 Peacekeeper Way
McClellan AFB, CA

F A X C O V E R S H E E T

DATE:	June 1, 1995	**TIME:**	11:28 AM
TO:	Joe Varallo	**PHONE:**	
FROM:	Diane Margetts	**PHONE:**	643-2713
		FAX:	643-3549
RE:			
CC:			

Number of pages including cover sheet: 2

Message

Joe

Attached are answere to Ann's questions. If I can provide any more data, please contact me at DSN 633-2713.

DIANE MARGETTS

Following is information requested by Ann Reese (please note: there has been a significant increase in our interservice workloads in the last several months and this upward trend is expended to continue.)

1. What is the percent of interservice workload in electronics and associated direct labor hours?

Projected by end of fiscal year: 40 percent
Projected labor hours: 560,000

2. For total interservicing, what are the components?

	Army	Navy	Marine Corps	Other*
Electronics	x	x	x	x
Electrical	x	x	x	
Instruments	x	x	x	
Structures	x	x	x	
Other	x	x	x	x

*** Other includes: NASA, Defense Logistics Agency, US Mint, Federal Aviation Administration, Dept of Transportation, Defense Mapping agency, US border Patrol, and numerous Foreign Military Sales Countries**

3. What are the total interservice hours for the depot?

833,000 hours

4. What are interservice hours for the total base?

833,000 hours; although there are some small pockets of interservice work outside the depot, it is insignificant

Diane Margetts, SM-ALC/FMPT, DSN 633-2713 1 June 95

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Answers To Questions Asked By The BRAC Staff

Item 1: FY95 Current Workload
Item 2: Projected Workload

	Carry-In	New Orders**	Available Workload	Production	Carry-Out
FY95	3,210,072	5,523,964	8,734,036	6,436,157	2,297,879
FY96	2,297,879	5,509,051	7,806,930	6,119,794	1,687,136
FY97	1,687,136	5,113,950	6,801,086	5,655,849	1,145,237
FY98	1,145,237	5,037,275	6,182,512	5,355,823	826,689
FY99	826,689	4,871,138	5,697,827	5,216,187	481,640
FY00*	481,640	4,871,138	5,352,778	5,026,259	326,519
FY01*	326,519	4,871,138	5,197,657	4,880,600	317,057

* Data Not Available. ROM Estimate.
** From JCSG-DM Table 3.1.b.

Item 3: Amount of Core Workload
Item 4: Percentage Of Core (Core As A Percent Of Workload)

	Production	New Orders**	Percent Workload
FY95	4,963,554	4,260,072	77.12%
FY96	4,719,575	4,248,571	77.12%
FY97	4,681,255	4,232,734	82.77%
FY98	4,502,406	4,234,617	84.07%
FY99	4,530,292	4,230,615	**86.85%**
FY00*	4,365,338	4,230,615	86.85%
FY01*	4,238,833	4,230,615	86.85%

* Data Not Available. ROM Estimate.
** From JCSG-DM Table 13.1a

Item 5: 2-Shift Capacity

	2-Shift** Capacity	2-Shift** Max Potential
FY95	12,722,965	18,244,483
FY96	12,722,967	18,408,566
FY97	12,722,967	18,790,753
FY98	12,722,944	18,523,453
FY99	12,722,944	18,523,453
FY00*	12,722,944	18,523,453
FY01*	12,722,944	18,523,453

* Data Not Available. ROM Estimate.
**Estimate Using 1.8 Multiplier

Answers To Questions Asked By The BRAC Staff

Item 6 & 11: Average ALC Salary (1994 Actual)
Item 10: Average Depot Salary

	Annual Wages	Annual Benefits*	Annual Total
ALC Civilians	$36,205.91	$12,780.69	$48,986.60
Depot Blue Collar	$36,827.62	$13,000.15	$49,827.77
Depot-Total	$37,692.56	$13,305.47	$50,998.03
*35.3% per AFI 64-503, Table 31.1			

Item 7: Critical Skills: N/A

Item 8: Lost Time Incidents per 200K Hours

	Base Rate*	1994 US OSHA Case Create Rate			
FY92	**1.22**	AFFDTC	2.91	OO-ALC	1.65
FY93	**1.38**	AFFTC	2.97	SA-ALC	2.54
FY94	**1.41**	AMARC	6.62	SM-ALC	2.47
* Please See Attached Letter For Explanation Of Rates		OC-ALC	3.88	WR-ALC	2.61

Item 9: Labor Hour Cost For WG-11 step 3

As Of 1 Oct 94	**$17.34**

Items 10 & 11: See Above

Item 12: Depot Hour Cost - 1994

	Labor	Material	Other	Total
Direct	$28.07	$26.33	$0.82	$55.22
Prod Overhead	$16.53	$2.75	$4.76	$24.04
G&A Expenses	$4.52	$0.14	$5.37	$10.03
Total	$49.12	$29.22	$10.95	**$89.29**

Item 13: Indirect Costs as a Percentage of Total Depot Hour Costs

	Tot Cost($M)	Indirect($M)	Percent
FY94	$487	$186	**38.2%**

DEPARTMENT OF THE AIR FORCE

HEADQUARTERS AIR FORCE MATERIEL COMMAND
WRIGHT-PATTERSON AIR FORCE BASE OHIO

APR 12 REC'D

APR 12 REC'D

28 Mar 94

MEMORANDUM FOR SEE DISTRIBUTION

FROM: HQ AFMC/SEO
4170 Hebble Creek Rd STE 1
Wright Patterson AFB OH 45433-5644

SUBJECT: Injury/Illness Data - ACTION MEMORANDUM

1. The attached action plan addresses injury, illness, and mishap cost data collection and use. The suggested integrated product team (IPT) is the result of a discussion at the last Ground Safety Corporate Board Meeting. Request you review the action plan and provide an IPT member, if desired (Please note: ASC, WR-ALC, OC-ALC and SM-ALC volunteered at the meeting to participate). You will also need to determine and list your needs and your customer's needs for injury/illness data prior to our first meeting.

2. Discuss this action plan with all concerned at your base. Based on some of the problems we identified as we developed the action plan, we have expanded the scope of the effort. If we are off track, let us know, but we do not believe that issues related to mishap costs can be fully addressed without working the related issues listed in the action plan.

3. Offices that volunteer should program for travel to at least two meetings. We expect the first one to be here at Wright-Patterson; the other to be determined. A third meeting may be required if indicated by customer feedback once the product is fielded.

4. So that we can get started as soon as possible, we need your input by 25 April 94. Call me at 787-1366, or email thomason@wpdis01.wpafb.af.mil.

KERRY L. THOMASON
Safety Manager
Office of Safety

Attachments
1. Action Plan
2. Distribution List

ATCH 1

INJURY/ILLNESS DATA COLLECTION AND USE

Current Situation: Injury/illness data is collected by at least three organizations: SG, SE and DP. Some production organizations are also collecting information, depending upon local needs. AFR 127-4 attempts to standardize injury reporting, but has application at Class D and above only. AFR 127-4 also provides loopholes that further hinder effective collection and use. Compensation data is also available, but not in a timely manner -- usually over three months behind.

Problems:

1. No consistent manner by which MAJCOM can monitor/trend base level injury rates.

   -- No standardized command program.

2. No consistent manner by which Center can monitor/trend base level organizations.

   -- No standardized base level tracking system.

3. Attempts at "meaningful" metrics hampered by inconsistencies.

4. No way to capture and use mishap costs as injury/illness prevention tools

5. Fragmented (and possibly inadequate) OSHA recordkeeping.

Result: Base level OS&H and DP organizations expend resources trying to compensate for above problems. Commanders are not always provided clear assessments of program performance. Injury/illness prevention efforts are hampered as well as related Compensation cost reduction programs.

Solution: Establish an integrated product team chartered as follows: "To determine the most efficient and effective process for developing and providing our customers with useful injury and illness data and meaningful and accurate mishap cost data."

Stakeholders: SE, SG, DPC at command and field level. Serviced organizations at base level.

Printed: 6 Feb 1995 at 1106 PST
Message 2 in mailbox /usr/spool/mail/smalcsed

DATED : 6 Feb 1995 at 1019 EST
SUBJECT : Projected OSHA Target Inspection for FY96
SENT BY : RUSSELL@WPGATE1.WPAFB.AF.MIL (John W. Russell)
SENT TO : waltersre@post6.laafb.af.mil, bailey@hap.arnold.af.mil, beedie@eglin.af.mil, campbeji@hillwpos.hill.af.mil, wrdis01!cbatchel, Ella==M.=Kirkham%ESC-SE%SPTG-IM@Tango-VS1.hanscom.af.mil, gsouders@po25.tinker.af.mil, harderj@tango-vs1.hanscom.af.mil, phillips%sc@mhs.elan.af.mil, jgobar@sesrv.senet.kelly.af.mil, lemmed@vanadium.brooks.af.mil, pcarlisl@agdis01.newark.af.mil, pconfort@sesrv.senet.kelly.af.mil, safety@amdis01.amarc.af.mil, scholl@agdis01.newark.af.mil, seg@commgate.kirtland.af.mil, smalcsed@smdis01.mcclellan.af.mil, tiptondg@p5.ams.wpafb.af.mil
STATUS : old, read

Form: Memo
Text: (31 lines follow)

Based on our calculations of FY94 L/T case create rates, it appears that we have two organizations (OC-ALC and AMARC) that exceeded the Gov't average L/T case create rate of 3.08 during FY94. Since AMARC is scheduled for an OSHA targeted inspection this year, it is unlikely that they will be targeted two consecutive years; therefore, Tinker should be our only base on the OSHA targeted list.

Following is a recap as to how each of our organizations look concerning the L/T case create picture:

AFDTC	2.91
AFFTC	2.97
AGMC	1.95
AMARC	3.62 *
ASC	1.68
ESC	0.85
HSC	1.53
OC-ALC	3.88 *
OO-ALC	1.65
SA-ALC	2.54
SM-ALC	2.47
SMC	1.16
WR-ALC	2.61
377ABW	2.71

As indicated, this is preliminary data and we will forward the actual OSHA Targeting list of AFMC bases as soon as we receive the information from OSHA. We hope this information is useful as you participate in new injury case create reduction and FECA Working Group activities.

Thanks, J. Russell
Use Proportional Font: true

Document Separator

FAX

OC-ALC/FMPLM
TINKER AFB, OK

FROM: Rita Smith
ROUTING SYMBOL:
OFFICE PHONE: 339 2012
FAX NUMBER:
DSN: 339-2887
COMM: 739-2887

SUBJECT: Info for BRAC Commission Staff

TO: Ann Reese
ROUTING SYMBOL:
OFFICE PHONE: 703 696 0504 X176

Message To:

FAX NUMBER: 703 696 0532
Page 1 of 3
(Including this page)

"Do not transmit classified information over unsecured telecommunications systems, official DoD telecommunications systems are subject to monitoring. Use of DoD telecommunications systems constitutes consent to monitoring."

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS OKLAHOMA CITY AIR LOGISTICS CENTER (AFMC)
TINKER AIR FORCE BASE, OKLAHOMA

27 MAY 1995

MEMORANDUM FOR BASE CLOSURE COMMISSION
ATTENTION: MS ANN REESE
1700 N MOORE ST STE 1425
ARLINGTON VA 22209

FROM: OC-ALC/FMP
3001 Staff Drive Ste 1AG75A
Tinker AFB OK 73145-3056

SUBJECT: Information for BRAC Commission Staff (Your FAX, 14 May 95)

Attachment 1 contains the information requested to be prepared and forwarded to the BRAC Commission Staff prior to the 7 Jun 95 visit to Tinker AFB, OK. Please address any questions to Carol Cloe or Rita Smith, OC-ALC/FMPPM, DSN 339-5195, FAX DSN 339-2887.

JOE W. SIMMONS
Chief, Plans and Programs Division
Comptroller Directorate

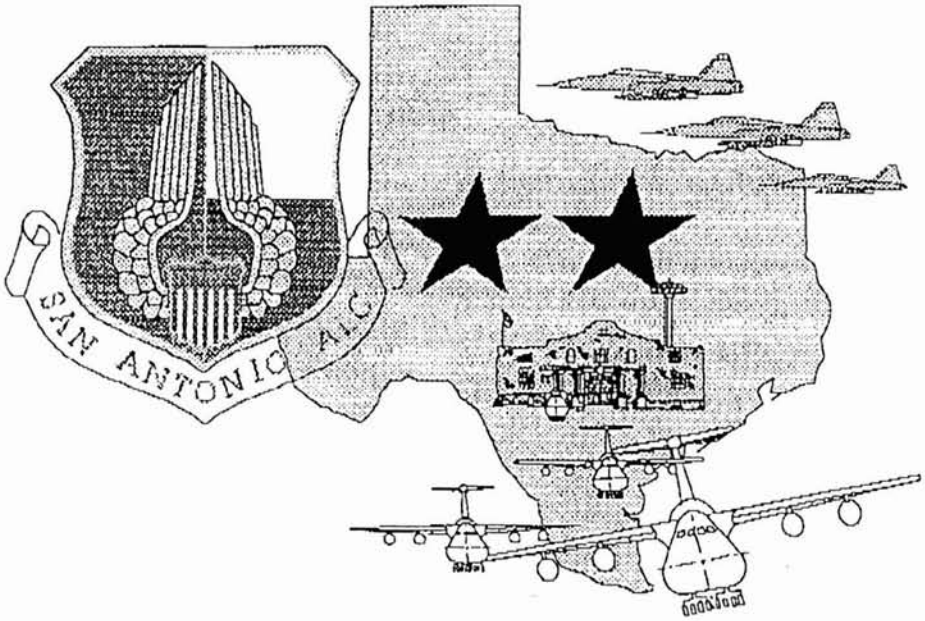
Attachment:
Information Sheet

OC-ALC
TINKER AFB OK

			BRAC DATA CALL					
			AS OF 25 MAY 95					
LOST TIME INCIDENTS PER 200K HOURS				FY92	FY93	FY94		
				0.58	0.68	1.12		
AVERAGE LABOR HOUR COST - WG-11/3								
AS OF 1 OCT 94:						$15.37/HR		
AVERAGE DEPOT (DMBA) SALARY AS OF 1 OCT 94:						$34,406/YEAR		
						AVG	AVG	AVG
AVERAGE ALC SALARY AS OF 1 OCT 94:						BASIC	BENEFIT	TOTAL
				DMBA		$34,406	$7,426	$41,832
				SMBA		$39,353	$7,477	$46,830
				O&M		$34,653	$7,552	$42,205
				TOTAL		$35,460	$7,463	$42,924
						COST		
FY94 DEPOT HOUR COST:			COST PER DPSH W/ MATERIAL			$115.82		
			COST PER DPSH W/O MATERIAL			$55.97		
			COST PER DPAH W/ MATERIAL			$106.20		
			COST PER DPAH W/O MATERIAL			$51.32		
FY94 INDIRECT COST % OF						COST	% OF TOTAL	
TOTAL DEPOT HOUR COST:			COST PER DPSH W/ MATERIAL			$40.19	34.7%	
			COST PER DPSH W/O MATERIAL			$31.34	56.0%	
			COST PER DPAH W/ MATERIAL			$36.86	34.7%	
			COST PER DPAH W/O MATERIAL			$28.74	56.0%	

Document Separator

SAN ANTONIO AIR LOGISTICS CENTER
FAX COVER SHEET



KELLY AIR FORCE BASE

TO: **ANN REESE**

OFFICE: **BASE CLOSURE COMMISSION**

OFFICE NO.: **(703) 696-0504 EXT 176** FAX NO.: **(703) 696-0550**

NUMBER OF PAGES (INCLUDING THIS PAGE): **3**

SUBJECT: **REQUEST FOR DATA (YOUR FAX, 18 MAY 1995)**

COMMENTS:

FROM: **MAJOR GENERAL LEWIS E. CURTIS III**

OFFICE: **SA-ALC/CC**

OFFICE NO.: **(210) 925-6914** FAX #: (DSN) 945-9928
(COMM) 210-925-9928

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS SAN ANTONIO AIR LOGISTICS CENTER (AFMC)
KELLY AIR FORCE BASE, TEXAS

05 JUN 1995

MEMORANDUM FOR DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION
ATTN: Ms. Ann Reese
1700 N Moore St Ste 1425
Arlington VA 22209

FROM: SA-ALC/CC
100 Moorman Ste 1
Kelly AFB TX 78241-5808

SUBJECT: Request for Data (Your Fax, 18 May 1995)

1. Responses to your 18 May 1995 request for data are outlined below. The Air Force uses the terms "depot" and "ALC" interchangeably, yet it is apparent the query defines the terms differently. Therefore, all responses to "depot" questions apply to our Depot Maintenance Business Area. We will address the other elements of data specifically requested for the Commissioners' review during the base visit.

a. Lost time incidents per 200K hours for years 1992, 1993, 1994.

FY92	FY93	FY94
1.19	1.22	1.36

b. Average labor hour cost of a WG-11 step three as of 1 October 1994: $13.40/hour

c. Average depot salary as of 1 October 1994:

- Base rate: $31,118 (excluding benefits, overtime pay, etc.)
- Accelerated rate: $43,130 (with benefits, overtime pay, etc.)

d. Average ALC salary as of 1 October 1994:

- Base salary: $33,262 (excluding benefits, overtime pay, etc.)
- Accelerated salary: $46,101 (with benefits, overtime pay, etc.)

e. Depot hour cost:

- The best measure of a depot's cost as a value to the taxpayer is based upon the labor cost as the total depot hour cost includes materials. Engine repair, which is a primary workload at Kelly AFB, is material intensive and that portion of the cost would be incurred wherever the work is performed. Therefore, the depot hour costs provided below are reported both without and with material. Also included in depot hour costs are "other" costs which are primarily indirect and include such costs as shop rearrangement, travel, facility maintenance and alterations, training, equipment rental, contract services, depreciation, etc.

	Without Material	**With Material**
A/O 30 April 1995	$54.94	$129.07
A/O 30 September 1994	$52.63	$118.84

f. Indirect costs as a percentage of total depot hour costs:

	Without Material	**With Material**
A/O 30 April 1995	63.17%	31.67%
A/O 30 September 1994	61.91%	33.17%

2. Our point of contact is Ms. Deborah Wilson, SA-ALC/FMPF, DSN 945-8274, fax DSN 945-8246.

LEWIS E. CURTIS III
Major General, USAF
Commander

Document Separator

THE DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION

EXECUTIVE CORRESPONDENCE TRACKING SYSTEM (ECTS) # 950605-12

FROM: CURTIS, LEWIS E.	TO: REESE, ANN
TITLE: COMMANDER	TITLE: CROSS SERVICE GAO ANALYST
ORGANIZATION: KELLY AFB	ORGANIZATION: DBCRC
INSTALLATION (s) DISCUSSED: KELLY AFB	

OFFICE OF THE CHAIRMAN	FYI	ACTION	INIT	COMMISSION MEMBERS	FYI	ACTION	INIT
CHAIRMAN DIXON				COMMISSIONER CORNELLA			
STAFF DIRECTOR	✓			COMMISSIONER COX			
EXECUTIVE DIRECTOR	✓			COMMISSIONER DAVIS			
GENERAL COUNSEL	✓			COMMISSIONER KLING			
MILITARY EXECUTIVE				COMMISSIONER MONTOYA			
				COMMISSIONER ROBLES			
DIR./CONGRESSIONAL LIAISON	✓			COMMISSIONER STEELE			
DIR./COMMUNICATIONS				REVIEW AND ANALYSIS			
				DIRECTOR OF R & A	✓		
EXECUTIVE SECRETARIAT				ARMY TEAM LEADER			
				NAVY TEAM LEADER			
DIRECTOR OF ADMINISTRATION				AIR FORCE TEAM LEADER			
CHIEF FINANCIAL OFFICER				INTERAGENCY TEAM LEADER	✓		
DIRECTOR OF TRAVEL				CROSS SERVICE TEAM LEADER	✓		
DIR./INFORMATION SERVICES							

TYPE OF ACTION REQUIRED

	Prepare Reply for Chairman's Signature		Prepare Reply for Commissioner's Signature
	Prepare Reply for Staff Director's Signature		Prepare Direct Response
	ACTION: Offer Comments and/or Suggestions	✓	FYI

Subject/Remarks:

DISCUSSING AVERAGE SALARIES AND LABOR COST PER HOUR OF BASE.

Due Date:	Routing Date: 950605	Date Originated: 950605	Mail Date:

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS SAN ANTONIO AIR LOGISTICS CENTER (AFMC)
KELLY AIR FORCE BASE, TEXAS

Please refer to the number
when replying 950605-1

0 5 JUN 1995

MEMORANDUM FOR DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION
ATTN: Ms. Ann Reese
1700 N Moore St Ste 1425
Arlington VA 22209

FROM: SA-ALC/CC
100 Moorman Ste 1
Kelly AFB TX 78241-5808

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LEWIS E. CURTIS III
Major General, USAF
Commander

Document Separator

Memo To: BRAC Closure Commission
Attn: Ann Reese

Subject: BRAC Data Request

1. The following data is provided in response to your 18 May 1995 FAX memo:

   a. Lost Time Incidents per 200K hrs
      (1) FY92: .58
      (2) FY93: .57
      (3) FY94: .56

   b. WG-11 Step 3 hourly rate as of 1 Oct 1994: $14.24

   c. Average depot salary as of 1 Oct 1994:
      Salary: $33,184
      Benefits: $ 7,162
      Total: $40,346

   d. Average ALC salary as of 1 Oct 1994:
      Salary: $34,808
      Benefits: $ 7,285
      Total: $42,093

   e. FY94 depot hour cost: $77.01

	Labor	Material	Other	Total
Direct	$22.20	$23.82	$ .34	$46.35
Prod Ovhd	$12.83	$ 6.14	$7.96	$26.93
G&A	$ 3.00	$ .15	$ .58	$ 3.73
Total	$38.02	$30.11	$8.88	$77.01

   f. FY94 indirect cost as a percentage of total depot hour costs: 39.81%

2. If you have additional questions please call me at DSN 468-3202 or FAX, 468-9528.

GEORGE FALLDINE
Deputy Director
Financial Mgt & Comptroller Dir

WR-ALC/FMP

480 2ND STREET, SUITE 200
ROBINS AFB GA 31098-1640

PLANS AND PROGRAMS DIVISION
FINANCIAL MANAGEMENT

TO: Ms. Ann Reese

OFFICE: Base Closure Comm.

PHONE: 703-696-0504 ext 176

SUBJECT: BRAC data

NUMBER OF PAGES: 1
(NOT INCLUDING THIS PAGE)

COMMENTS: Please call if you need additional info

FROM: BETTY HALL

OFFICE: WR-ALC/FMPA

PHONE: DSN 468-5542

WR-ALC/FMP FAX

DSN 468-9528
(912) 926-9528
VOICE
DSN 468-5542

OC-ALC
TINKER AFB OK

BRAC DATA CALL
AS OF 25 MAY 95

LOST TIME INCIDENTS PER 200K HOURS	FY92	FY93	FY94
	0.58	0.68	1.12

AVERAGE LABOR HOUR COST - WG-11/3
AS OF 1 OCT 94: $15.37/HR

AVERAGE DEPOT (DMBA) SALARY AS OF 1 OCT 94: $34,406/YEAR

AVERAGE ALC SALARY AS OF 1 OCT 94:	AVG BASIC	AVG BENEFIT	AVG TOTAL
DMBA	$34,406	$7,426	$41,832
SMBA	$39,353	$7,477	$46,830
O&M	$34,653	$7,552	$42,205
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FY94 DEPOT HOUR COST:	COST
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COST PER DPAH W/ MATERIAL	$36.86	34.7%
COST PER DPAH W/O MATERIAL	$28.74	56.0%

Depot Indicators report
look @ schedule line

schedule

quality

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS OKLAHOMA CITY AIR LOGISTICS CENTER (AFMC)
TINKER AIR FORCE BASE, OKLAHOMA

27 MAY 1995

MEMORANDUM FOR BASE CLOSURE COMMISSION
ATTENTION: MS ANN REESE
1700 N MOORE ST STE 1425
ARLINGTON VA 22209

FROM: OC-ALC/FMP
3001 Staff Drive Ste 1AG75A
Tinker AFB OK 73145-3056

SUBJECT: Information for BRAC Commission Staff (Your FAX, 14 May 95)

Attachment 1 contains the information requested to be prepared and forwarded to the BRAC Commission Staff prior to the 7 Jun 95 visit to Tinker AFB, OK. Please address any questions to Carol Cloe or Rita Smith, OC-ALC/FMPPM, DSN 339-5195, FAX DSN 339-2887.

JOE W. SIMMONS
Chief, Plans and Programs Division
Comptroller Directorate

Attachment:
Information Sheet

Document Separator

Answers To Questions Asked By The BRAC Staff

Item 1: FY95 Current Workload
Item 2: Projected Workload

	Carry-In	New Orders**	Available Workload	Production	Carry-Out
FY95	3,210,072	5,523,964	8,734,036	6,436,157	2,297,879
FY96	2,297,879	5,509,051	7,806,930	6,119,794	1,687,136
FY97	1,687,136	5,113,950	6,801,086	5,655,849	1,145,237
FY98	1,145,237	5,037,275	6,182,512	5,355,823	826,689
FY99	826,689	4,871,138	5,697,827	5,216,187	481,640
FY00*	481,640	4,871,138	5,352,778	5,026,259	326,519
FY01*	326,519	4,871,138	5,197,657	4,880,600	317,057

* Data Not Available. ROM Estimate.
** From JCSG-DM Table 3.1.b.

Item 3: Amount of Core Workload
Item 4: Percentage Of Core (Core As A Percent Of Workload)

	Production	New Orders**	Percent Workload
FY95	4,963,554	4,260,072	77.12%
FY96	4,719,575	4,248,571	77.12%
FY97	4,681,255	4,232,734	82.77%
FY98	4,502,406	4,234,617	84.07%
FY99	4,530,292	4,230,615	**86.85%**
FY00*	4,365,338	4,230,615	86.85%
FY01*	4,238,833	4,230,615	86.85%

* Data Not Available. ROM Estimate.
** From JCSG-DM Table 13.1a

Item 5: 2-Shift Capacity

	2-Shift** Capacity	2-Shift** Max Potential
FY95	12,722,965	18,244,483
FY96	12,722,967	18,408,566
FY97	12,722,967	18,790,753
FY98	12,722,944	18,523,453
FY99	12,722,944	18,523,453
FY00*	12,722,944	18,523,453
FY01*	12,722,944	18,523,453

* Data Not Available. ROM Estimate.
**Estimate Using 1.8 Multiplier

Answers To Questions Asked By The BRAC Staff

Item 6 & 11: Average ALC Salary (1994 Actual)
Item 10: Average Depot Salary

	Annual Wages	Annual Benefits*	Annual Total
ALC Civilians	$36,205.91	$12,780.69	$48,986.60
Depot Blue Collar	$36,827.62	$13,000.15	$49,827.77
Depot-Total	$37,692.56	$13,305.47	$50,998.03
*35.3% per AFI 64-503, Table 31.1			

Item 7: Critical Skills: N/A

Item 8: Lost Time Incidents per 200K Hours

	Base Rate*	1994 US OSHA Case Create Rate			
FY92	**1.22**	AFFDTC	2.91	OO-ALC	1.65
FY93	**1.38**	AFFTC	2.97	SA-ALC	2.54
FY94	**1.41**	AMARC	6.62	SM-ALC	2.47
* Please See Attached Letter For Explanation Of Rates		OC-ALC	3.88	WR-ALC	2.61

Item 9: Labor Hour Cost For WG-11 step 3

As Of 1 Oct 94	**$17.34**

Items 10 & 11: See Above

Item 12: Depot Hour Cost - 1994

	Labor	Material	Other	Total
Direct	$28.07	$26.33	$0.82	$55.22
Prod Overhead	$16.53	$2.75	$4.76	$24.04
G&A Expenses	$4.52	$0.14	$5.37	$10.03
Total	$49.12	$29.22	$10.95	**$89.29**

Item 13: Indirect Costs as a Percentage of Total Depot Hour Costs

	Tot Cost($M)	Indirect($M)	Percent
FY94	$487	$186	**38.2%**

DEPARTMENT OF THE AIR FORCE

HEADQUARTERS AIR FORCE MATERIEL COMMAND
WRIGHT-PATTERSON AIR FORCE BASE OHIO

APR 12 REC'D

APR 12 REC'D

28 Mar 94

MEMORANDUM FOR SEE DISTRIBUTION

FROM: HQ AFMC/SEO
4170 Hebble Creek Rd STE 1
Wright Patterson AFB OH 45433-5644

SUBJECT: Injury/Illness Data - ACTION MEMORANDUM

1. The attached action plan addresses injury, illness, and mishap cost data collection and use. The suggested integrated product team (IPT) is the result of a discussion at the last Ground Safety Corporate Board Meeting. Request you review the action plan and provide an IPT member, if desired (Please note: ASC, WR-ALC, OC-ALC and SM-ALC volunteered at the meeting to participate). You will also need to determine and list your needs and your customer's needs for injury/illness data prior to our first meeting.

2. Discuss this action plan with all concerned at your base. Based on some of the problems we identified as we developed the action plan, we have expanded the scope of the effort. If we are off track, let us know, but we do not believe that issues related to mishap costs can be fully addressed without working the related issues listed in the action plan.

3. Offices that volunteer should program for travel to at least two meetings. We expect the first one to be here at Wright-Patterson; the other to be determined. A third meeting may be required if indicated by customer feedback once the product is fielded.

4. So that we can get started as soon as possible, we need your input by 25 April 94. Call me at 787-1366, or email thomason@wpdis01.wpafb.af.mil.

KERRY L. THOMASON
Safety Manager
Office of Safety

Attachments
1. Action Plan
2. Distribution List

INJURY/ILLNESS DATA COLLECTION AND USE

Current Situation: Injury/illness data is collected by at least three organizations: SG, SE and DP. Some production organizations are also collecting information, depending upon local needs. AFR 127-4 attempts to standardize injury reporting, but has application at Class D and above only. AFR 127-4 also provides loopholes that further hinder effective collection and use. Compensation data is also available, but not in a timely manner -- usually over three months behind.

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2. No consistent manner by which Center can monitor/trend base level organizations.

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3. Attempts at "meaningful" metrics hampered by inconsistencies.

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Stakeholders: SE, SG, DPC at command and field level. Serviced organizations at base level.

Printed: 6 Feb 1995 at 1106 PST
Message 2 in mailbox /usr/spool/mail/smalcsed

DATED : 6 Feb 1995 at 1019 EST
SUBJECT : Projected OSHA Target Inspection for FY96
SENT BY : RUSSELL@WPGATE1.WPAFB.AF.MIL (John W. Russell)
SENT TO : waltersre@post6.laafb.af.mil, bailey@hap.arnold.af.mil, beedie@eglin.af.mil, campbeji@hillwpos.hill.af.mil, wrdis01!cbatchel, Ella==M.=Kirkham%ESC-SE%SPTG-IM@Tango-VS1.hanscom.af.mil, gsouders@po25.tinker.af.mil, harderj@tango-vs1.hanscom.af.mil, phillips%sc@mhs.elan.af.mil, jgobar@sesrv.senet.kelly.af.mil, lemmed@vanadium.brooks.af.mil, pcarlisl@agdis01.newark.af.mil, pconfort@sesrv.senet.kelly.af.mil, safety@amdis01.amarc.af.mil, scholl@agdis01.newark.af.mil, seg@commgate.kirtland.af.mil, smalcsed@smdis01.mcclellan.af.mil, tiptondg@p5.ams.wpafb.af.mil
STATUS : old, read

Form: Memo
Text: (31 lines follow)

Based on our calculations of FY94 L/T case create rates, it appears that we have two organizations (OC-ALC and AMARC) that exceeded the Gov't average L/T case create rate of 3.08 during FY94. Since AMARC is scheduled for an OSHA targeted inspection this year, it is unlikely that they will be targeted two consecutive years; therefore, Tinker should be our only base on the OSHA targeted list.

Following is a recap as to how each of our organizations look concerning the L/T case create picture:

AFDTC 2.91
AFFTC 2.97
AGMC 1.95
AMARC 3.62 *
ASC 1.68
ESC 0.85
HSC 1.53
OC-ALC 3.88 *
OO-ALC 1.65
SA-ALC 2.54
SM-ALC 2.47
SMC 1.16
WR-ALC 2.61
377ABW 2.71

As indicated, this is preliminary data and we will forward the actual OSHA Targeting list of AFMC bases as soon as we receive the information from OSHA. We hope this information is useful as you participate in new injury case create reduction and FECA Working Group activities.

Thanks, J. Russell
Use Proportional Font: true

Document Separator

9 June 1995

MEMORANDUM FOR RECORD

SUBJECT: Methodology Used to Create ALC and Depot Maintenance Cost Estimates

On 26 May 1995, the BRAC Commission staff requested updated/new COBRA runs for five ALC closures and five depot maintenance closures. With few exceptions, the ALC and depot maintenance estimates were created using the same methodologies used for the installation closure estimates. However, some additional information became available during this review process that was incorporated into the cost estimates. The following changes were made:

a. Costs Associated With DLA Personnel, Equipment, and Inventories. The DLA BRAC office provided updated information related to the number of personnel realigned if a depot installation closed as well as the cost to relocate their equipment and inventories (See Attachment 1). The manpower baseline and equipment transportation spreadsheets were updated to reflect this new information.

b. MILCON Costs for ALC and Depot Maintenance Closures. MILCON projects for the ALC closures were easily separated from non-ALC projects. However, separating MILCON projects supporting depot maintenance and material management activities was more difficult and the folowing methodology was used. MILCON projects required to support purely depot maintenance activities were included under both the ALC closure and depot maintenance closure options. If a MILCON project was shared between material management and depot maintenance activities but the primary function was in support of a material management function, it was included only in the material management closure options. For example, the Avionics Integrated Support Facilities (AISFs) were assumed to be material management functions and were not replicated or moved in the depot maintenance closure estimates. The ICBM storage requirements for the Ogden ALC closure were also handled in the same manner as material management projects included only upon closure of the full ALC but excluded in the depot maintenance closure scenario.

c. Dual Use Equipment Costs. Some equipment is used by the depot maintenance actitivities as well as tenant and material management activities. This dual-use equipment must be duplicated if these activities do not remain co-located. Additional information was obtained from HQ AFMC and incorporated as one-time unique costs to reflect these cases.

d. Equipment Repurchases vs. Relocation. Based on feedback from the BRAC staff, we changed procedures for calculating equipment transportation costs. We discontinued using the procedure for repurchasing versus relocating equipment based on a standard factor equal to 5% of the original acquisition cost. HQ AFMC identified a

smaller requirement based on a special data call and subsequent review. These new requirements were directly input into the spreadsheet in lieu of using the 5% cost factor.

e. Disposal Costs for Excess Equipment. Based on feedback from the BRAC staff, we changed procedures for calculating these costs. The previously used 1% cost factor for disposal of excess equipment in the equipment transportation spreadsheet was eliminated. As a result, the ALC and depot maintenance closure estimates do not reflect any costs for disposition of excess equipment. No proceeds from sales are included since no certified information was available.

Barry W Pitcher

BARRY W. PITCHER, Lt Col, USAF
BRAC Logistics Planner

Attachment
DLA Memorandum

Document Separator

DEPARTMENT OF THE AIR FORC
HEADQUARTERS AIR FORCE MATERIEL COMMAND
WRIGHT-PATTERSON AIR FORCE BASE OHIO

10 MAY 1995

MEMORANDUM FOR OC-ALC/CC
OO-ALC/CC
SA-ALC/CC
SM-ALC/CC
WR-ALC/CC

FROM: HQ AFMC/XP
4375 Chidlaw Road, Suite 6
Wright-Patterson AFB OH 45433-5006

SUBJECT: Base Closure Commission Regional Hearings

1. I just received the attached schedule of additional Base Closure Commission regional hearings.

2. As soon as we get the list of specific base visit dates, I'll forward a copy to you. When the commissioners visit your installation, please bear in mind that the official Air Force position remains depot downsizing through consolidation and realignment rather than closure. When responding to Commissioner questions or statements, don't say or do anything that is not in direct support of the official Air Force position.

EUGENE L. TATTINI
Brigadier General, USAF
Director of Plans

Attachment: Closure Commission Schedule

cc: HQ AFMC/LG

THE DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION
1700 NORTH MOORE STREET SUITE 1425
ARLINGTON, VA 22209
703-696-0504

ALAN J. DIXON, CHAIRMAN

COMMISSIONERS:
AL CORNELLA
REBECCA COX
GEN J. B. DAVIS, USAF (RET)
H. LEE KLING
RADM BENJAMIN F. MONTOYA, USN (RET)
MG JOSUE ROBLES, JR., USA (RET)
WENDI LOUISE STEELE

For Immediate Release

Contact: Wade Nelson
Chuck Pizer
John Earnhardt

BASE CLOSURE COMMISSION ANNOUNCES REGIONAL HEARING SCHEDULE

Five regional hearings to be held between May 25 and June 10

WASHINGTON, DC, May 15, 1995 -- The Defense Base Closure and Realignment Commission announces its schedule of 5 regional hearings to be held around the country. The purpose of these Regional Hearings is to receive testimony from communities affected by the Commission's May 10 recommendations to add 35 bases to the list of installations being considered for closure or realignment.

For oral testimony at regional hearings, each state will be given a block of time in which to make a presentations for all installations affected in that state. The overall time is determined by the Commission on the basis of the number of affected installations and the direct military and civilian personnel lost in each state.

Today's announcement includes the dates, times, and the cities the hearings will be held.

Each major base on this list will receive a visit by at least one Commissioner. Base visits provide an opportunity for Commissioners to view a base directly and to investigate first-hand many of the issues related to that base. Specific base visit dates will be announced soon.

There will be congressional hearings on June 12 and June 13 at which members of Congress will have an opportunity to present their views before the Commission. The Commission will hear from DoD officials regarding the Commission's adds list on June 14.

The list of hearings:

May 25	San Francisco, California
May 31	Chicago, Illinois
June 3	Boston, Massachusetts
June 9	Atlanta, Georgia
June 10	Dallas, Texas

more

Here is the list of which installations fall under which regional hearing:

May 25 (Location: San Francisco)
Regional hearing regarding the following installations:

Supervisor of Shipbuilding, Conversion, and Repair	San Francisco, CA
Engineering Field Activity, West	San Bruno, CA
McClellan AFB	Sacramento, CA
Oakland Army Base	Oakland, CA
Fleet and Industrial Supply Center	Oakland, CA
NAWC Point Mugu	Oxnard, CA
Naval Warfare Assessment Detachment	Corona, CA
Hill AFB	Ogden, UT
Public Works Center	GUAM

May 31 (Location: Chicago)
Regional hearing regarding the following installations:

Grand Forks AFB	Grand Forks, ND
Minneapolis-St. Paul IAP Air Reserve Station	Minneapolis, MN
Chicago O'Hare IAP Air Reserve Station	Chicago, IL
Youngstown-Warren MPT Air Reserve Station	Youngstown, OH
General Mitchell IAP Air Reserve Station	Milwaukee, WS

June 3 (Location: Boston)
Regional hearing regarding the following installations:

Tobyhanna Army Depot	Tobyhanna, PA
Portsmouth Naval Shipyard	Portsmouth, NH
Letterkenny Army Depot	Letterkenny, PA
Fort Holabird	Baltimore, MD
Niagara Falls IAP Air Reserve Station	Niagara, NY

June 9 (Location: Atlanta)
Regional hearing regarding the following installations:

Space and Strategic Defense Command	Huntsville, AL
NAS Atlanta	Atlanta, GA
Robins AFB	Warner-Robins, GA
Columbus AFB	Columbus, MS
Homestead AFB	Florida City, FL

June 10 (Location: Dallas)
Regional hearing regarding the following installations:

Vance AFB	Enid, OK
Tinker AFB	Oklahoma City, OK
Kelly AFB	San Antonio, TX
Carswell ARS	Fort Worth, TX
Laughlin AFB	Del Rio, TX

more

The schedule of each regional hearing follows:

SCHEDULE FOR REGIONAL HEARING
SAN FRANCISCO, CALIFORNIA

May 25, 1995

9:00-9:10 a.m.	Opening Remarks	
9:10-11:25 a.m.	California	135 minutes
11:25-11:30 a.m.	break	
11:30-12:15 p.m.	California	45 minutes
12:15-1:15 p.m.	break	
1:15-2:35 p.m.	California	80 minutes
2:35-2:40 p.m.	break	
2:40-3:14 p.m.	Public comment: California	
3:14-3:20 p.m.	break	
3:20-4:35 p.m.	Utah	75 minutes
4:35-4:40 p.m.	break	
4:40-5:05 p.m.	Guam	25 minutes
5:05-5:10 p.m.	break	
5:10-5:34 p.m.	Public comment: Utah, Guam	

SCHEDULE FOR REGIONAL HEARING
CHICAGO, ILLINOIS

May 31, 1995

9:00-9:10 a.m.	Opening remarks	
9:10-9:35 a.m.	Illinois	25 minutes
9:35-9:40 a.m.	break	
9:40-10:05 a.m.	Wisconsin	25 minutes
10:05-10:10 a.m.	break	
10:10-10:35 a.m.	Minnesota	25 minutes
10:35-10:40 a.m.	break	
10:40-11:05 a.m.	Ohio	25 minutes
11:05-11:10 a.m.	break	
11:10-11:50 a.m.	Public comment: Illinois, Wisconsin, Minnesota, Ohio	
11:50-12:00 p.m.	break	
12:00-1:00 p.m.	North Dakota	60 minutes
1:00-1:05 p.m.	break	
1:05-1:21 p.m.	Public comment: North Dakota	

more

SCHEDULE FOR REGIONAL HEARING
BOSTON, MASSACHUSETTS

June 3, 1995

8:30-8:40 a.m.	Opening remarks	
8:40-9:40 a.m.	Maine	60 minutes
9:40-9:45 a.m.	break	
9:45-10:05 a.m.	Public comment: Maine	
10:05-10:15 a.m.	break	
10:15-12:00 p.m.	Pennsylvania	105 minutes
12:00-12:05 p.m.	break	
12:05-12:30 p.m.	New York	25 minutes
12:30-12:35 p.m.	break	
12:35-1:09 p.m.	Public comment: Pennsylvania, New York	

SCHEDULE FOR REGIONAL HEARING
ATLANTA, GA

June 9, 1995

9:00-9:10 a.m.	Opening remarks	
9:10-10:50 a.m.	Georgia	100 minutes
10:50-10:55 a.m.	break	
10:55-11:20 a.m.	Alabama	25 minutes
11:20-11:25 a.m.	break	
11:25-12:00 p.m.	Public comment: Georgia, Alabama	
12:00-1:00 p.m.	break	
1:00-1:45 p.m.	Mississippi	45 minutes
1:45-1:50 p.m.	break	
1:50-2:15 p.m.	Florida	25 minutes
2:15-2:20 p.m.	break	
2:20-2:46 p.m.	Public comment: Mississippi, Florida	

SCHEDULE FOR REGIONAL HEARING
DALLAS, TX

June 10, 1995

9:00-9:10 a.m.	Opening remarks	
9:10-11:35 a.m.	Texas	145 minutes
11:35-11:40 a.m.	break	
11:40-12:04 p.m.	Public comment: Texas	
12:04-1:00 p.m.	break	
1:00-3:00 p.m.	Oklahoma	120 minutes
3:00-3:05 p.m.	break	
3:05-3:25 p.m.	Public comment: Oklahoma	

SUPPLEMENTAL INFORMATION: Please call the Commission to confirm dates, times, and locations prior to each event. Individuals needing special assistance should contact the Commission in advance of each event to facilitate their requirements.

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, DC

22 May 1995

MEMORANDUM FOR AF/RT

FROM: AF/LGM

SUBJECT: BRAC Commission Visits

Per our discussion, attached is a draft paper on potential depot issues that could be discussed with the BRAC Commissioners during their visits to the ALCs. We shared this with AFMC/XP and incorporated their recommendations. The paper is meant to be helpful to key AFMC officials in dealing with the BRAC Commission. While it still needs some additional information added, I believe it needs to be transmitted now while it is still useful.

Based on my discussion with AFMC/XP, I faxed a copy directly to AFMC/CV, AFMC/LG/XP, and the ALC commanders. I have offered to provide additional information or a briefing to AFMC/CV if desired.

RONALD L. ORR
Associate Director
Directorate of Maintenance

Attachment:
Issue Paper, w/3 Atch

cc:
AFMC/CV
AFMC/XP/LG
OC- ALC/CC
OO-ALC/CC
SA-ALC/CC
SM-ALC/CC
WR-ALC/CC

Potential Issues To Address
To BRAC Commission
Reinforcing AF Depot Downsizing Decision

Overview: The AF decision to downsize the five ALCs was based on the high projected depot closure costs which jeopardized the future AF budget. The BRAC Commission and their staff have two major areas of concern with the AF analysis supporting this decision: the high calculated one-time cost to close a depot installation and the relatively low savings (compared to other Services) considered by the AF in reaching this decision. This paper proposes an approach to providing information to visiting BRAC Commission / Staff members providing examples that will reinforce the AF decision. This paper also provides background information about analysis procedures the AF used in reaching the downsizing decision.

RECOMMENDED INFORMATION TO CONVEY TO BRAC COMMISSION / STAFF

High Cost to Close:

- All tenants must be relocated to new sites to completely close any depot installation.
  - Outline the tenant activities and the types of facilities required for their support.
    - Depot installation tenant organizations were costed to move 1000 miles to "base X" during level playing field analysis of the closure of all depot installations.
    - Kelly and McClellan AFB tenants (above 100 authorizations) were costed for relocation to specific sites as indicated in attachment 1 during later focused closure analysis.
- All ALC management activities must be relocated to completely close any depot installation.
  - Outline the management activities and the types of facilities required for their support.
    - Management activities were costed to relocate (consistent with the assumptions of the AFMC 21 study) as indicated in the charts at attachment 2, which were usually based on the most logical destination for the associated depot maintenance workload.
- All depot maintenance workloads must be transferred to continue supporting fielded weapon systems.
  - Depot maintenance workloads were costed to move as indicated in the charts at attachment 2 consistent with the assumptions of the AFMC 21 study.
- Under any depot closure scenario, the majority of depot maintenance workloads would transfer from the established, consolidated AF TRC to a location with no current capability (personnel or equipment) to support the workload.
  - Majority of peculiar support equipment must transfer to provide capability at gaining site.
    - All unique equipment items required to support the workload must be transferred.
    - Only minimal duplicate equipment items no longer needed to support a lower force structure level can be eliminated.
  - Much equipment must be transferred even when similar workloads are consolidated (i.e. engines between OC and SA-ALCs).
    - All peculiar tools, fixtures and other equipment unique to overhaul and test processes for each engine type must be transferred to establish capability at the gaining site.
- Many workloads would be transferred from modern, state-of-the-art facilities at the current TRC into less than optimized facilities.
  - This approach minimizes even higher one-time costs for MILCONs otherwise required to achieve comparable infrastructure.

- Could result in some degradation in production efficiency at the gaining sites.
- Some examples include:
  - Landing gear components repaired and tested at OO-ALC in their modern, centralized AF TRC facility (designed specifically to support landing gear overhaul) would be transferred to another depot into existing general overhaul facilities.
    - Requires substantial shop floor rearrangement costs at the gaining depot and interruption in current production at both sites.
  - Hydraulic components repaired and tested at SM-ALC in the modern, centralized AF TRC facility (designed specifically to support hydraulics overhaul) would be transferred to another depot into existing general overhaul facilities.
    - Requires substantial shop floor rearrangement costs at the gaining depot and interruption in current production at both sites.
  - APUs from SA which would be transferred from a new, , dedicated facility (designed specifically to support APU overhaul) would be transferred to another depot into existing general overhaul facilities.
    - Requires substantial shop floor rearrangement costs at the gaining depot and interruption in current production at both sites.
  - Fuel components repaired and tested at either OC or SA-ALC in new, facilities (designed specifically to support fuel components) would be transferred at the other depot into existing facilities which are currently identified as obsolete and programmed for elimination.
    - Requires substantial shop floor rearrangement costs at the gaining depot and interruption in current production at both sites.
    - Neither new AF fuel component facility at OC or SA-ALC has the capacity to house all the equipment required to support the combined OC and SA-ALC workloads.
- Attachment 3 provides some additional examples of the many unique depot maintenance equipment and facility capabilities that would be costly to reestablish at a new location.

Low Savings:

- Illustrate the manpower authorization logic outlined below to the Commissioner or staff members by applying them to specific examples from the visited ALC.
  - Presentations will be most effective if they are demonstrated with examples of TRCs fully consolidated at that ALC.
- Address the DOD Bottom Up Review which certified the need to continue operating all AF weapon systems (except the F-111) although many at lower volumes.
  - There is little potential for substantial personnel and infrastructure savings without eliminating full weapon systems and all their supporting maintenance and repair capabilities.

BACKGROUND:

The following information describes the general assumptions and methodology used by the AF in the analysis of depot installations and COBRA costing of closure options and the downsizing option.

High Cost to Close:

- High closure costs are driven by personnel, MILCON, equipment transportation, production transition, and other miscellaneous closure costs.

- Personnel costs:
  - 100% of all tenant organization authorizations and associated BOS were moved to new receiver sites.
  - 94% of all ALC authorizations and associated BOS transferred to new depot sites.
  - 70% of the personnel filling transferring authorizations incurred moving costs, based on standard factors provided by DoD.
  - 50% of the personnel whose jobs were eliminated incurred moving costs to transfer under the civilian Priority Placement System.
    - No moving costs calculated by COBRA for moves under 50 miles.
  - Remaining vacant authorizations were costed as new hires.
  - Other substantial personnel costs were included.
    - Civilian RIF, early retirement, new hire, unemployment, and military moving costs calculated by the COBRA model using standardized DoD cost factors.

- MILCON costs:
  - Construct and alter existing facilities to support transferring depot maintenance and management workloads as required by specific transferring workloads.
    - AFMC 21 analysis provided the most rational approach to transfer workloads at the lowest cost and least impact to readiness.
  - Modify infrastructure such as utilities and fencing to support any planned cantonments.

- Cost to move required equipment and inventory:
  - Used same methodology as in the AFMC 21 study (ie. Transportation spreadsheet) with updated cost factors and certified data from HQ AFMC.
    - 24% of equipment declared excess and surplussed in place (some resulting costs for these actions)
    - 5% of equipment repurchased at gaining site to replace equipment that was either uneconomical to move or that was final used by workloads that were transferred to different ALCs
    - Material inventories attrited to 30% of current levels prior to transfer to receiver site

- Production transition costs:
  - Previously identified as Interim Production Support in the AFMC 21 study and calculated using the same methodology.
  - Estimates the cost to transition depot maintenance workloads from the losing site receiver sites.

- Other miscellaneous closure costs:
  - Some examples include:
    - Homeowner's Assistance Program
    - Shop floor rearrangement costs
    - Civilian terminal leave
    - Air Force Base Conversion Agency

Low Savings:

- Low savings from closing any depot installation are driven by several factors:
  - Assumed relatively small personnel eliminations possible since all workloads had to be relocated.

— Due to the TRC structure, most depot maintenance workloads have little in common with other workloads at gaining sites minimizing consolidation efficiency.

- AF closure analysis considered personnel eliminations as the primary source of savings.
  - 6% ALC authorizations eliminated as efficiency from consolidation (94% transferred)
    - 8% associated BOS authorizations eliminated
  - Remaining installation BOS positions evaluated and eliminated as savings as appropriate
    - Medical, General Defense Intelligence Program (GDIP) authorizations reserved by regulation or policy
    - Some BOS positions required to transfer to gaining sites to provide increased base personnel required to support authorizations associated with transferring workloads
  - No eliminations possible from transferring other tenant activities on the installation
    - These workloads are not assumed to be reduced or consolidated due to transfer
    - All current authorizations assumed to be required at gaining locations
- AF downsizing analysis projected 15% ALC personnel eliminations.
  - Greater personnel savings potential assumed since planned workload transfers focused on fully consolidating related work into existing TRCs and establishing new TRCs for other similar workloads and processes not previously consolidated.

High Cost to Close: (SA-ALC example)

- High closure costs ($582 M) are driven by personnel, MILCON, equipment transportation, production transition, and other miscellaneous closure costs

  - Personnel costs ($214 M)
    - Civilian move costs ($174 M)
    - Other personnel costs ($40 M)
      - Civilian RIF, early retirement, new hire, unemployment, and military moving costs calculated by the COBRA model using standardized DoD cost factors

  - MILCON costs ($105 M)
    - Construct and alter existing facilities at Tinker AFB to support C-5 overhaul ($52 M) and management
    - Add/alter other facilities to support transferring depot maintenance and management workloads such as engines, APUs, TMDE, C-17 program, etc.
    - Modify infrastructure such as utilities and fencing to support cantonment of AFRES C-5s, ANG F-16s, and Air Intelligence Agency at Lackland AFB

  - Cost to move equipment and inventory ($98 M)

  - Production transition costs ($59 M)

  - Other miscellaneous closure costs ($106 M)

(Note: Other ALC examples to follow)

Kelly Tenant Organizations

Organization	Pers	New Location
■ 748 Military Intelligence Branch	3000	Retain as Lackland
■ Defense Logistics Agency	937	Disband/Disperse
■ Defense Commissary Agency	482	Relocate DECA HQ Portion Only
■ Defense Accounting Office	179	Disband/Disperse
■ AFRES		
■ 433 Airlift Wing (14 C-5s)	3009	Lackland
■ Aeromedical Unit	216	Lackland
■ Texas ANG (15 F-16s)	1213	Lackland
■ 1827 Electronics Inst Sqdn	309	Lackland

(Organizations with over 100 Manpower Authorizations)

McClellan Tenant Organizations

Organization	Pers	New Location
■ Defense Commissary Agency	169	Disband/Disperse
■ DFAS	139	Disband/Disperse
■ Defense Logistics Agency	603	Disband/Disperse
■ US Coast Guard	190	Moffett Field?
■ AFRES		
■ HQ 4th Air Force	111	March AFB
■ 940 Air Refueling Wing (9 KC-135Es)	884	Beale (BRAC 93)
■ Detachment 42	142	Tinker
■ Technical Operations	388	Offutt
■ 1849 Electronics Sqdn	311	Travis

(Organizations with over 100 Manpower Authorizations)

(atch 1)

Level Playing Field Assumptions

- Assumptions Approved by BCEG
- Depot Moves (AFMC 21 Baseline)
- Excess Capacity Maximized Prior to Costing New Facilities
- Programmed Air Force Force Structure Drawdowns Sourced From Level Playing Field Base
- Serve As a Basis for Level Playing Field COBRA
- Results to Be Briefed to BCEG

AFMC 21 Assumptions

- Consistent with BRAC criteria/process
  - Certified data
- Consider all installations
  - Equally, Individually, In Pairs
- Tenants moved to "Base X" 1000 miles distant
- Baselines
  - FY 93 Workload Review Projections for FY 96
  - FY 93 Manpower Projections for FY01

(atch 2)

AFMC Consolidation Philosophy

- Consolidate to most comparable commodity
  - Minimize disruption in operations support
  - Minimize costs
- Dual sourced workloads
  - Consolidated to largest remaining source
- Single sourced workloads
  - Moved to closest related commodity group
- Depot Maintenance separated from system management
  - Consolidated to remaining center

Tinker AFB

- Assumptions
  - Complete Closure
- Depot Moves
  - B-1 - Robins
  - B-2 - McClellan
  - B-52 - Kelly
  - KC-135 - Kelly
  - E-3 - McClellan
  - Engine Inst. - McClellan
  - Pneumatics - McClellan
  - Oxygen Systems - Hill

Robins AFB

- Assumptions
  - Complete Closure
- Depot Moves
  - F-15 - McClellan
  - C-141 - Kelly
  - J-Stars - Tinker
  - C-130 - Hill (includes SOF mgt)
  - Avionics/EW - McClellan
  - Vehicle Mgt - McClellan
  - Gyros - Hill

Kelly AFB

- Assumptions
  - Complete closure
  - AFIC remains attached to Lackland
- Depot Moves
  - C-17 - Robins
  - C-5 - Tinker
  - Engines - Tinker
  - Support Equip / Automatic Test Equip - Hill
  - Special Weapons - Hill
  - Proven Aircraft Mgt - Tinker
  - Fuels Mgt - Tinker

McClellan AFB

- Assumptions
  - Complete closure
  - Nuclear facility shut down - nuclear material stored in place
- Depot Moves
  - F-111 - Hill
  - A-10 - Hill
  - KC-135 - Tinker
  - F-15 - Robins
  - C^3I - Hill
  - Electrical Components and Electronic SE - Hill

McClellan AFB
(Continued)

- Depot Moves
  - Electo/Mechanical - Hill
  - Hydraulics - Tinker
  - Flight Control Instruments - Tinker
  - F-117 Mgt - Tinker
  - F-22 Mgt - Robins
  - Det 42 Mgt - Tinker

Hill AFB

- Assumptions
  - Complete Closure
- Depot Moves
  - F-16 - McClellan
  - C-130 - Robins
  - ICBM - Tinker
    - ✓ Issues: Storage facilities
      Integration Spt Facility (Silos) START Implications
  - Landing Gear/Wheels/Brakes - Tinker
  - ✓ Munitions - Kelly/Kirkland
    - Issue: Wartime STAMP/STRAPP limitations from single POE

✓ Differs from AFMC 21 Study

Hill AFB
(Continued)

- DEPOT Moves
  - Armament - Robins
  - Photo Recon - Robins
  - Trainers/Simulators - Kelly
  - F-4 Mgt - Kelly
  - Maverick Missile Mgt - Robins

Specialized ALC Facilities and Equipment
Requiring Unusual Facilitization / Costs to Transfer

OC-ALC:

- B-1 Centralized Aircraft Support System (CASS) electric, hyd and air cond support
- Large Aircraft Robotic Paint Stripping (LARPS) for B-1, C-135, E-3, and B-52
- Blade and Vane Center - (similar capability at NADEP-CP)
- Air Accessories Component test facility and "Super Cell"
- E-3 "Texas Tower"

OO-ALC:

- Strategic Missile maintenance and storage facilities
  - Include especially motor dissection, nozzle cutting, Computed Tomography, high powered X-Ray, and ground handling vehicle overhaul facility
- Strategic Missile Integration Center (the two instrumented silos)
- Air Launched Cruise Missile overhaul facilities
  - Include ACM imaging radar cross section (IRCS) test facility
- Landing Gear overhaul facility
- Laser Automated Decoating System (LADS)
- Aircraft Robotics Bead Blast
- Imaging System and Optical System test facility (three-story collimator)
- F-16 EPU overhaul and test facilities (hydrazine system)

SA-ALC:

- C-5 overhaul facilities
  - Include big hanger (bldg 375), and strip and paint facilities
- Rubber products manufacturing facility
- F100 Cryogenic Spin test facility

SM-ALC:

- Composite Demonstration Center (Blue Room)
- Injection molding (similar capability at OO-ALC)
- F-111 Cold Proof (only if F-111 support requirement continues)

WR-ALC:

- Lantirn overhaul and laser test facility
- Gyro overhaul and test facility
- F-15 Robotic paint stripping facility
- Fluid Cell Press

(atch 3)

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Air Force Minutes
Relating to ALCs

AFB	Relevant Dates	Depots	Same Dates
Hill	10-May	8-Apr	19-Jul
	19-Jul	30-Jun	1,7,8,9,12,13,14-September
	8,9,12,13,14-September	19,21-July	17,18-October
	17-Oct	10,15,16,23,29-August	9,14,15,29-November
	14-Nov	1,6,7,8,9,12,13,14,15-September	1,21-December
		17,18,19-October	
Kelly	7,12,13-September	9,14,15,29-November	
	17,18-October	1,21,29-December	
	14,16,29-November		
	1,21-December		
McClellan	19-Jul		
	12,13,14-September		
	17-Oct		
	1,2,3,4,9,14,15,16,29-November		
	1,21-December		
Robins	18-Aug		
	13-Sep		
	14,21-November		
Tinker	1,9,12,13,14-September		
	9,14-November		

From Charlie

Steering group - minutes

Air force assumed total possible

IG report on 31 March X-Service
call IG office in on 6 areas

Steering group report can be briefed on new

7 reports to be issued in next week

self initiated

GAO follow steering group → 10 days to 2 weeks

never took on
Miss Hull sign

William Price -

Steve Witlock -
⇒ Assistant Inspector general for Inspections

Sample of projects - X-Service

Witlock ~~will call~~ - medical, personnal, property
un intended consequences
of prior Commission rounds

will be getting soon

Bob Leberman, Stuesmith
Assistant-IG -

7 reports

604-9312
Wayne Milligan

will get copies

Program Director for BRAC

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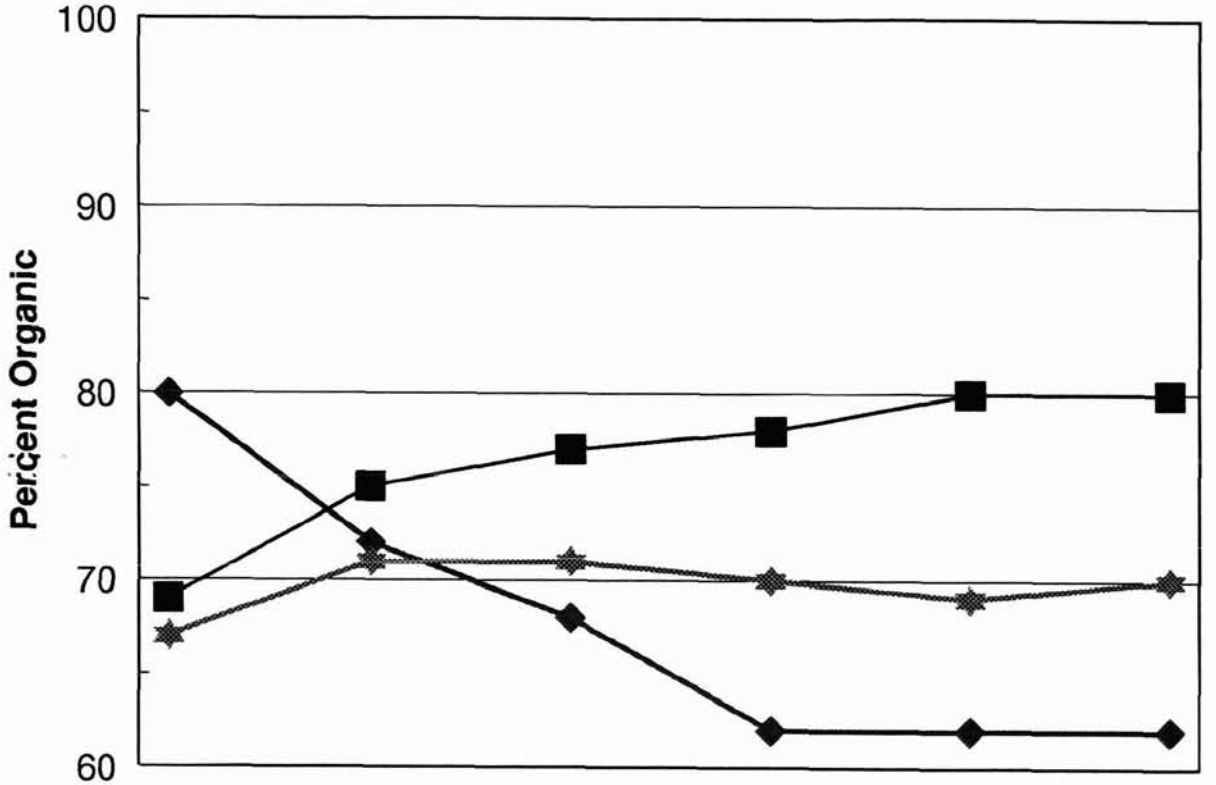
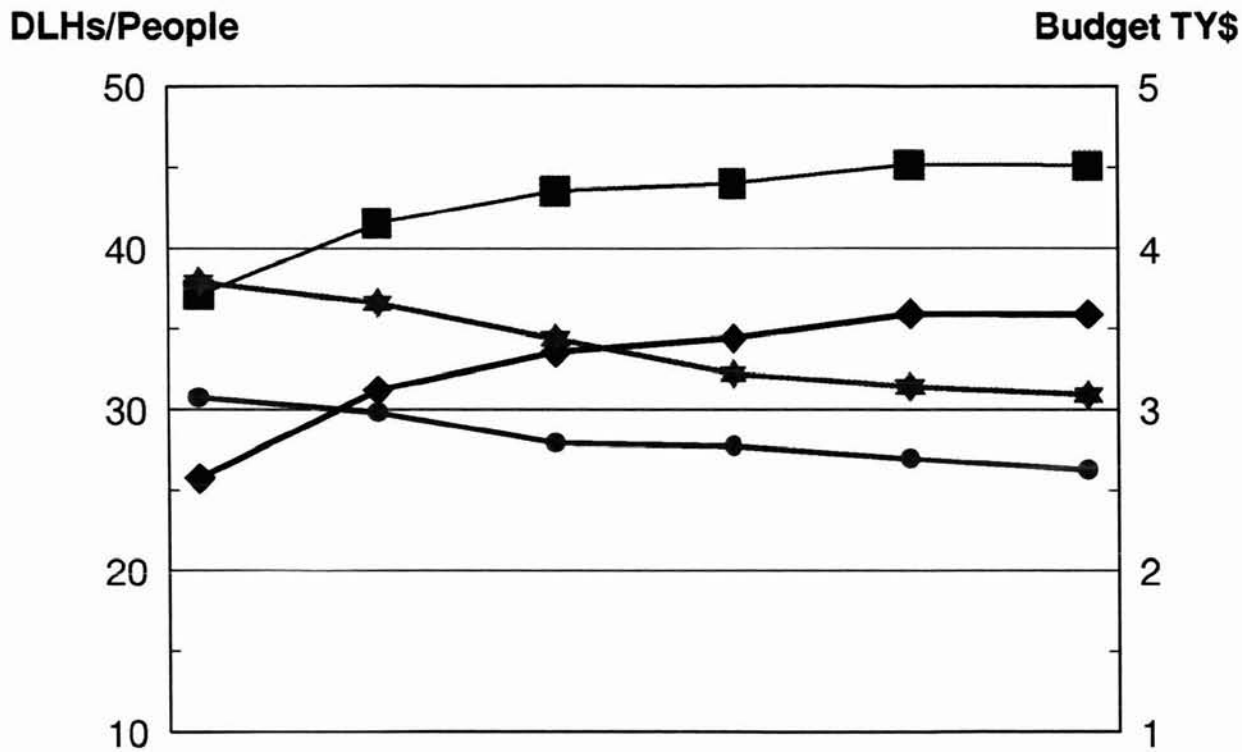
DoD
Organic Depot Maintenance Program



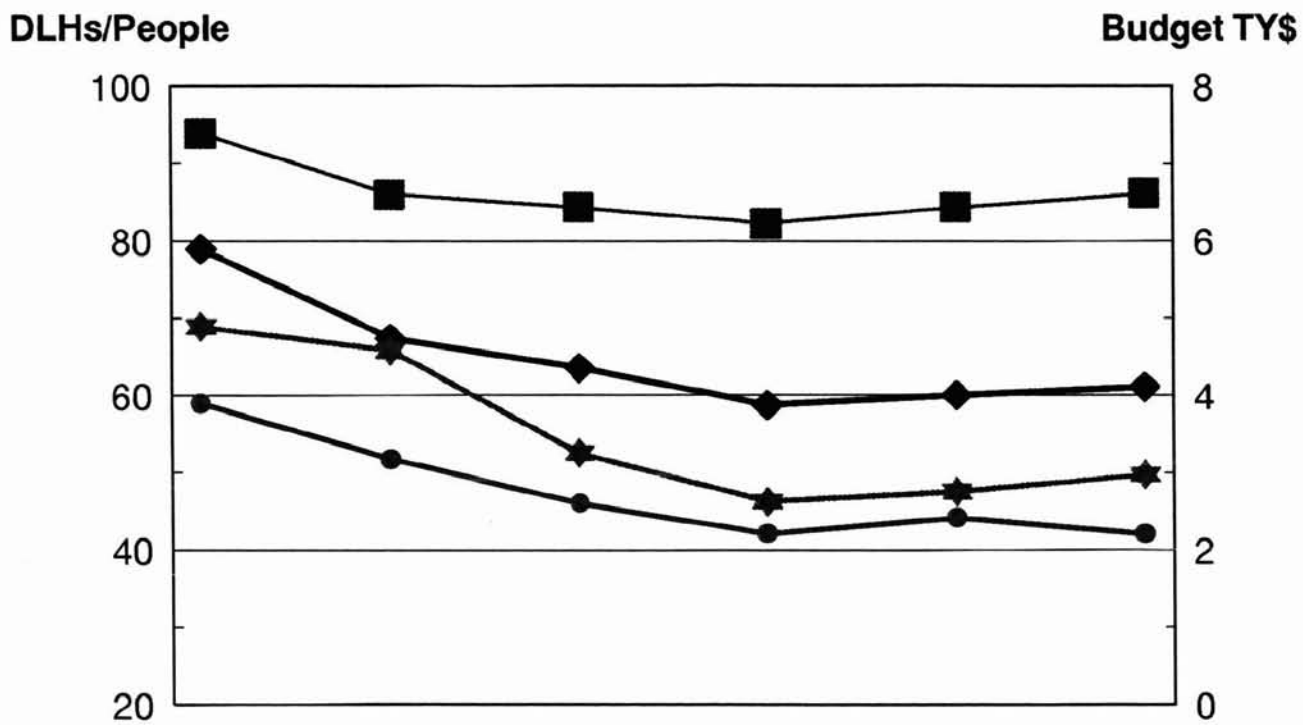
	FY94	FY95	FY96	FY97	FY98	FY99
Air Force	69	75	77	78	80	80
Navy	80	72	68	62	62	62
Army	67	71	71	70	69	70

Air Force
Organic Depot Maintenance Program



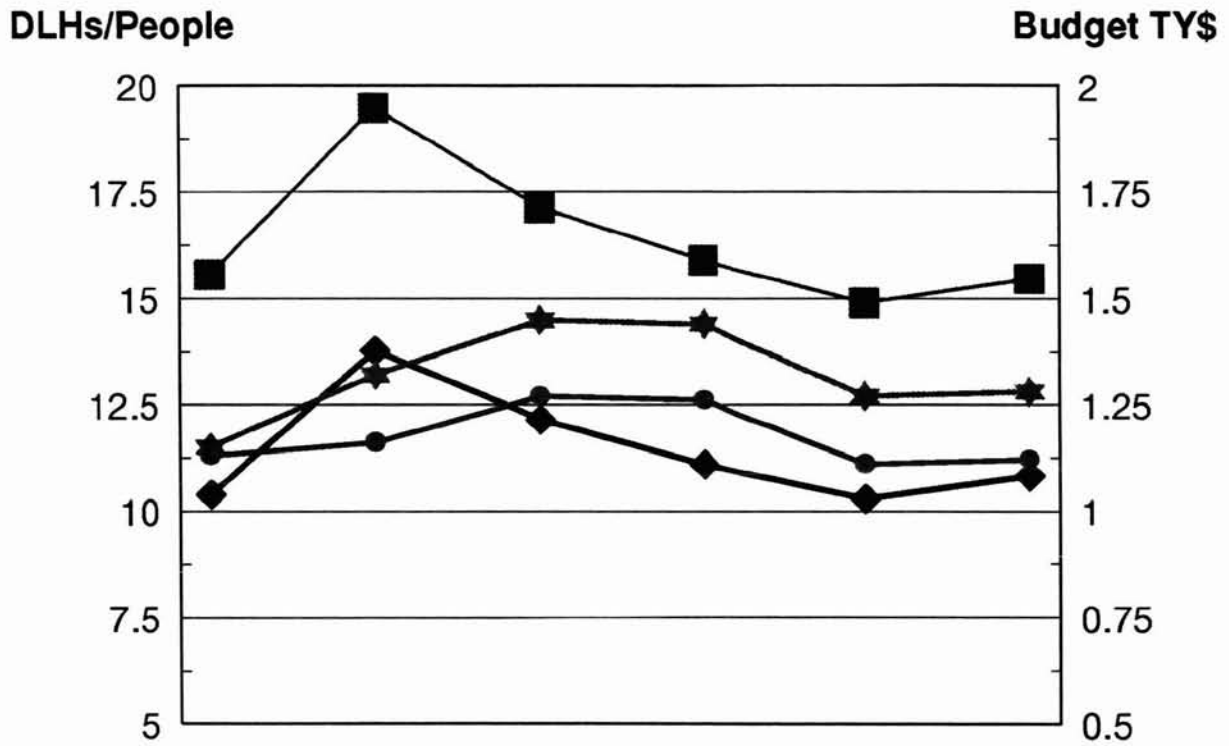
	FY94	FY95	FY96	FY97	FY98	FY99
Total Budget ($B) ■	3.711	4.154	4.353	4.398	4.515	4.511
Organic Budget ($B) ◆	2.573	3.118	3.354	3.442	3.594	3.590
DLHs(M) ✱	37.900	36.600	34.400	32.200	31.400	30.900
People(000) ●	30.700	29.800	27.900	27.700	26.900	26.200

Navy
Organic Depot Maintenance Program



	FY94	FY95	FY96	FY97	FY98	FY99
Total Budget ($B) ■	7.388	6.595	6.428	6.224	6.427	6.609
Organic Budget ($B) ◆	5.895	4.734	4.359	3.872	3.999	4.106
DLHs(M) ✱	68.900	65.800	52.500	46.200	47.500	49.700
People(000) ●	58.900	51.700	46.000	42.000	44.100	42.000

Army
Organic Depot Maintenance Program



	FY94	FY95	FY96	FY97	FY98	FY99
Total Budget ($B) ■	1.555	1.947	1.713	1.590	1.490	1.546
Organic Budget ($B) ◆	1.039	1.377	1.215	1.109	1.028	1.081
DLHs(M) ✱	11.500	13.200	14.500	14.400	12.700	12.800
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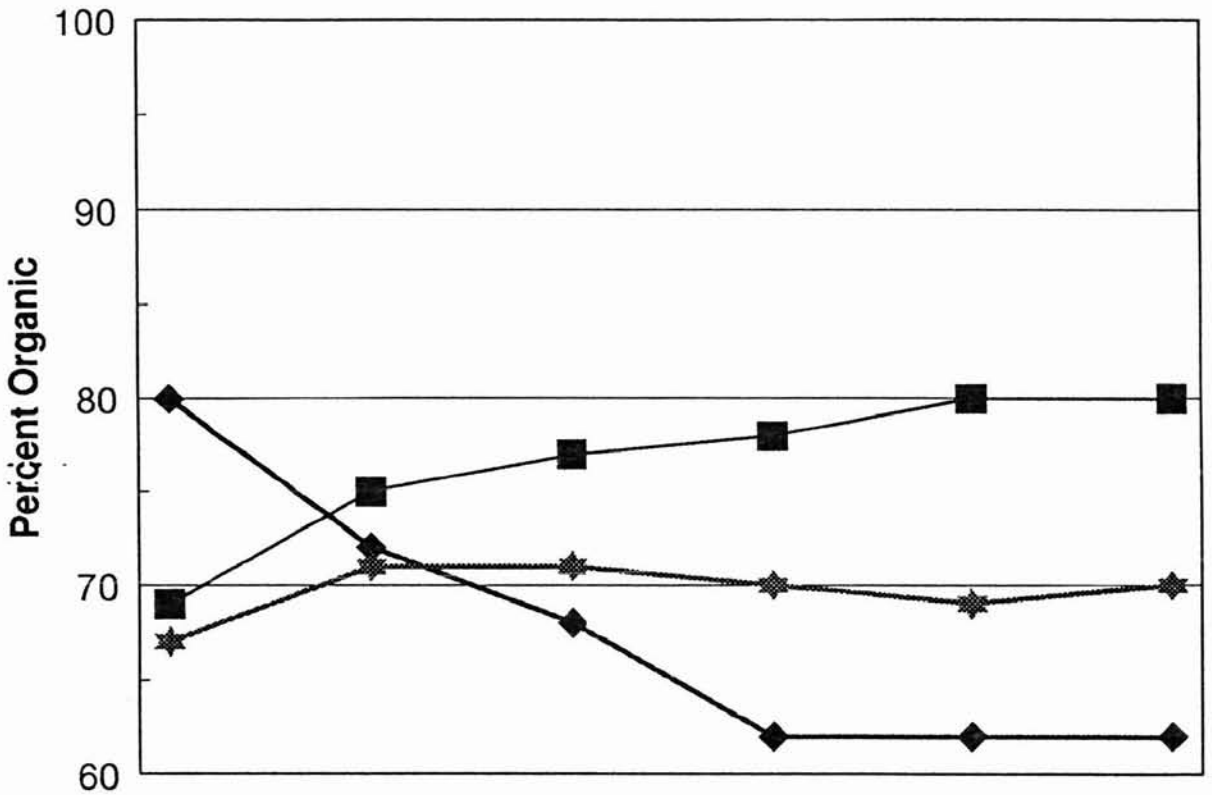

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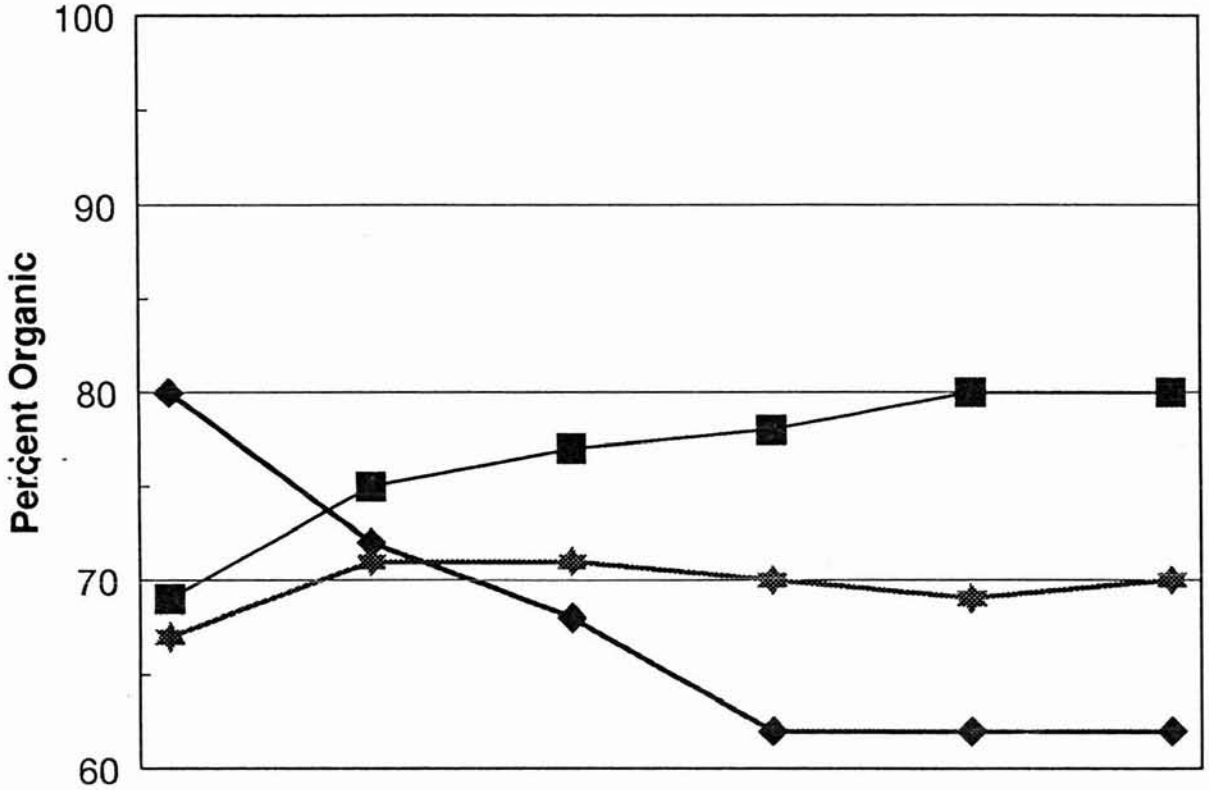

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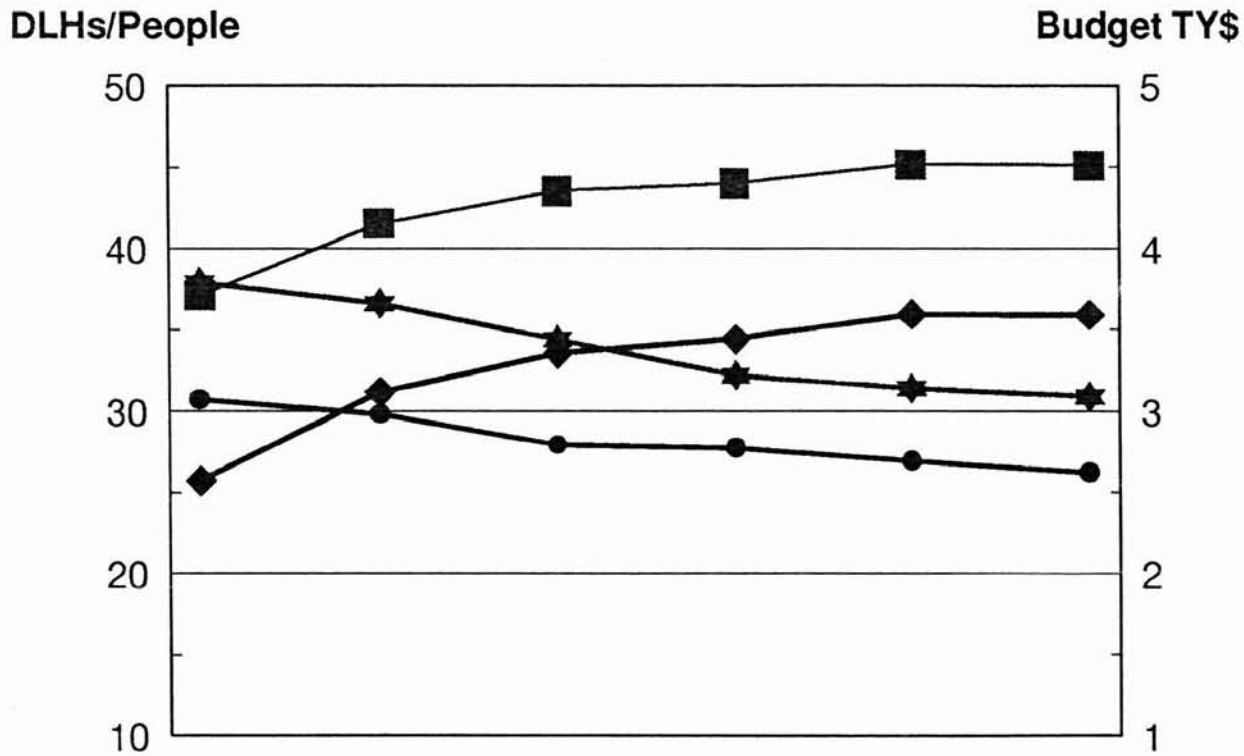

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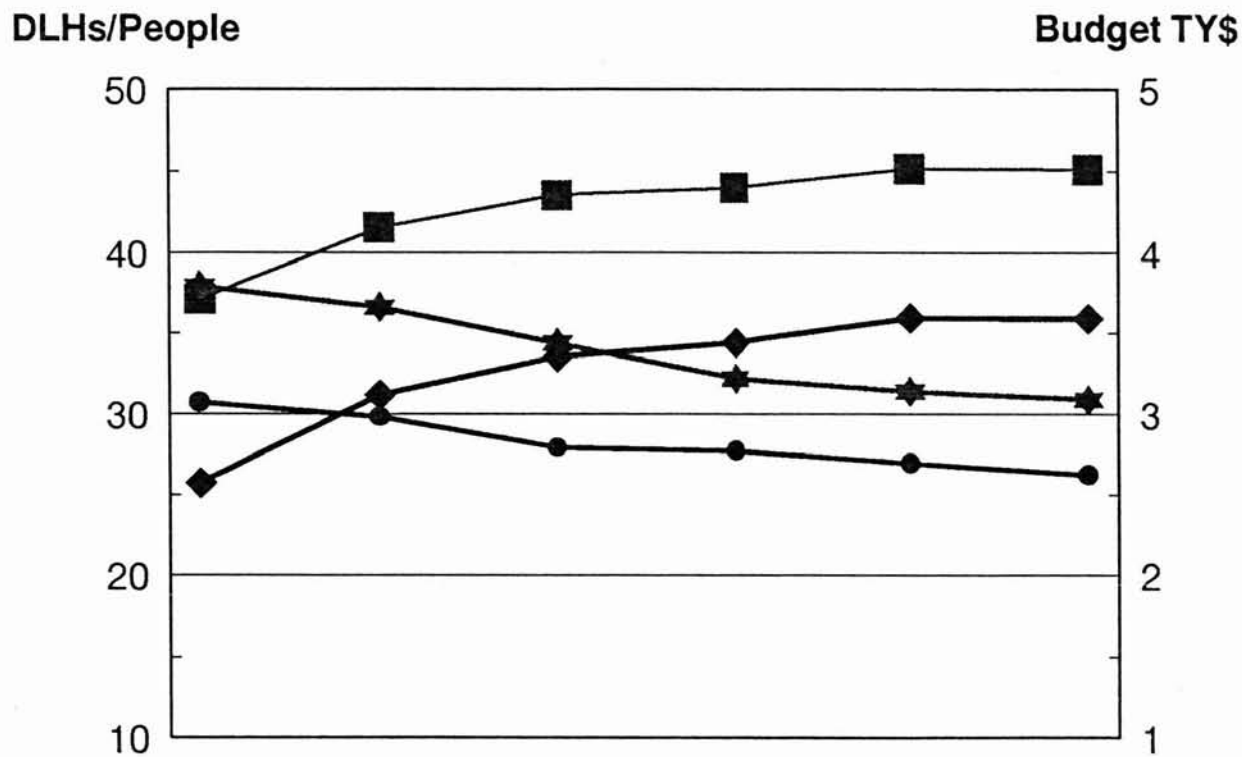

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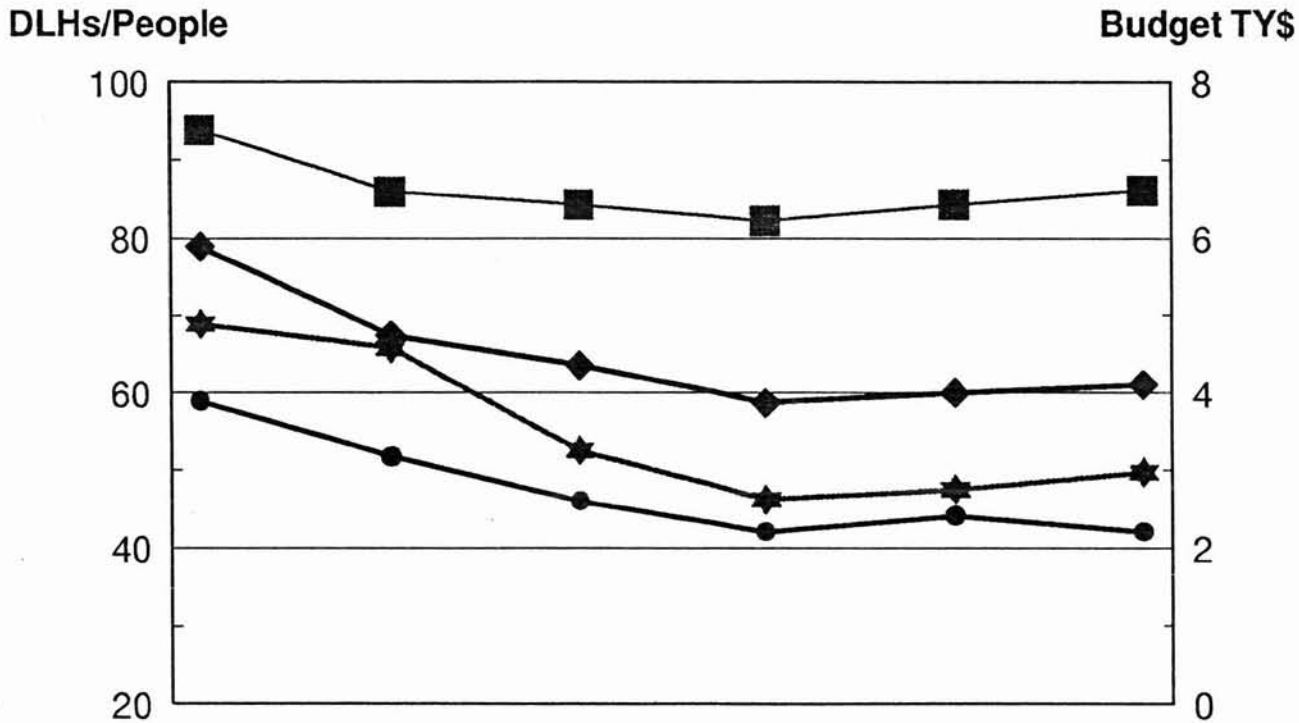

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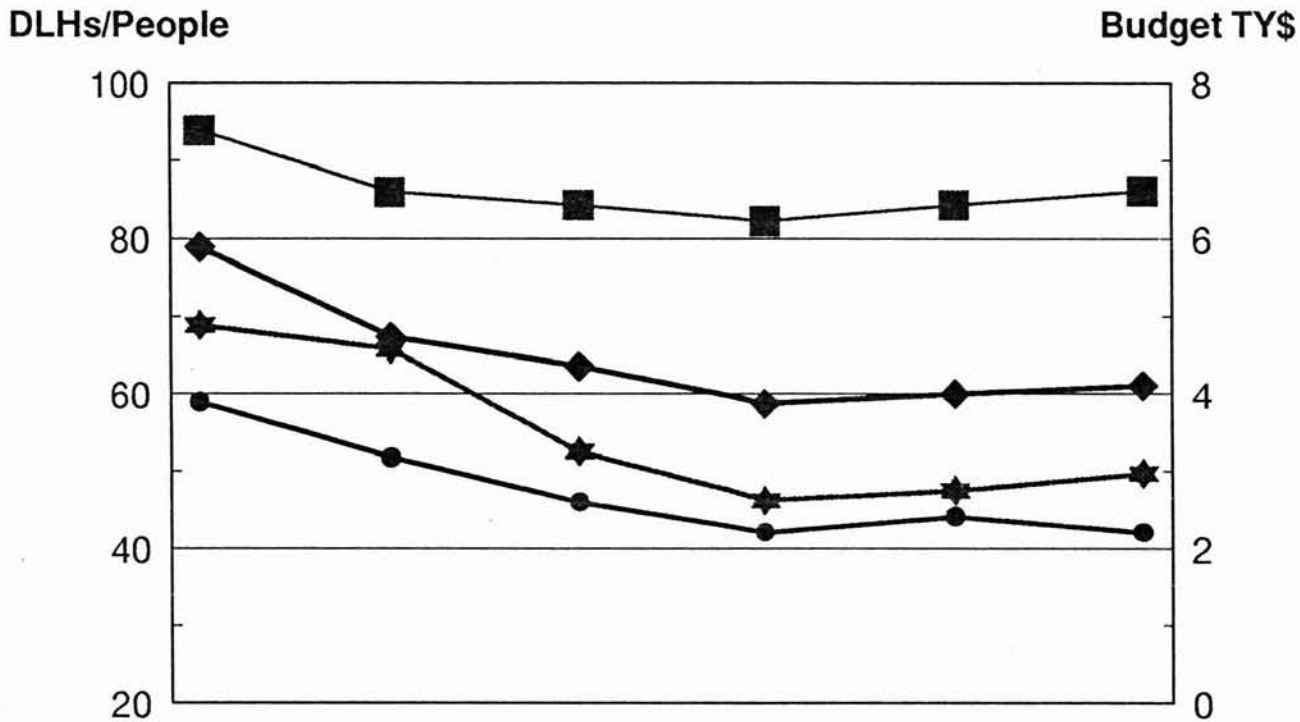

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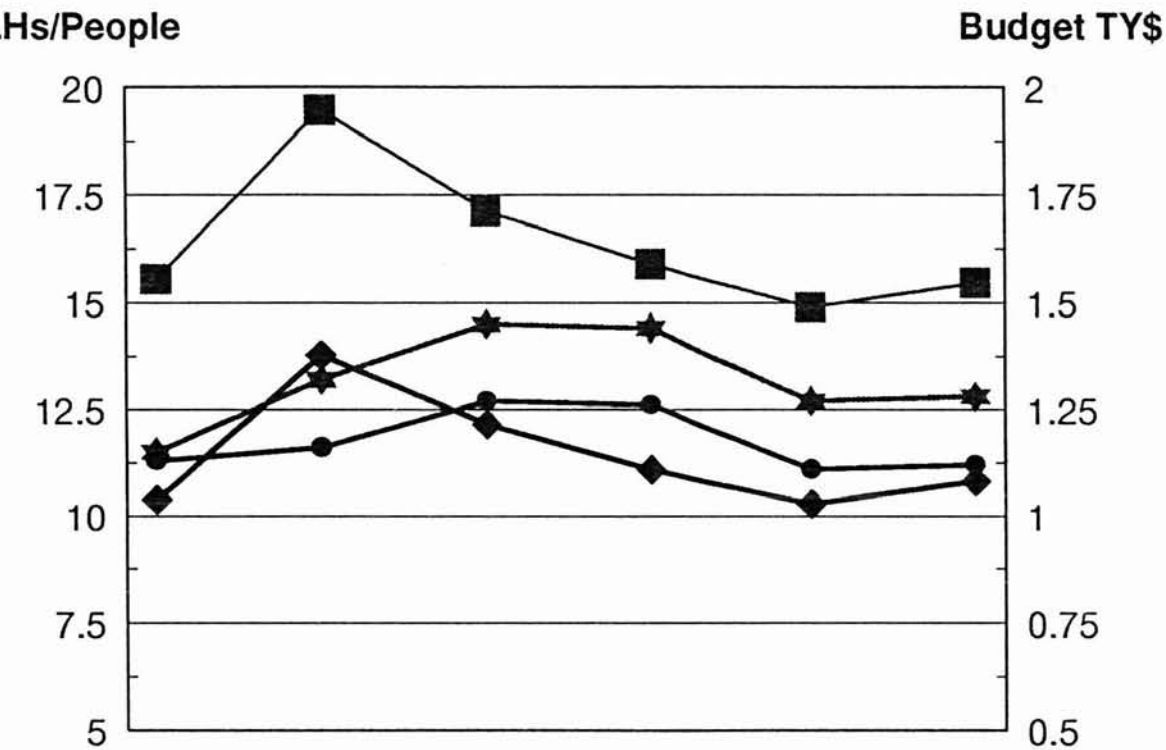

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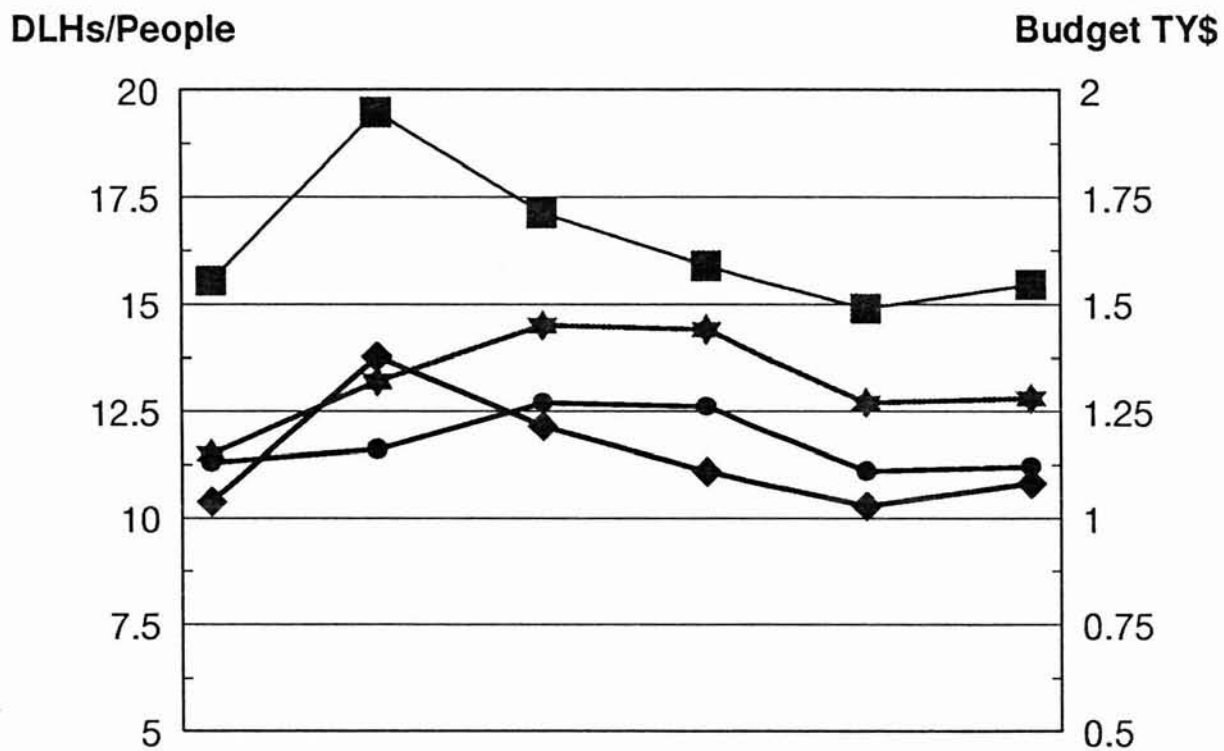

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DEPARTMENT OF THE AIR FORCE

PRESENTATION TO
THE DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION

17 JUNE 1993

SUBJECT: AIR FORCE TESTIMONY IN SUPPORT OF DEPARTMENT OF DEFENSE BASE CLOSURE RECOMMENDATIONS

STATEMENT OF: MR. JAMES F. BOATRIGHT
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE
(INSTALLATIONS)

NOT FOR PUBLICATION UNTIL RELEASED
BY THE DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION

March. It will train and exercise with the Marines to assure deployment capability is ready at all times.

We are aware of Commission studies on relocating Marine Corps helicopter units, with over 3700 active duty personnel, on to March AFB. The Air Force plans to close down the March AFB hospital, commissary, BX, and other functions associated with supporting active duty personnel once the base converts to Reserve status. Should the Marine units relocate to March, these support functions would be required. The Marine unit would be the largest active duty organization on base, and should become the host service. This would mean transferring March AFB from the Department of the Air Force to the Department of the Navy. The Air Reserve Component units would remain at March in a cantonment area.

AIR FORCE DEPOT STRUCTURE

A number of questions have arisen about the Air Force depot structure. The Secretary of Defense did not adopt the Air Force recommendation to close McClellan AFB, California. He did approve the closure of Newark Air Force Base, Ohio. We expect to privatize the majority of its operations and relocate the remainder to other locations. The Commission elected to place four of the five major depot bases, Kelly AFB, Texas; Robins AFB, Georgia; Tinker AFB, Oklahoma, and McClellan on the list of bases for study (Only the tactical missile workload at Hill Air Force Base, Utah was included on the study list).

As stated in my June 14, 1993 letter, the Air Force disagrees with 1987 baseline used by the Commission's staff to compute excess depot capacity. Using this baseline significantly overestimates excess capacity, since it does not account for personnel and facility reductions accomplished between 1987 and 1991. We agree with the Secretary of Defense that none of our major depots should be selected for closure at this time.

The Air Force had to consider its depots primarily in the context of Air Force requirements, and to rate them only in comparison with each other. The major obstacle to closing depots is cost to close, Criterion IV. Four of our five major depots (Air Logistics Centers) cannot be closed without transferring the workload, at a cost in the vicinity of $1 billion at each one. There is not enough saving in base operating support (BOS) to pay back this cost in, literally, a hundred years. It is more cost effective, at least until long term requirements are better defined, to continue reducing depot excess capacity by downsizing in place. This involves personnel reductions and mothballing or disposing of excess facilities and equipment. This may involve accepting some inefficiency in facility use, but the cost is negligible compared to the cost of transferring workload.

Our initial analysis indicated one major depot, McClellan, could be closed and payback achieved in 19 years. Further analysis showed that McClellan's workload will be declining over the next six years. Some of the weapon systems it supports are declining in numbers to the extent that contracting out or relocation will become cost effective. Since substantially less workload will have to be transferred if closure occurs in 1999, the cost to

close McClellan is around $428 million, not the $1 billion anticipated for the other four. The payback period after 1999 is only two years. Based on these results, the Secretary of the Air Force determined McClellan was the only major Air Force depot that was reasonable to consider for closure or realignment.

As you can see, this decision could be deferred until 1995 and still achieve closure by 1999. That would allow McClellan to compete with other depots in the DOD system to determine which ones are the most effective. McClellan could well win the right to stay open in that competition, based on workloads transferred from other Service depots. It wouldn't be eligible if it were slated for closing, even though the closing would still be years away. Therefore, we hope you will put closing McClellan, or any of the major depot bases, on hold until 1995.

On the other hand, if you believe that one major Air Force depot must be closed, it should be McClellan. Based on our analysis, the others are cost-prohibitive to close at this time. As you know, Criterion IV is part of the "military value" to which the Secretary of Defense directed us to give priority. The staggering cost to close contributes to a high military value rating for the other four depots compared to McClellan, though there are a number of other factors as well. For example, the others all have active or Reserve flying missions and the capacity to increase those missions.

More to the point, a list must be capable of implementation. A billion dollar closure

cost would extremely difficult to deal with in the severely strained defense budget. Therefore, if the Commission chooses to recommend closure of a major Air Force depot this year, it should be McClellan. Not only can closure be accommodated within DOD cost and payback guidelines, but it was also the lowest ranked of the five major depot bases.

Newark Air Force Base. As stated earlier, the Secretary of Defense approved the Air Force's recommendation to close Newark AFB. While Newark is not an Air Logistics Center, the Air Force considers it a depot since its primary workload is depot level maintenance (overhaul/repair). Newark, like McClellan, ranked low in the Air Force's initial depot analysis and was identified by the Secretary of the Air Force as a closure/realignment candidate. Newark does not have an airfield and is not a traditional Air Force Base. Its capability to handle other major Air Force missions is almost nonexistent. Instead, it is a stand-alone, highly technical, industrial plant that is operated predominantly by a civilian work force, and is conducive to conversion to the private sector.

We expect a small portion of the workload to be transferred from Newark AFB to other Air Force locations, thus making more efficient use of those facilities. The privatization of the Newark facility could be a model for future efforts to convert organic work/facilities to the private sector. A private contractor could bring other types of workload to Newark. This would increase its capacity utilization and lead to lower costs. Additionally, military personnel support costs are eliminated under the privatized concept.

I have already replied to the Commission concerning the community's proposal that Newark remain open and become a DoD center, relocating other DoD work there. This proposal has been discussed at various times, including during the BCEG's discussions on how to reduce excess depot capacity. The proposal appears to have merit even though there is no data proving it would be more cost effective. The major drawback is difficulty in implementation. For example, the Navy has been reluctant to relocate the bulk of their guidance workload. They currently use their own facilities and private contractors, and are quite satisfied with this arrangement. Moving workload from a private contractor into a DoD operation would be extremely difficult without strong evidence that the contractor is not meeting the requirement and/or DoD can accomplish it at less cost. It also would be inconsistent with the current administration's initiative to privatize DoD workload wherever reasonable to do so.

AIR RESERVE FORCE BASE ISSUES

O'Hare Reserve Base, Illinois. The City of Chicago proposed closure of the Reserve base at O'Hare International Airport and transfer of the two Air Force units to Rockford, Illinois at the sole expense of the City of Chicago. This action was recommended to the Commission on the condition that the entire expense be borne by non-Federal funds.

The Air Force has no military requirement to move out of O'Hare Reserve Base, nor is there any economic benefit from doing so. The recruiting base for the units will be at least

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MEGACENTER SELECTION

SITE	DOD ADJUSTED RANKING	R&A RANKING
DITSO COLUMBUS IPC	1	1
RPC HILL AFB	2	2
SPCC MECHANICSBURG	3	3
RPC KELLY AFB	4	4
RPC TINKER AFB	5	5
RPC GUNTER ANNEX	6	6
AIPC CHAMBERSBURG	7	7
RPC WRIGHT PAT AFB	8	9
NCTS JACKSONVILLE	9	8
RPC McCLELLAN AFB	10	13
AIPC ROCK ISLAND	11	11
AIPC ST. LOUIS	12	10
DITSO DENVER IPC	13	12
RPC WARNER-ROBINS AFB	14	16
AIPC HUNTSVILLE	15	14
NCTS SAN DIEGO	16	15

DISA SELECTION CRITERIA

CRITERION	DESCRIPTION	WEIGHT
FACILITIES		50%
Total Space	Square feet occupied by the data processing installation.	2%
Conditioned Space	Total square feet with at least 18" raised floor and provisions for air conditioning and power distribution.	18%
Convertible Space	Square feet which may be converted to conditioned for $15 or less per square foot.	2%
Contiguous Space	The largest, single, contiguous conditioned space.	2%
Air Conditioning	Total cooling capacity available in conditioned space (BTU/1000).	6%
Chilled Water	Is chilled water available for water cooled computer hardware?	2%
Electrical Power	Total electric power available from primary source to power computers (KVA).	8%
Building Condition	Length of time since building was constructed or last refurbished.	10%
SECURITY		35%
Backup Power	The total electrical power from secondary or backup source (KVA).	10%
Communications	Is diverse routing available for communications lines?	5%
Security Perimeter	Measure of physical security based on type of facility where building is located (i.e., military, federal, or leased) and number of physical perimeters surrounding facility.	15%
Survivability	Likelihood of a facility being struck by a hurricane, tornado, or earthquake.	5%
OPERATIONS		12%
Proximity to Fiber Optic Hub	Measure of availability of communications infrastructure based on the proximity of common carrier fiber optic hubs.	2%
Regional Operations Cost	A measure of expected cost of operations based on cost of living data from American Chamber of Commerce Researchers Association.	10%

DISA EVALUATION AND THE BRAC CRITERIA

BRAC CRITERIA	DISA ANALYSIS
MISSION REQUIREMENTS/IMPACT ON OPERATIONAL REQUIREMENTS	OVERALL: MEGACENTER PLAN DESIGNED TO SELECT BEST SITES TO PROVIDE BETTER OR EQUAL SERVICE TO CUSTOMERS
AVAILABILITY/CONDITION OF LAND, FACILITIES, AND AIRSPACE	FACILITIES CRITERIA: WEIGHTED TO SELECT SITES WHICH COULD SUPPORT MEGACENTERS
ABLITY TO ACCOMMODATE CONTINGENCY, MOBILIZATION, & FUTURE REQUIREMENTS	SECURITY AND FACILITIES CRITERIA: SECURITY WEIGHTED HEAVY; NUMBER OF MEGACENTERS DRIVEN BY DATA SURGE REQUIREMENT
COST AND MANPOWER IMPLICATIONS	USED COBRA MODEL TO DEFINE COSTS/SAVINGS, USED CHAMBER OF COMMERCE STATISTICS TO DETERMINE OPERATING COSTS
RETURN ON INVESTMENT	COBRA DOCUMENTATION, BREAK EVEN IN 1997 (YEAR 4)
ECONOMIC IMPACT ON COMMUNITY	ECONOMIC IMPACT CONSIDERED NEGLIGIBLE -- SMALL SITES
INFRASTRUCTURE AT BOTH RECEIVING AND LOSING COMMUNITIES	NEGLIGIBLE IMPACT -- SMALL MANPOWER LOSSES/GAINS
ENVIRONMENTAL IMPACT	INVOLVES DISESTABLISHMENT OF BASE TENANT--NOT CLOSURE OF BASE

Defense Information Systems Agency (DISA)
Static Base Information

ISSUE	CONSOLIDATION PLAN
ONE TIME COST ($M)	$296,509
STEADY STATE SAVINGS ($M)	$209,502
BREAK EVEN YEAR	1998 (Year 5)
ECONOMIC IMPACT ($M) ('93/Cumulative)	$1,318,373

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13 Jan

close Sacramento + San Antonio

JCSG-DM Alternative DM-2

- **Workload Impacts**
  - Interservice Workload Transfers
    - DPAH Transferring In: 236,529
    - DPAH Transferring Out: 1,628,800
  - Intraservice DPAH Transferring: 7,864,933
  - Total Transferring Workload: 9,730,262
- **Preliminary AF COBRA Costs**
  - One Time Costs: $1,159 M
  - 20 Year NPV: $ (626) M
  - Return on Investment: 8 Yrs After Closure

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SECRETARY OF THE AIR FORCE
WASHINGTON

MAY 9 1995

The Honorable Allan J. Dixon
Chairman, Defense Base Closure
and Realignment Commission
1700 N. Moore Street, Suite 1425
Arlington, VA 22209

95C512-7

Dear Chairman Dixon:

Following our appearance before the 95 Defense Base Realignment and Closure (BRAC) Commission a month ago, we asked our staff for additional analysis of depot closure and consolidation data from all four commissions for the three Military Departments so that we could better understand various views raised about depot closure costs and savings. Discussions with the Army, Navy, and Joint Depot Maintenance Activity Group suggested the most appropriate means to gather this information was to use Cost of Base Realignment Actions (COBRA) data submitted to OSD and to the commissions. We have done that. Our analysis of the data sustains our original determination that realigning and downsizing is the most cost effective means to achieve depot savings and efficiencies rather than attempting a complete depot base closure. This approach may be unique to the Air Force because our depots and the associated base populations are significantly larger than those in the other Services.

The question from Commission staff and others is: Why do Air Force depot closure costs seem so much higher? To answer this we have compared 10 Army and Navy closure and realignment actions with Air Force depot alternatives to include McClellan and Kelly (recognizing that these two were not actually on our list to the Commission, but are considered here for comparative purposes). We have found from the data that base population is a very strong indicator of the one-time cost to close. Not necessarily a surprising result, but when all DoD depot actions are plotted together (Chart 1) it tells an instructive story. Air Force costs are in line with other DoD COBRA estimates, when allowing for the significantly larger base populations we are dealing with. For example, excluding Air Force depots, other Military Departments report average one-time closure costs per depot of $145M, based on an average population per depot of 4,290 people. If a decision were made to close either Kelly or McClellan, or both, the average costs would be $578M or almost four times higher than the average experience elsewhere. This is not suprising when you consider that the average population at these Air Force depots is nearly three and a half times greater than that found at Army and Navy depots. In the case of McClellan, costs also appear higher than the overall DoD trend line because of the additional costs associated with moving certain unique facilities such as the Air Force Technology Application Center, the Coast Guard, and classified activities, and the shutdown of a neutron radiation facility.

We also looked at the other side of the equation, i.e., savings, and found that Air Force savings are well in line with all other DoD activities as shown in Chart 2 (enclosed). What the data show is the level of steady state annual savings is principally explained by how many positions are actually eliminated from employment rolls. The more people that are actually taken out of end strength the larger the steady state savings. The Air Force did not recommend to the Secretary of Defense a complete depot installation closure, in large part because of the relatively high one-time costs to close an Air Force depot compared to what could be saved. Chart 3 compares the ratio of annual steady state savings to one-time costs. All three military departments show relatively similar annual steady state savings per depot, but the Air Force installations reflect a significantly higher one-time cost to close.

For the Air Force it is more cost effective to realign and downsize; allowing each of our five Air Logistics Centers (ALCs) to develop their own areas of comparative advantage. Our review of the Air Force data compared to the larger DoD experience over all four closure commissions, further supports the view that for the Air Force a one or two depot base closure recommendation does not make good economic sense.

Another consideration for us is total budgetary cost. We currently have $1,047M budgeted for the next six years to cover the total cost of FY95 commission closures and realignment. Should a depot be added it is very likely that our currently budgeted costs would nearly double. Within the context of our future funding needs, and the high priority the Secretary of Defense and the President have placed on future modernization needs, it would be a serious funding problem for the Air Force. We took great care in building our closure package to ensure that what we were planning was fiscally prudent, and we believe our depot recommendations meet that objective.

We welcome the opportunity for our base closure experts to meet with your staff to cover this analysis in whatever level of detail would be helpful.

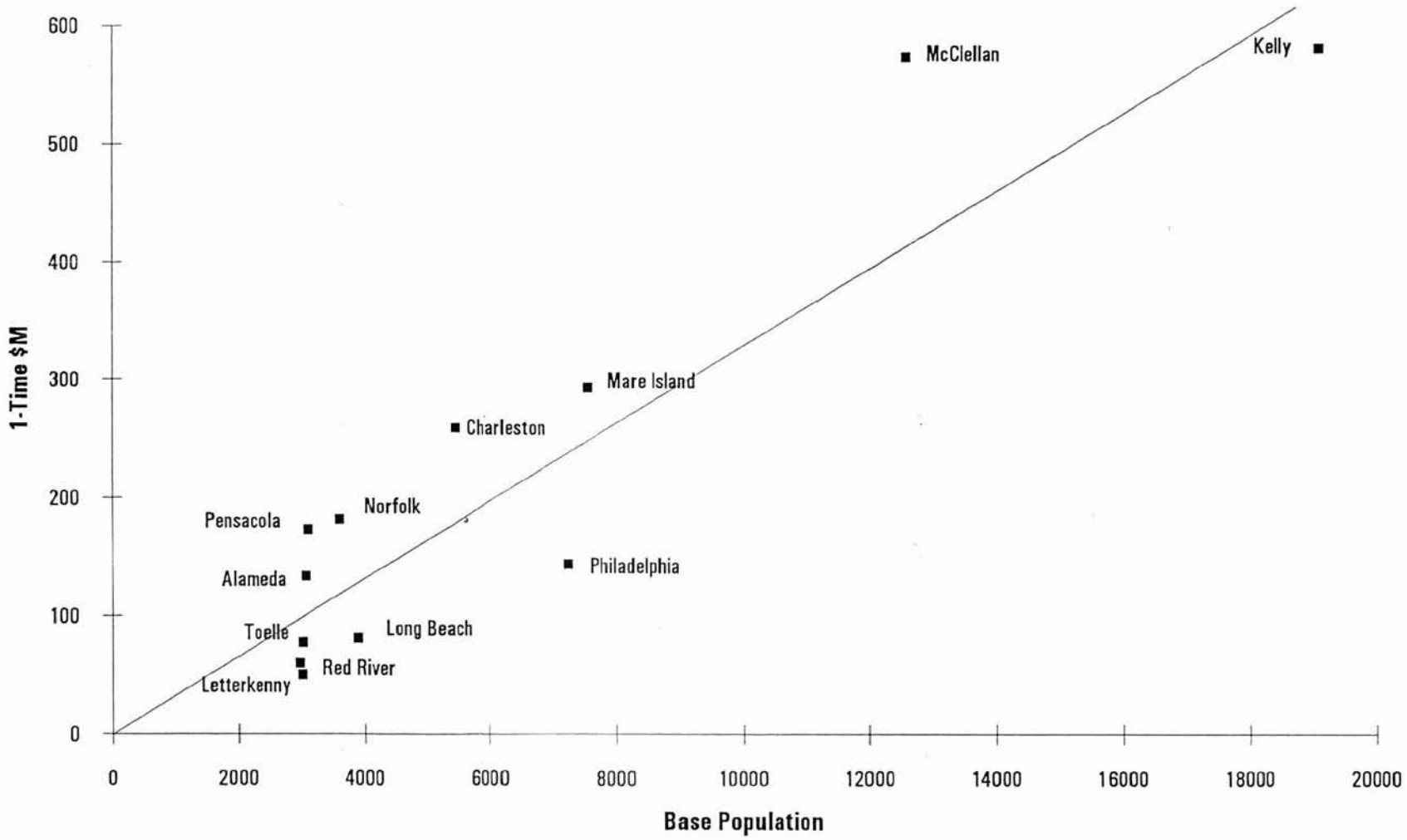
Sincerely,

Sheila E. Widnall

Sheila E. Widnall

CHART 1

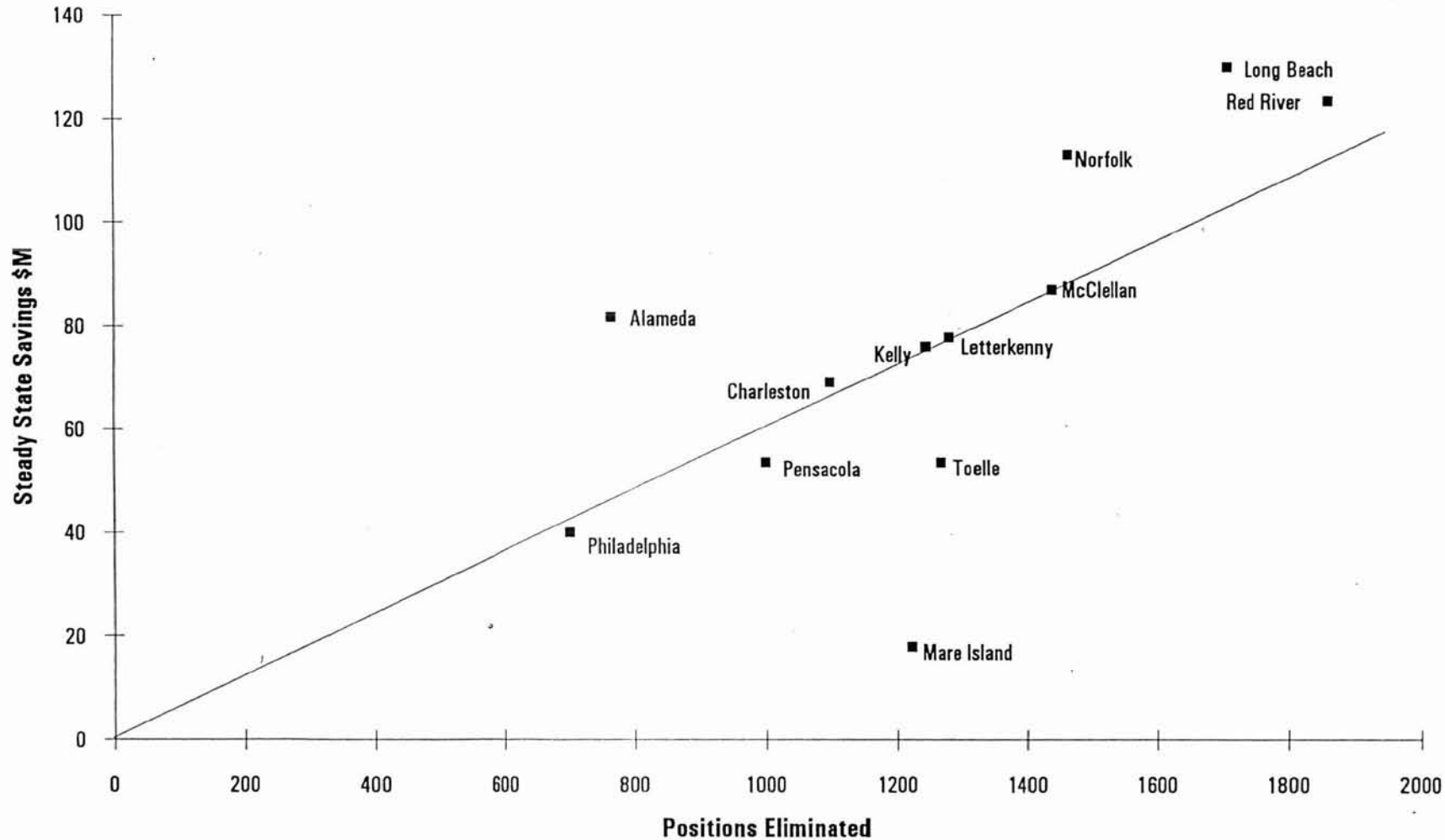
BASE POPULATION VS 1-TIME COST $M



Base Population Means: AF 15,846, Army 3004, Navy 4841

CHART 2

POSITIONS ELIMINATED VS STEADY STATE SAVINGS $M



Mean Positions Eliminated: Gobal 1254, AF 1342, Army 1472, Navy 1135

CHART 3

COMPARISON OF MILITARY DEPARTMENT COBRA DEPOT ESTIMATES ALL FOUR BRAC COMMISSIONS

	AVERAGE PER BASE				
	BASE POPULATION	1-TIME COST FY95 $M	POSITIONS ELIMINATED	ANNUAL STEADY STATE SAVINGS	RATIO OF STEADY STATE SAVINGS TO ONE TIME COST
ARMY [1]	3,004	62	1,472	85	1.37
NAVY [2]	4,841	181	1,135	72	.40
AIR FORCE [3]	15,846	578	2,526	82	.14
	6,216	217	1,254	77	.35

[1] Includes Red River, Letterkenny, Toelle
[2] Includes Shipyards--Philadephia, Mare Island, Charleston, Long Beach; Aviation Depots--Alameda, Pensacola, Norfolk
[3] Includes Kelly, McClellan (Kelly and McClellan were not recommendations to the Commission but are included here for purpose of comparison only)

CHART 4
BASE POPULATION VS 1-TIME COST $M

Activity	Base Population	1-Time Cost FY95 $M
Letterkenny Army Depot	3,017	50
Toelle Army Depot	3,024	77
Naval Aviation Depot Alameda	3,076	133
Naval Aviation Depot Pensacola	3,110	173
Naval Aviation Depot Norfolk	3,606	181
Naval Shipyard, Long Beach	3,891	81
Red River Army Depot	2,971	60
Charleston Naval Shipyard	5,430	259
Naval Shipyard, Philadelphia	7,236	144
Mare Island Naval Shipyard	7,541	293
McClellan AFB	12,588	574
Kelly AFB	19,104	582
Total	74,594	2,607
Average	6,216	217
Total Air Force	31,692	1,156
Air Force Average	15,846	578
Total Army & Navy	42,902	1,451
Army & Navy Average	4,290	145

SOURCE: Data from COBRA reports submitted to OSD commission except McClellan & Kelly, which were not submitted

NOTE: 1-time costs from previous commissions were adjusted to FY95 constant year dollars in order to produce comparable data for all four commissions

NOTE: Newark AFS was not included since positions eliminated were replaced with contractor personnel

CHART 5
POSITIONS ELIMINATED VS STEADY STATE SAVINGS $M

Activity	Positions Eliminated	Steady State Savings $M
Navy Shipyard Philadelphia	701	40
Naval Aviation Depot Alameda	764	82
Naval Aviation Depot Pensacola	1000	53
Charleston Naval Shipyard	1088	69
Mare Island Naval Shipyard	1223	18
Kelly AFB	1245	76
Toelle Army Depot	1268	53
Letterkenny Army Depot	1287	78
McClellan AFB	1438	87
Naval Aviation Depot Norfolk	1464	113
Naval Shipyard, Long Beach	1707	130
Red River Army Depot	1861	124
Total	15,046	923
Average	1,254	77
Total Air Force	2526	156
Air Force Average	1,342	82
Total Army & Navy	12,520	766
Average Army & Navy	1,252	77

SOURCE: Data from COBRA reports submitted to OSD commission except McClellan and Kelly, which were not submitted

NOTE: Steady state savings from previous commissions were adjusted to FY95 constant year dollars in order to produce comparable data for all four commissions

NOTE: Newark AFS was not included since positions eliminated were replaced with contractor personnel

CHART 6

DOD DEPOT ACTIVITIES RECOMMENDED FOR BRAC ACTION

YR COM	ACTIVITY	STATUS
91	Navy Shipyard Philadelphia	Complete Closure
93	Mare Island Naval Shipyard	Complete Closure
93	Naval Aviation Depot Alameda	Complete Closure
93	Naval Aviation Depot Pensacola	Close Depot Only
93	Charleston Naval Shipyard	Complete Closure
93	Naval Aviation Depot Norfolk	Close Depot Only
95	Naval Shipyard, Long Beach	Complete Closure
95	Red River Army Depot	Close Depot
95	Letterkenny Army Depot	Realign
95	Kelly AFB	Focused Analysis - Not recommended for BRAC action
95	McClellan AFB	Focused Analysis - Not recommended for BRAC action
93	Toelle Army Depot	Close Depot
93	Newark AFS	Privatization in Place - Cost & Savings not comparable
88	Lexington Army Depot	Close Depot COBRA data not available
88	Navajo Depot Activity	Close Ammo Storage - Not included
93	Savanna Army Depot Activity	Close Ammo Storage - Not included
95	Seneca Army Depot	Close Ammo Storage - Not included
95	Sierra Army Depot	Close Ammo Storage - Not included
91	Sacramento Army Depot	Close Supply Depot - Not included
95	Ship Repair Facility, Guam	Closure of Floating Drydock - Not included

CHART 7
MAJOR TENANTS ON KELLY & McCLELLAN AFB

KELLY AFB

Tenant / (Location)	Positions	MilCon $M	Other $M	Total $
AFRES (Lackland)	673	0.0	0.0	0.0
ANG (Lackland)	202	0.0	0.0	0.0
AIA (Lackland)	3,247	0.0	0.0	0.0
SIGINT (Lackland)	813	0.0	0.0	0.0
1849 EIS (Lackland)	311	0.0	0.0	0.0
DLA (Base X)	973	0.0	20.6	20.6
DECA (Base X)	241	0.0	5.1	5.1
DFAS (Base X)	179	0.0	3.8	3.8
Others (Base X)	925	0.0	19.6	19.6
Total	7,564	0.0	49.1	49.1

McCLELLAN AFB

Tenant / (Location)	Positions	MilCon $M	Other $M	Total $
AFRES (March)	53	0.0	1.1	1.1
USCG (Moffett)	190	22.1	4.0	26.1
Det 42 (Travis)	142	23.5	8.0	31.6
AFTAC (Offutt)	388	6.1	13.2	19.3
1827 EIS (Travis)	309	1.2	6.6	7.8
DLA (Base X)	603	0.0	12.8	12.8
DFAS (Base X)	139	0.0	2.9	2.9
Others (Base X)	618	0.0	13.1	13.1
Total	2,442	52.9	61.8	114.7

Note: Kelly to Lackland moves are on paper only, people and equipment remain intact, real estate transfers to Lackland
Other cost based on $22,000 per position plus addition $5M for Det 42 and AFTAC for equipment movement

Document Separator

Phone Mail to the Author
Mail Phone Message to 95CH18-2

AIR FORCE DEPOT

FINANCIAL CONSIDERATIONS

95 COMMISSION

JOHN BEACH
PRIN DEP ASST SEC AF (FM)
APRIL 17, 1995

04/17/95 18:40 ☎703 693 1996 SAF FM ☎003 007

COMPARISON OF CLOSURE COBRA DATA FROM EACH MILITARY DEPARTMENT
(Costs in $M)

	Air Force Kelly AFB	Navy Long Beach	Army Red River	Army Letterkenny
ROI year	9	0	0	0
NPV	283	1,949	1,497	952
One-time Costs	582	75	60	50
One-time Savings	7	0	0	0
Steady State Savings	76	131	123	78
Positions				
Population	19,104	3891	2,971	3,017
Eliminated	1,245	1697	1,861	1,287
Realigned	16,415	472	1,040	803
% Eliminated	7%	44%	63%	43%
% Realigned	86%	12%	35%	27%

COMPARISON OF CLOSURE COBRA DATA FROM EACH MILITARY DEPARTMENT
(Costs in $M)

	Air Force Kelly AFB	Navy Long Beach	Army Red River	Army Letterkenny	DoD 10 Depots
ROI year	9	0	0	0	
NPV	283	1,949	1,497	952	
One-time Costs	582	75	60	50	
One-time Savings	7	0	0	0	
Steady State Savings	76	131	123	78	
Positions					
Population	19,104	3891	2,971	3,017	43,723
Eliminated	1,245	1697	1,861	1,287	12363
Realigned	16,415	472	1,040	803	
% Eliminated	7%	44%	63%	43%	28%
% Realigned	86%	12%	35%	27%	

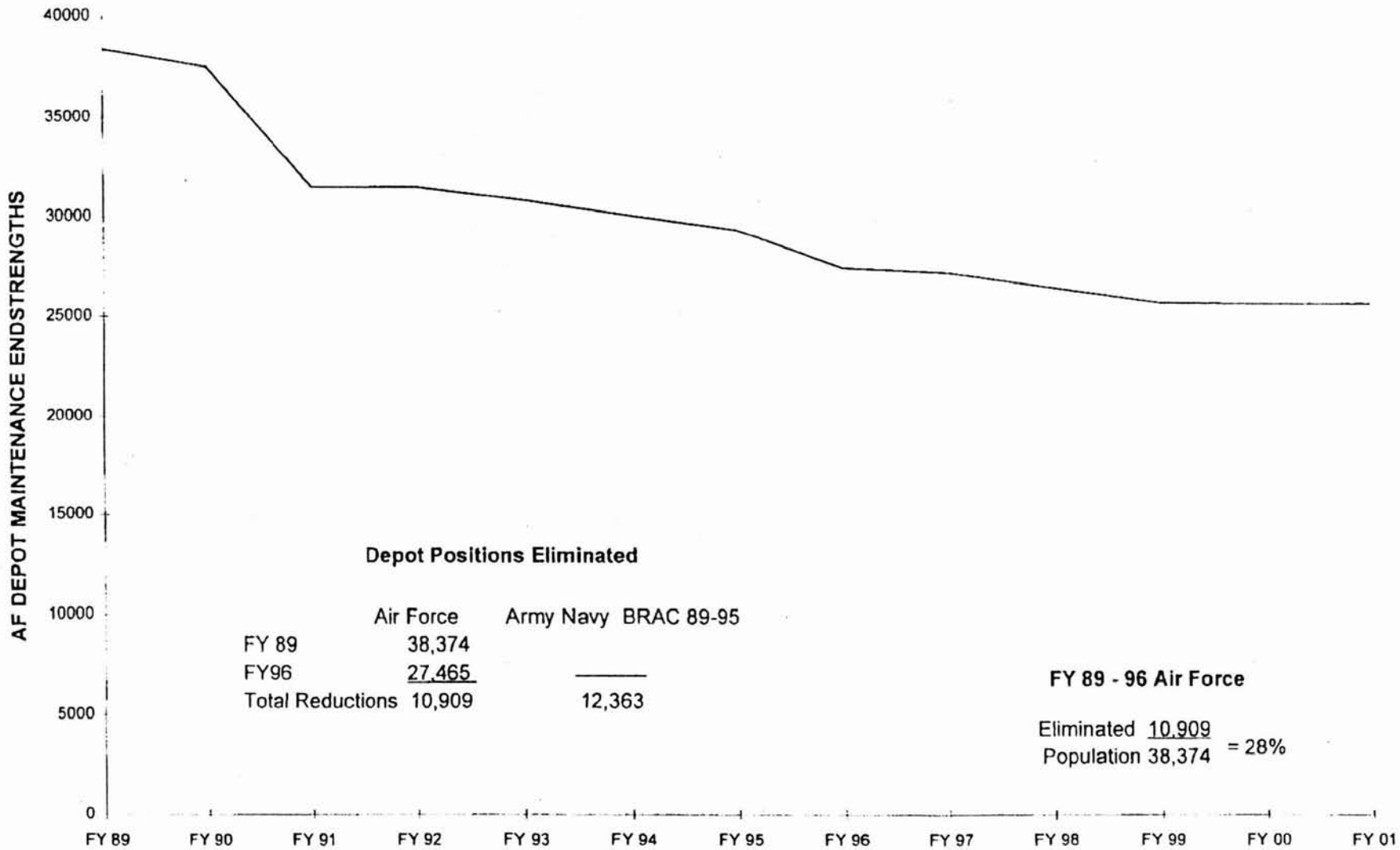
04 17 95 18:41 703 693 1996 SAF/PM 007

COMPARISON OF MILITARY DEPARTMENT COBRA DEPOT ESTIMATES ALL FOUR BRAC COMMISSIONS

	AVERAGE PER BASE			
	BASE POPULATION	1-TIME COST FY95 $M	POSITIONS ELIMINATED	ANNUAL STEADY STATE SAVINGS
ARMY [1]	3,355	62	1,472	85
NAVY [2]	4,808	181	1,135	72
AIR FORCE [3]	14,332	578	1,342	82
	6,032	217	1,254	77

1 Includes Red River, Letterkenny, Toelle
2 Includes Shipyards--Philadephia, Mare Island, Charleston, Long Beach; Aviation Depots--Alameda, Pensacola, Norfolk
3 Includes Kelly, McClellan (Kelly and McClellan were not recommendations to the Commission but are included here for purpose of comparison only)

COMPARISON OF AIR FORCE DEPOT MAINTENANCE REDUCTIONS WITH DOD



95 BRAC

CURRENT DOLLARS, MILLIONS
EXCLUDES ENVIRONMENTAL

	COSTS FY 96 -01		SAVINGS FY 96-01		SAVINGS FY 96-15		PERCENT RETURN PER YEAR
BUDGET	1048		868		N/A		
NO BASE CLOSURE	0		0		0		
BRAC 95							
OSD SUBMIT	1105		1212		8616		10.81%
CLOSE 0 DEPOT	917		870		6461		10.25%
CLOSE 1 DEPOT	1545	628	944	74	8087	1626	4.87%
CLOSE 2 DEPOT	2209	664	1019	75	9897	1810	5.14%

04 17 95 18:42 703 693 1996 SAF PM 007/007

BASE POPULATION VS 1-TIME COST $M

Activity	Base Population	1-Time Cost FY95 $M
Letterkenny Army Depot	3,017	50
Toelle Army Depot	3,024	77
Naval Aviation Depot Alameda	3,076	133
Naval Aviation Depot Pensacola	3,110	173
Naval Aviation Depot Norfolk	3,606	181
Naval Shipyard, Long Beach	3,658	81
Red River Army Depot	4,025	60
Charleston Naval Shipyard	5,430	259
Naval Shipyard, Philadelphia	7,236	144
Mare Island Naval Shipyard	7,541	293
McClellan AFB	11,003	574
Kelly AFB	17,660	582
Total	72,386	2,607
Average	6,032	217
Total Air Force	28,663	1,156
Air Force Average	14,332	578
Total Army & Navy	43,723	1,451
Army & Navy Average	4,372	145

72,386 McClellan
−11,003 Kelly
−17,660
43,723

SOURCE: Data from COBRA reports submitted to OSD commission except McClellan & Kelly, which were not submitted

NOTE: 1-time costs from previous commissions were adjusted to FY95 constant year dollars in order to produce comparable data for all four commissions

NOTE: Newark AFS was not included since positions eliminated were replaced with contractor personnel

POSITIONS ELIMINATED VS STEADY STATE SAVINGS $M

Activity	Positions Eliminated	Steady State Savings $M
Navy Shipyard Philadelphia	701	40
Naval Aviation Depot Alameda	764	82
Naval Aviation Depot Pensacola	1000	53
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Mare Island Naval Shipyard	1223	18
Kelly AFB	1245	76
Toelle Army Depot	1268	53
Letterkenny Army Depot	1287	78
McClellan AFB	1438	87
Naval Aviation Depot Norfolk	1464	113
Naval Shipyard, Long Beach	1707	130
Red River Army Depot	1861	124
Total	15,046	923
Average	1,254	77
Total Air Force	2683	163
Air Force Average	1,342	82
Total Army & Navy	12,363	760
Average Army & Navy	1,236	76

15,046 Kelly
-1,245
-1,438 McClellan
12,363

$\frac{12,363}{43,723} = .2828$

SOURCE: Data from COBRA reports submitted to OSD commission except McClellan and Kelly

NOTE: Steady state savings from previous commissions were adjusted to FY95 constant year dollars in order to produce comparable data for all four commissions

NOTE: Newark AFS was not included since positions eliminated were replaced with contractor personnel

Document Separator

AIR FORCE

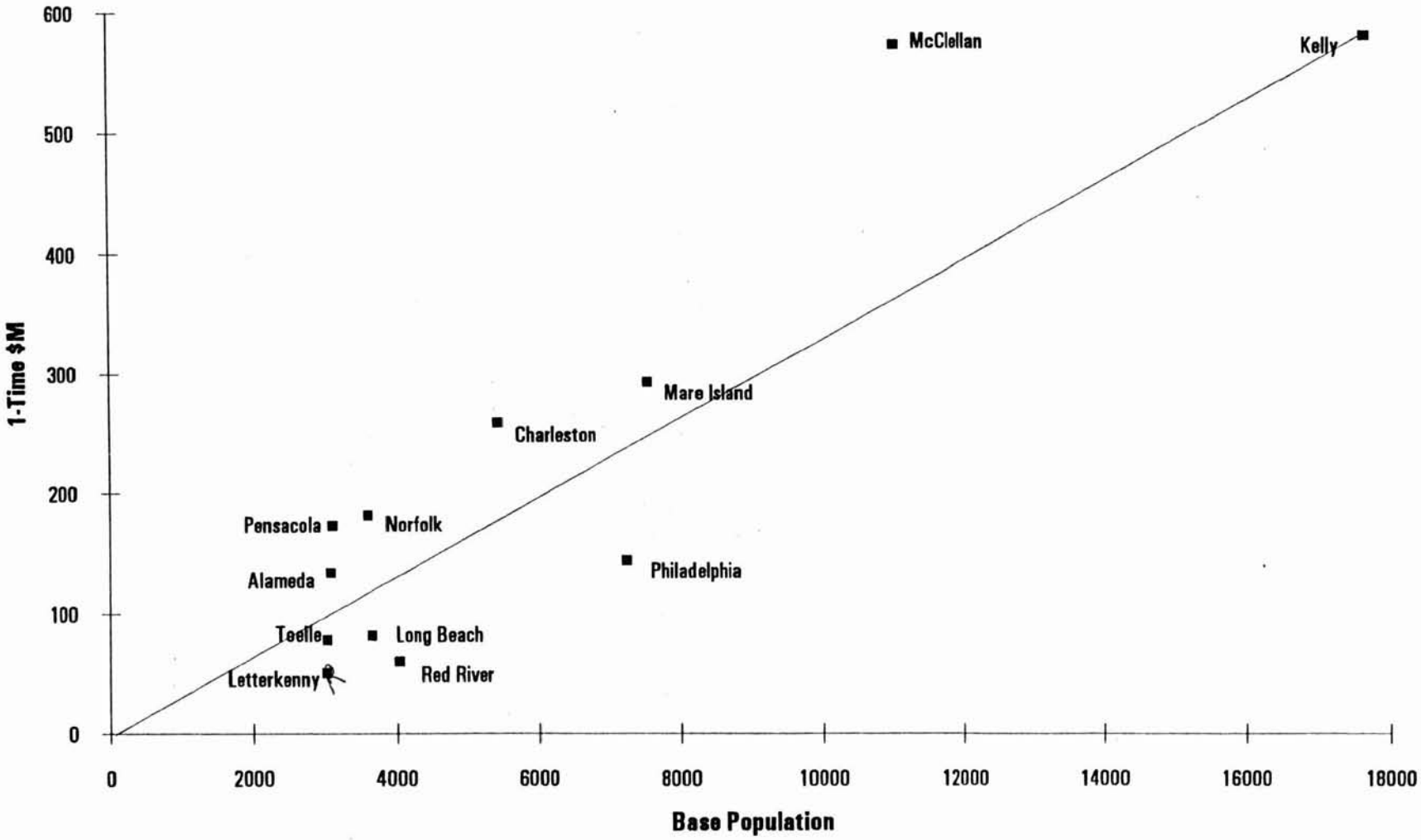
1995 BRAC

PART I

AS OF 13 APRIL 1995

CHART 1

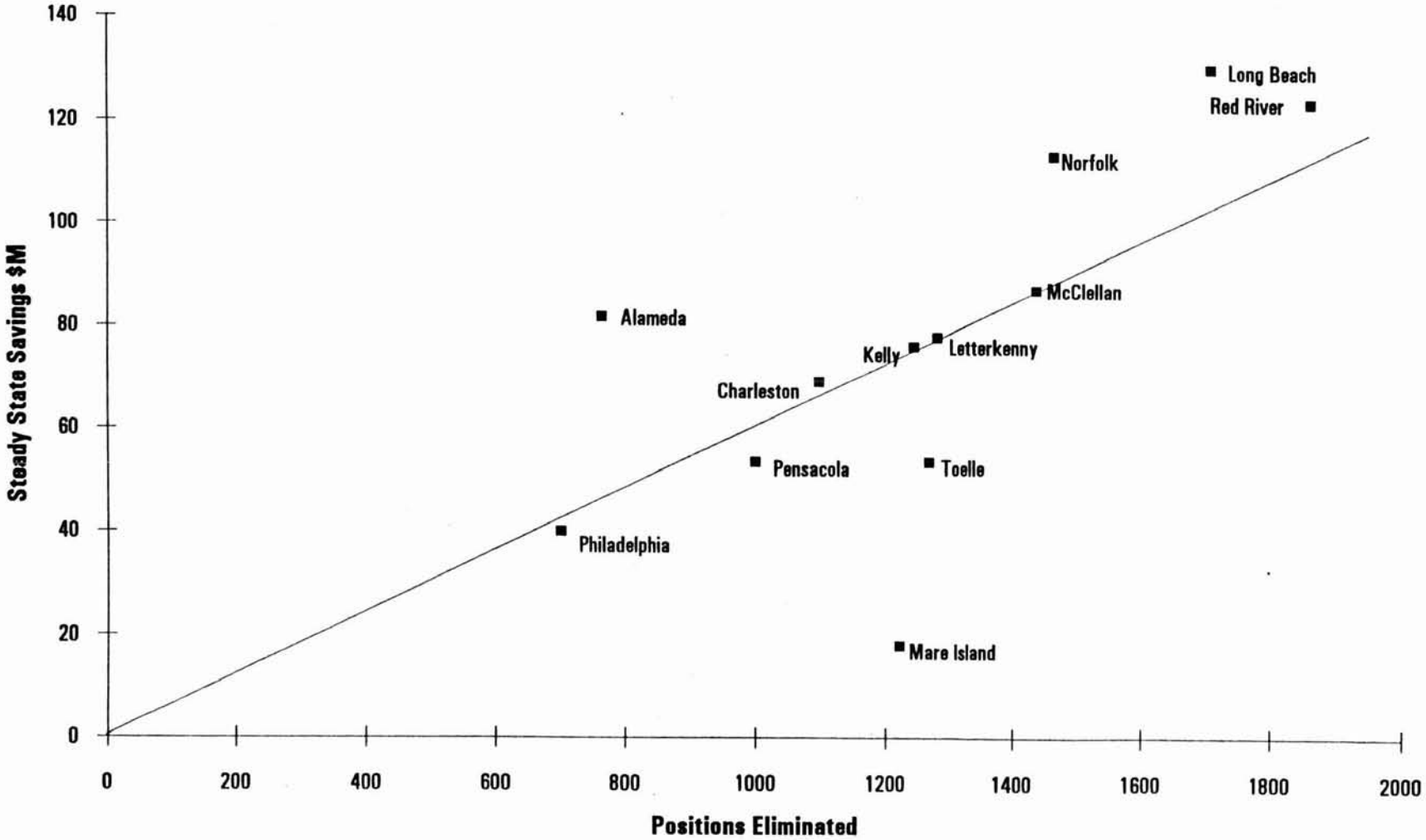
BASE POPULATION VS 1-TIME COST $M



Base Population Means: Air Force 14,332, Army 3355, Navy 4808

CHART 2

POSITIONS ELIMINATED VS STEADY STATE SAVINGS $M



Mean Positions Eliminated: Gobal 1254, AF 1342, Army 1472, Navy 1135

CHART 3

COMPARISON OF MILITARY DEPARTMENT COBRA DEPOT ESTIMATES ALL FOUR BRAC COMMISSIONS

	AVERAGE PER BASE				
	BASE POPULATION	1-TIME COST FY95 $M	POSITIONS ELIMINATED	ANNUAL STEADY STATE SAVINGS	RATIO OF STEADY STATE SAVINGS TO ONE TIME COST
ARMY [1]	3,355	62	1,472	85	1.37
NAVY [2]	4,808	181	1,135	72	.40
AIR FORCE [3]	14,332	578	~~2,526~~ 1,250	82	.14
	6,032	217	1,254	77	.35

[1] Includes Red River, Letterkenny, Toelle

[2] Includes Shipyards--Philadephia, Mare Island, Charleston, Long Beach; Aviation Depots--Alameda, Pensacola, Norfolk

[3] Includes Kelly, McClellan (Kelly and McClellan were not recommendations to the Commission but are included here for purpose of comparison only)

CHART 5
POSITIONS ELIMINATED VS STEADY STATE SAVINGS $M

Activity	Positions Eliminated	Steady State Savings $M
Navy Shipyard Philadelphia	701	40
Naval Aviation Depot Alameda	764	82
Naval Aviation Depot Pensacola	1000	53
Charleston Naval Shipyard	1088	69
Mare Island Naval Shipyard	1223	18
Kelly AFB	1245	76
Toelle Army Depot	1268	53
Letterkenny Army Depot	1287	78
McClellan AFB	1438	87
Naval Aviation Depot Norfolk	1464	113
Naval Shipyard, Long Beach	1707	130
Red River Army Depot	1861	124
Total	15,046	923
Average	1,254	77
Total Air Force	2526	156
Air Force Average	1,342	82
Total Army & Navy	12,520	766
Average Army & Navy	1,252	77

SOURCE: Data from COBRA reports submitted to OSD commission except McClellan and Kelly, which were not submitted

NOTE: Steady state savings from previous commissions were adjusted to FY95 constant year dollars in order to produce comparable data for all four commissions

NOTE: Newark AFS was not included since positions eliminated were replaced with contractor personnel

CHART 4
BASE POPULATION VS 1-TIME COST $M

Activity	Base Population	1-Time Cost FY95 $M
Letterkenny Army Depot	3,017	50
Toelle Army Depot	3,024	77
Naval Aviation Depot Alameda	3,076	133
Naval Aviation Depot Pensacola	3,110	173
Naval Aviation Depot Norfolk	3,606	181
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McClellan AFB	11,003	574
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Total	72,386	2,607
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Total Air Force	28,663	1,156
Air Force Average	14,332	578
Total Army & Navy	43,723	1,451
Army & Navy Average	4,372	145

SOURCE: Data from COBRA reports submitted to OSD commission except McClellan & Kelly, which were not submitted

NOTE: 1-time costs from previous commissions were adjusted to FY95 constant year dollars in order to produce comparable data for all four commissions

NOTE: Newark AFS was not included since positions eliminated were replaced with contractor personnel

CHART 6

DOD DEPOT ACTIVITIES RECOMMENDED FOR BRAC ACTION

YR COM	ACTIVITY	STATUS
91	Navy Shipyard Philadelphia	Complete Closure
93	Mare Island Naval Shipyard	Complete Closure
93	Naval Aviation Depot Alameda	Complete Closure
93	Naval Aviation Depot Pensacola	Close Depot Only
93	Charleston Naval Shipyard	Complete Closure
93	Naval Aviation Depot Norfolk	Close Depot Only
95	Naval Shipyard, Long Beach	Complete Closure
95	Red River Army Depot	Close Depot
95	Letterkenny Army Depot	Realign
95	Kelly AFB	Focused Analysis - Not recommended for BRAC action
95	McClellan AFB	Focused Analysis - Not recommended for BRAC action
93	Toelle Army Depot	Close Depot
93	Newark AFS	Privatization in Place - Cost & Savings not comparable
88	Lexington Army Depot	Close Depot COBRA data not available
88	Navajo Depot Activity	Close Ammo Storage - Not included
93	Savanna Army Depot Activity	Close Ammo Storage - Not included
95	Seneca Army Depot	Close Ammo Storage - Not included
95	Sierra Army Depot	Close Ammo Storage - Not included
91	Sacramento Army Depot	Close Supply Depot - Not included
95	Ship Repair Facility, Guam	Closure of Floating Drydock - Not included

CHART 7

BASE POPULATION VS 1-TIME COST $M (INCLUDING SA-ALC and SM-ALC)

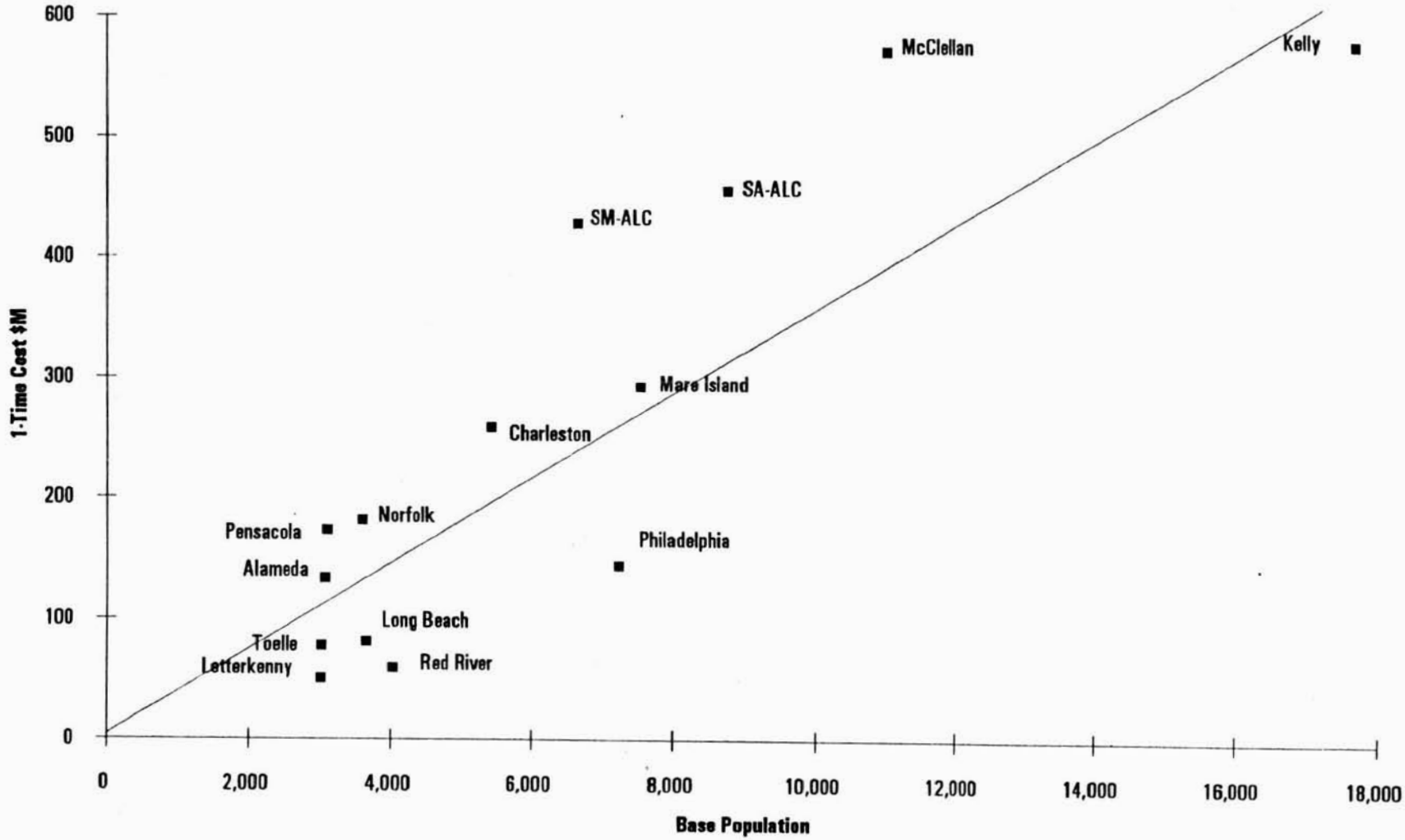
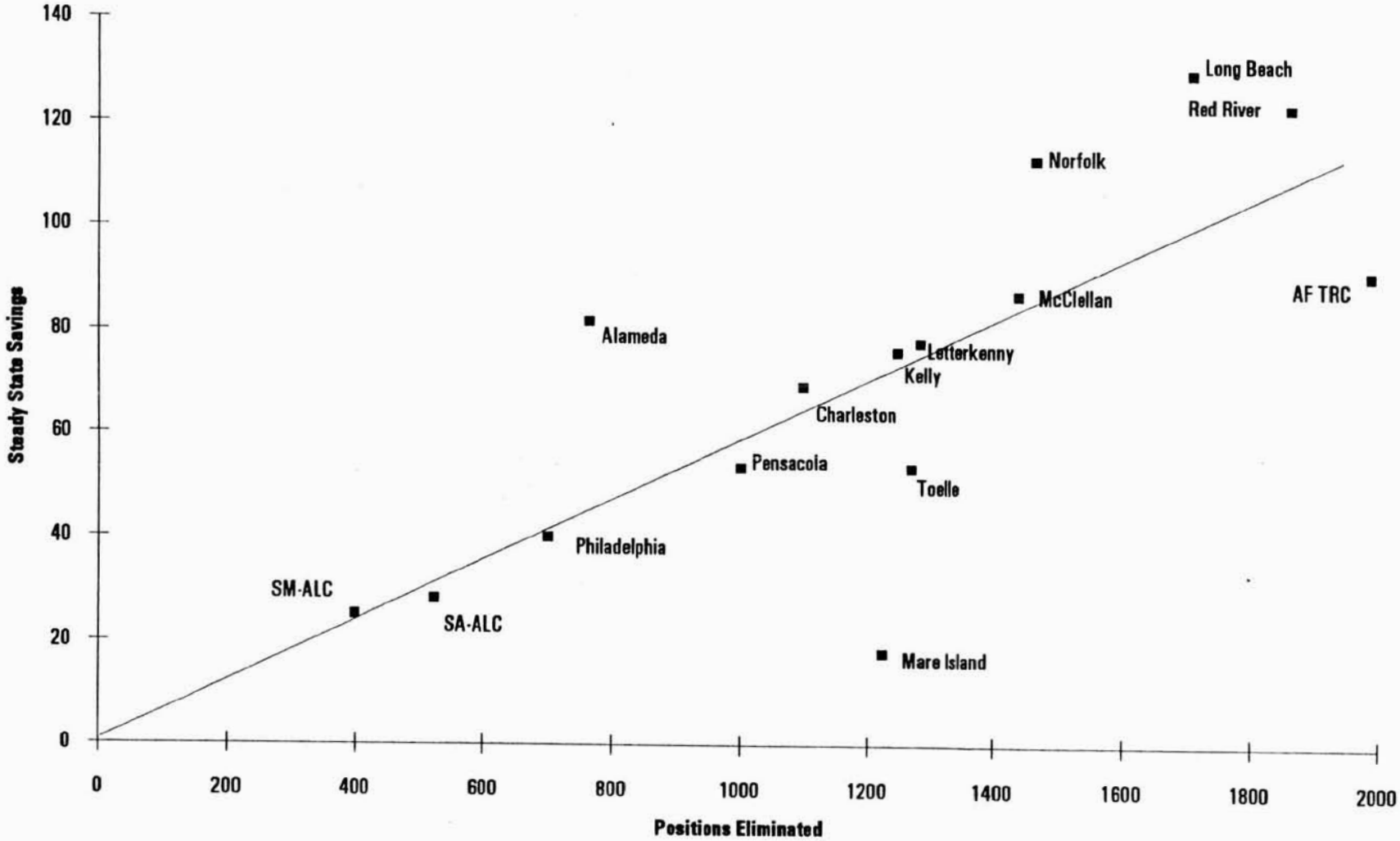


CHART 8

POSITIONS ELIMINATED VS STEADY STATE SAVINGS



AIR FORCE

1995 BRAC

PART II

AS OF 13 APRIL 1995

95 COMMISSION FINANCIAL PICTURE
CURRENT DOLLARS, MILLIONS

	COSTS FY 96 -01	SAVINGS FY 96-01	SAVINGS FY 96-15	PERCENT RETURN PER YEAR
BUDGET	1048	868	N/A	
EXCLUDING ENVIRONMENTAL	1105	1212	8616	10.8%
INCLUDING ENVIRONMENTAL	1595	1212	8616	8.8%

Should back DERA out

under budget for BRAC

Savings = cost avoided

95 COMMISSION
FY 96 - FY 01
CONSTANT YR $ MILLIONS, ~~EXCLUDES~~ ENVIRONMENTAL

	Army	Navy	Air Force	Total *
Costs	717	1,726	1,048	3,565
Savings	-1,894	-4,538	-1,092	-7,644
Net	-1,177	-2,812	-44	-4,079
Major Bases				
Closures	12	10	9	33
Realignments	12	4	10	26
Sub-total	24	14	19	59
Smaller Bases	20	30	3	59
Redirects	1	18	7	27
Totals	45	62	29	145
Avg Cost per Action	16	28	36	25

net | [illegible] closures

298

* DLA is included in total but not displayed separately

BRAC budgets include environmental

DOD COMMISSION COMPARISON
CONSTANT YR $ MILLIONS, EXCL ENVIRONMENTAL

		88	91	93	95	TOTAL
Army						
	Cost	1,288	1,206	500	717	3,711
	Savings	-721	-1,181	-151	-1,894	-3,947
	Net	567	25	349	-1,177	-236
Navy						
	Cost	285	1,945	6,163	1,726	10,119
	Savings	-335	-2,167	-4,671	-4,538	-11,711
	Net	-50	-222	1,492	-2,812	-1,592
Air Force						
	Cost	1,056	1,220	1,730	1,048	5,054
	Savings	-1,413	-2,958	-1,110	-1,092	-6,573
	Net	-357	-1,738	620	-44	-1,519

95 BRAC

CURRENT DOLLARS, MILLIONS
INCLUDES ENVIRONMENTAL

	COSTS FY 96 -01	SAVINGS FY 96-01	SAVINGS FY 96-15	PERCENT RETURN PER YEAR
BUDGET	1048	868	N/A	
NO BASE CLOSURE	0	0	0	
BRAC 95				
OSD SUBMIT	1595	1212	8616	8.80%
CLOSE 0 DEPOT	1407	870	6461	7.92%
CLOSE 1 DEPOT	2362	944	8087	2.70%
CLOSE 2 DEPOT	3353	1019	9897	3.06%

FY 96 - 01 BUDGET VS. COST COMPARISON

CURRENT DOLLARS, MILLIONS

INCLUDES ENVIRONMENTAL

	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	TOTAL	
BUDGET	94	135	300	256	163	100	1048	
BRAC 95								
OSD SUBMIT	212	380	377	277	188	161	1595	-547
CLOSE 0 DEPOT	134	328	322	277	187	160	1408	-360
CLOSE1 DEPOT	259	428	489	501	370	315	2362	-1314
CLOSE 2 DEPOT	410	533	652	720	550	487	3353	-2305

SUMMARY OF CRITERIA IV & V

CONSTANT DOLLARS, MILLIONS

EXCLUDES ENVIRONMENTAL COSTS

	TOTAL 1-TIME	20 YEAR NPV	STEADY STATE		ROI	PERSONNEL SAVINGS
1) DEPOTS						
KELLY	582	-283	76		9	1245
McCLELLAN	574	-392	87		7	1438
DUAL CLOSURE	44	51	-1		---	2683
SUBTOTAL	1200	-624	162	(0.14)		
2) PRODUCT CTRS & LABS						
KIRTLAND	277	-464	62		3	1375
BROOKS	185	-142	27		7	391
ROME	53	-98	12		4	50
SUBTOTAL	515	-704	101	(0.20)		1816
3) LARGE AIRCRAFT						
GRAND FORKS	12	-447	35		Imed	837
MALMSTROM	17	-54	5		4	0
SUBTOTAL	29	-501	40	(1.38)		837
4) SPACE						
ONIZUKA	124	-172	30	(0.24)	8	398
5) AETC						
REESE	37	-257	21	(0.57)	2	217
6) ALL OTHERS	157	-1020	81	(0.52)		835
TOTAL (with 2 Depots)	2062	-3278	435	(0.21)		6786
OSD SUBMIT	1047	-3646	363	(0.35)		6014

SUMMARY OF CRITERIA IV & V

CONSTANT DOLLARS, MILLIONS

INCLUDES ENVIRONMENTAL COSTS

	TOTAL 1-TIME	20 YEAR NPV	STEADY STATE		ROI	PERSONNEL SAVINGS
1) DEPOTS						
KELLY	882	-9	76		11	1245
McCLELLAN	874	-118	87		10	1438
DUAL CLOSURE	44	51	-1		---	2683
SUBTOTAL	1800	-76	162	(0.09)		
2) PRODUCT CTRS & LABS						
KIRTLAND	577	-190	62		6	1375
BROOKS	235	-96	27		9	391
ROME	53	-98	12		4	50
SUBTOTAL	865	-385	101	(0.12)		1816
3) LARGE AIRCRAFT						
GRAND FORKS	12	-447	35		Imed	837
MALMSTROM	17	-54	5		4	0
SUBTOTAL	29	-501	40	(1.38)		837
4) SPACE						
ONIZUKA	174	-126	30	(0.17)	10	398
5) AETC						
REESE	87	-211	21	(0.24)	4	217
6) ALL OTHERS	157	-1020	81	(0.52)		835
TOTAL (with 2 Depots)	3112	-2320	435	(0.14)		6786
OSD SUBMIT	1497	-3235	363	(0.24)		6014

Document Separator

Bivins, Bob

From: Bivins, Bob
To: Lyles, David
Subject: RE: Air Force depots
Date: Thursday, April 20, 1995 8:16PM

Sir,

The 1993 decision COBRA for McClellan shows a One-Time Cost of $427.5 M compared to $574.5 M for this round. The Return on Investment changes from 2 years for 1993 to 7 years for 1995. The Net Present Value changes from $423.1 M in 1993 to $392.5 M in 1995 (plus there is a large difference in the discount rate (7% to 2.75%). Roughly at this round's discount rate, the 1993 NPV would be $755.4 M. In 1993 the personnel reductions are taken in the 4th year as opposed to the 6th year in 1995 and the personnel realignments are spread out in years 3 through 6 as opposed to years 1 through 6. The following table summarizes these findings. The biggest difference in the two rounds is MilCon. 1993 showed a net savings of $16.2 M while 1995 shows a cost of $97.5 M. This difference explains why the closure is affordable in 1993 but not in 1995. Personally I think the 1993 estimate is too low and the 1995 estimate is too high.

McClellan AFB Full Closure

	1993	1995
1-Time Cost	427.5 M	574.5 M
ROI	2 years	7 years
NPV	423.1 M	392.5 M
Net MilCon	-16.2 M	97.5 M
Reductions	4th year	6th year
Realignments	3 thru 6	1 thru 6
Pers Eliminated	964	1438
Pers Total	11312	12588
% Eliminated	8.5%	11.4%

>From: Lyles, David
>To: Bivins, Bob
>Subject: RE: Air Force depots
>Date: Thursday, April 20, 1995 2:19PM
>
>Bob, I am replying from New Mexico. Take a look at the decision
>CORBA for the 1993 round which lead the Air Force to conclude
>that closing Sacramento was cost-effective. If you don't have
>the Beeh slides by now, you haven't missed much, but I will
>give them to you when I get back tomorrow.
> ---
> >From: Bivins, Bob
> >To: Lyles, David
> >Subject: RE: Air Force depots
> >Date: Tuesday, April 18, 1995 5:13PM
> >
> >Sir,
> >
> >The Air Force "full closure" COBRA for McClellan (what we call
> >the SecAF decision COBRA) has the following assumptions:
> >
> >a) 1,438 positions of 12,588 eliminated which is 11% vice 7% for Kelly.
> >b) eliminations occur in year 6 (2001) just like in the Kelly full closure COBRA.
> >c) realignments occur throughout the 6 year period in similar
> >percentages as Kelly (5%,12.5%,25%,30%,25%,5%).
> >
> >By the way, I haven't seen Mr. Beach's slides yet and I've
> >checked my box several times. Did they just go to the Cross

Bivins, Bob

From: Bivins, Bob
To: Lyles, David
Subject: RE: Air Force depots
Date: Tuesday, April 18, 1995 5:13PM

Sir,

The Air Force "full closure" COBRA for McClellan (what we call the SecAF decision COBRA) has the following assumptions:

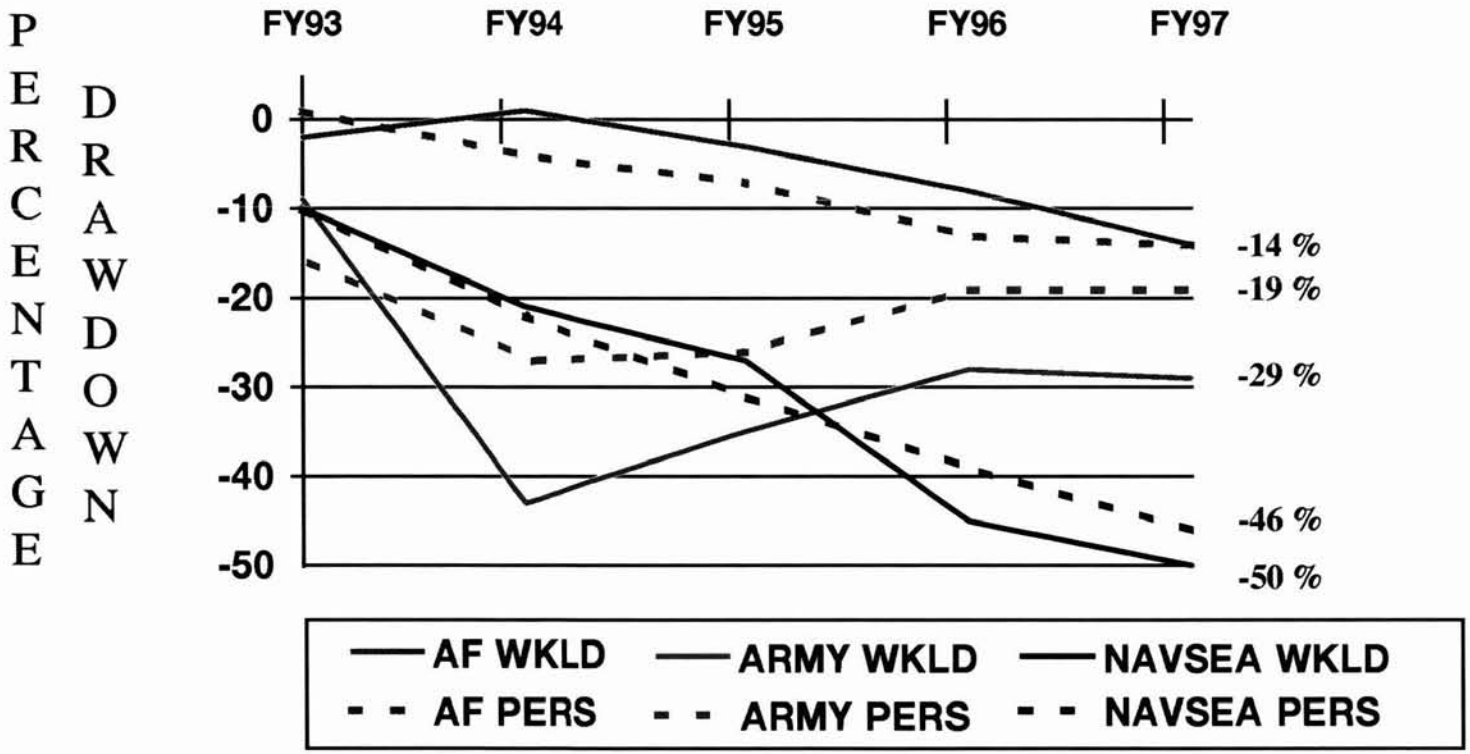
a) 1,438 positions of 12,588 eliminated which is 11% vice 7% for Kelly.
b) eliminations occur in year 6 (2001) just like in the Kelly full closure COBRA.
c) realignments occur throughout the 6 year period in similar percentages as Kelly (5%,12.5%,25%,30%,25%,5%).

By the way, I haven't seen Mr. Beach's slides yet and I've checked my box several times. Did they just go to the Cross Service Team or was one suppose to go to the Interagency Team also?

>From: Lyles, David
>To: Bivins, Bob; Reese, Ann
>Cc: Borden, Ben; Cirillo, Frank; Owsley, James L.
>Subject: Air Force depots
>Date: Tuesday, April 18, 1995 8:27AM
>
>What assumptions did the Air Force use in their 1994 COBRA
>concerning the closure of McClellan a far as positions
>eliminated, timing of closure and pahsing of closure?
>Also, Beech sent two more slides this morning to go along with
>the ones he sent yesterday. The whole package should be in your
>boxes shortly.

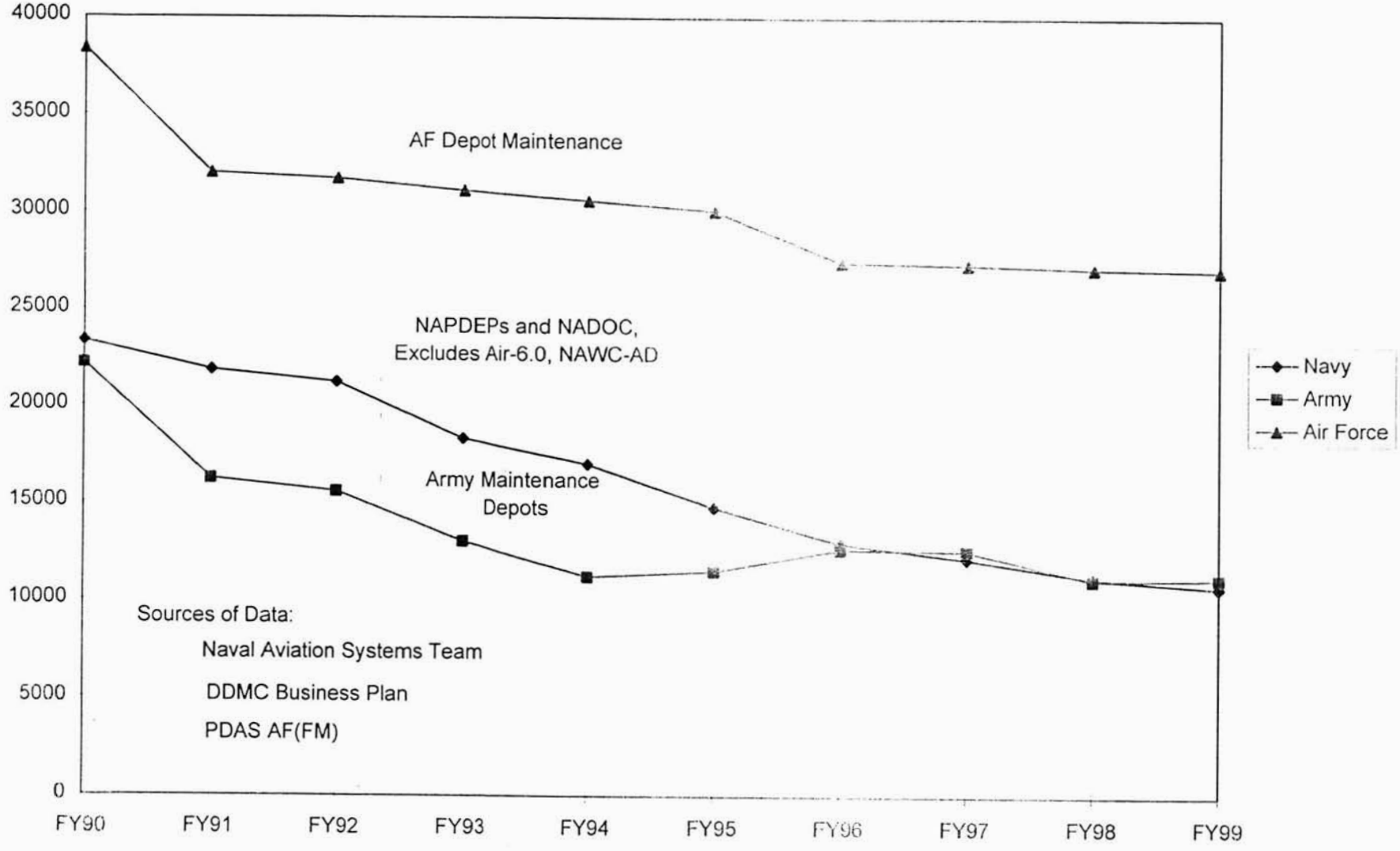
COMPARISON - WORKLOAD AND PERSONNEL DRAWDOWN

(BASELINE FY1992)

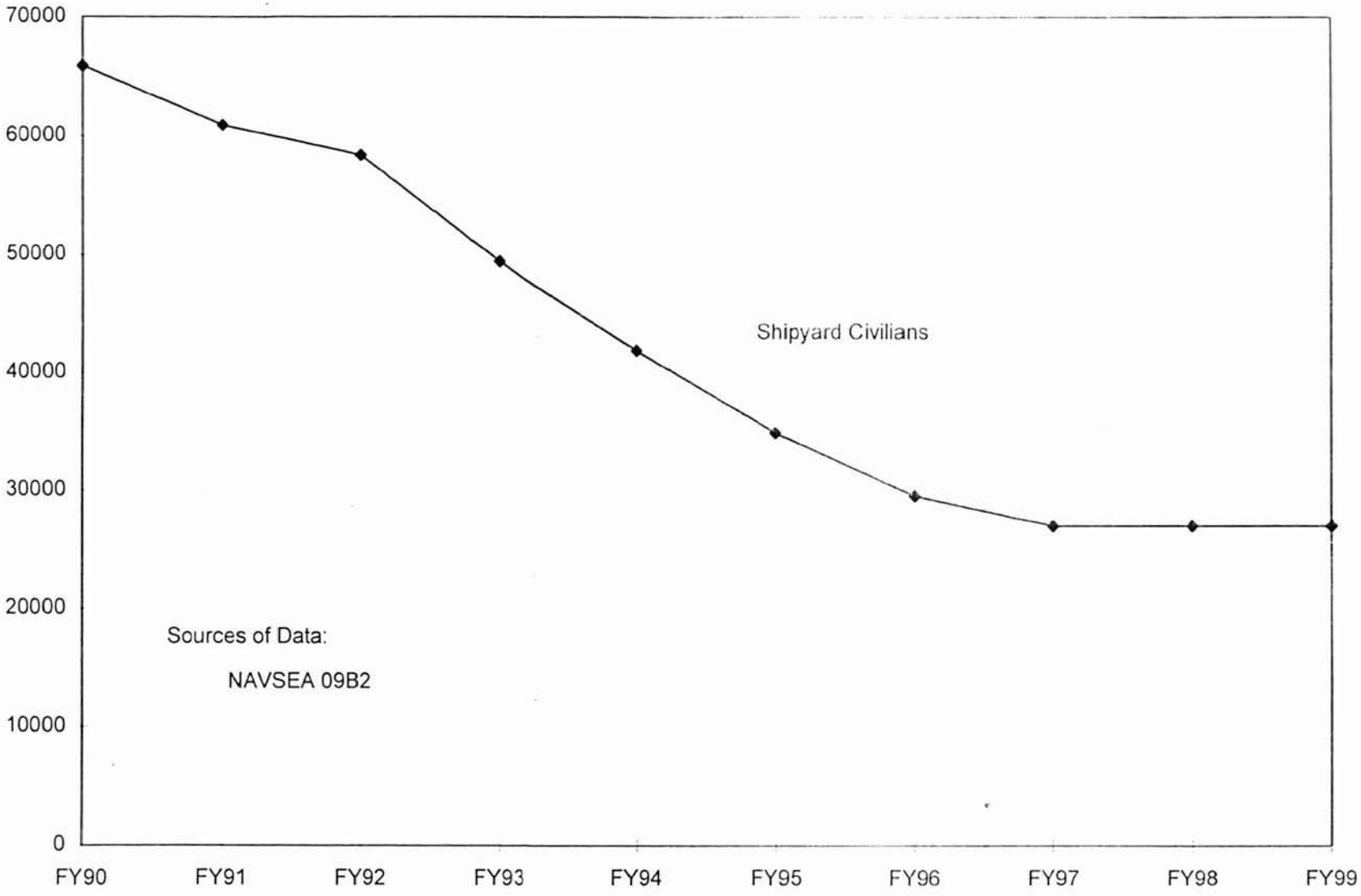


Sources:
1. FY 92-93 Workload - DDMC Corporate Business Plan (1992-1997);
   FY 94-97 Workload - DDMC Business Plan (1995-1999)
2. Personnel - DDMC Business Plan (1995-1999)

Depot Maintenance Personnel



Naval Shipyard Maintenance Personnel



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