WHITE SANDS ELECTRONIC PROVING GROUND

DCN 541

FACILITY	TOTAL % T&E	AIR VEH	EC	A/W	OTH
RANGE OPERATIONS (MP) see EC 010/012	80 multi-facilities - (MP) ~~TSTF OAR~~	~~30~~ → 30	~~30~~ DRS → 27	~~15~~ DRS ~~30~~ → 0	~~5~~ → 51
ENVIRONMENTAL TEST (MP) EC 015	95 ~~TMS~~ (MP)	21 → 20	70	0	5
INSTRUMENTED TEST RNG (MP) EC 008/016	90 (MP) ~~OAR~~	~~30~~ → 24	~~30~~ → 32	~~14~~ → 0	~~20~~ → 40
ELECTROMAGNETIC ENVIRONMENTAL TEST (MP) EC 001/003	50 not classified (DMS)	21	~~41~~ 29	~~7~~ 0	~~0~~ 37
EMI / TEMPEST (MP) EC 014	80 DMS - ~~wrong~~ ? (MP)	5	10	Ø	65
INTELLIGENCE & ELECTRONIC WARFARE (MP) EC 013	100 not classified	Ø	89.8	Ø	10.2
AVIONICS GPS	85	10	Ø	Ø	75
GENERAL ELECTRONIC TEST	100	1	5	1	93

also inconsist. cap = N/A !! support personnel only

Robert S. Lee 8/12/94

8/12/94 8/15/94

Donald R. Jenkins 8/12/94

Note - some pages repunched (to correct orientation) after red numbers added. Therefore these will be in upper area. D Pucklard

White Sands Missile Range
BRAC 95 #7 RDTE Data Call

03 June 1994

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Per Errata Sheet #1 of 10

(EPG)

FACILITY/CAPABILITY: WSMR / RANGE OPS

TEST FACILITY CATEGORY: MF / ISTF / OAR ?

% T&E - OVERALL: 80

AV: 30

EC: ~~15~~ 30

A/W: ~~30~~ / 15

OTHER 5

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5): _____ ? SOME ARE TRAINING

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92 5295 /	FY93 3153 /
EC:	FY92 1878 /	FY93 2764 /
A/W:	FY92 364 /	FY93 0

THESE ARE "DIRECT LABOR HOURS", NOT "TEST HOURS"?

INCONSISTENT e.g. A/W WAS ZERO FOR EVERY YEAR EXCEPT FY92 AND EVEN IN FY92 WAS NOT 15% OF HOURS.

FACILITY/CAPABILITY: WHITE SANDS (EPG) / ENVIRONMENTAL TEST FACILITY

TEST FACILITY CATEGORY: DMS/MF ?

% T&E - OVERALL: 95

AV: 20

EC: 70

A/W: Ø

OTHER 5

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5): ?

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92 619 /	FY93 647 /
EC:	FY92 337 /	FY93 1802 /
A/W:	FY92 Ø	FY93 Ø

'DIRECT LABOR HOURS'

FACILITY/CAPABILITY: WSMR EPG / INSTRUMENTED TEST RANGE

TEST FACILITY CATEGORY: MF / OAR ?

% T&E - OVERALL: 90

AV: 30

EC: 30

A/W: 10

OTHER 20

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5):

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92 104224	FY93 24832
EC:	FY92 258105	FY93 54423
A/W:	FY92 2814	FY93 1565

DIRECT LABOR HOURS

FACILITY/CAPABILITY: WSMR EPG / ELECTROMAGNETIC ENVIRONMENTAL TEST FACILITY

TEST FACILITY CATEGORY: NOT STATED

% T&E - OVERALL: 50

AV: 2

EC: 41

A/W: 7

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5): _____

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92	2887 /	FY93	123 /
EC:	FY92	8094 /	FY93	15171 /
A/W:	FY92	Ø	FY93	Ø

DISCONNECT

DIRECT LABOR HOURS

FACILITY/CAPABILITY: WSMR EPG / EMI / TEMPEST

TEST FACILITY CATEGORY: DMS

% T&E - OVERALL: 80

AV: 5

EC: 10

A/W: Ø

OTHER 65

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5): 5

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92	627 /	FY93	417 /
EC:	FY92	2339 /	FY93	2672 /
A/W:	FY92	10947 /	FY93	8184 /

DISCONNECT

Direct Labor Hours

FACILITY/CAPABILITY: WSMR EPG / INTELLIGENCE & ELECTRONIC WARFARE

TEST FACILITY CATEGORY: NOT A FACILITY

% T&E - OVERALL: 100

AV: Ø

EC: 89.8

A/W: Ø

OTHER 10.2

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5): ?

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92	FY93
EC:	FY92 22818	FY93 17218
A/W:	FY92	FY93

DIRECT LABOR HOURS

FACILITY/CAPABILITY: WSMR EPG / AVIONICS GPS

TEST FACILITY CATEGORY: NOT STATED

% T&E - OVERALL: 85

AV: 10

EC: Ø

A/W: Ø

OTHER 75

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5): 14.4

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92 2254	FY93 1466
EC:	FY92 Ø	FY93 Ø
A/W:	FY92 Ø	FY93 Ø

Direct Labor Hours

FACILITY/CAPABILITY: WSMR EPG / GENERAL ELECTRONIC TEST

TEST FACILITY CATEGORY: DMO, MF, MIL, ISTS, OAR ?

% T&E - OVERALL: 100

AV: 1

EC: 5

A/W: 1

OTHER 93

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5): 69

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92 76796	FY93 4912
EC:	FY92 81934	FY93 30370
A/W:	FY92 2499	FY93 3147
OTHER	≈ 448000	≈ 556000

DISCONNECT FOR AVERAGE OF 92+93

DIRECT LABOR HOURS

Document Separator

White Sands Missile Range
BRAC 95 R&D Data Call #7
(US Army Electronic Proving Ground)

PART V-1: Data Submission

R&D FACILITY / CAPABILITY TITLE:

RANGE OPERATIONS CAPABILITY

SECTION 1: GUIDANCE, STANDARDS & ASSUMPTIONS

This section not provided. Please refer to the original guidance and data call for this information.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

2.1 WORKLOAD

2.1.A Historical Workload

2.1.A.1 Use the Historical Workload Form (FORM5-0 and FORM5-1). See enclosure 1.

2.1.B Forecasted Workload

2.1.B.1 Identify all appropriations (by program element) that generated testing or test support requirement, or are expected to generate such a requirement for FY92, FY93, and each year of the FY95 FYDP. See enclosure 2, pages 1 to 14; data are provided as (1) USAEPG rollup and (2) five functional areas.

2.1.B.2 Provide the amount of test work performed at your facility in FY92 and FY93. Break this out by workyears across the functional descriptors. See enclosure 2, page 15.

2.2 UNCONSTRAINED CAPACITY

2.2.A Use the Unconstrained Capacity Form (FORM6). See enclosure 1.

2.2.B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

Capacity is limited by availability of physical facilities.

2.3 TECHNICAL RESOURCES

2.3.A Does the facility have a specified war-time or contingency role established in approved war plans?

No.

2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

USAEPG would lose a major portion of their ability to perform its T&E mission to support materiel acquisition and fielding decisions.

2.3.B.1 On the test mission of any other activity?

USAEPG provides test support to all PMs, PEOs, and independent technical evaluations of electronic system on subsystems. Their mission would be degraded to the extent that test results and analysis would no longer be available to support acquisition and fielding decisions.

2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

As the prime tester of tactical equipment, USAEPG has an impact on the operational effectiveness of the Armed Forces.

SECTION 3: MEASURES OF MERIT

3.1 OVER-ARCHING MEASURES OF MERIT

3.1.A Interconnectivity

3.1.A.1 What percentage of the total test workload of this facility in FY93 involved the real-time or near real-time exchange of data or control with another facility? List the facilities you interconnect to for tests and identify how many are simultaneous activities. Identify these as to whether they are internal or external to the site.

None.

3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected. If yes, explain.

No.

3.1.B Facility Condition

3.1.B.1 Use the Facility Condition Form (FORM4). See enclosure 1.

3.1.C Environmental and Encroachment Carrying Capacity

3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility? If yes, explain.

No. Of the one-thousand, one-hundred and seventy-two (1,172) surveyed test sites that EPG has, only three (3) test sites are declared restricted use for daytime operations due to bat-related restriction periods from July 1 through September 30 of each year. The restricted use test sites are East 1 and 2, and West 1. During this time-frame, the lesser long-nosed (Leptonycteris curasoae yerbaabuenae) bats migrate to these particular sites to feed on the nectar from the flowers of the dense Agave stands. West 1 is restricted because of the proximity to a roosting site. This restriction is considered minor impact to testing.

3.1.C.2 How much could workload be increased before this limit would be reached? Express you answer as a percentage of your current workload.

Workload can be increased to 100% local testing in Fort Huachuca. My estimate is based on communications-electronic, unmanned aerial vehicle (UAV), and laboratory type (e.g. computer simulation, environmental, and reliability) testing. As an example, abatement procedures are in place for night testing/operations of UAVs during July 1 to September 30.

3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire, and describe them.

Yes. There are two voluntary agreements. These are with:

(1) The U.S. Fish and Wildlife Service to protect roost sites and forage habitat for the lessor long-nosed bat. There is no expiration date for this agreement.

(2) The Arizona Archeological Society to perform investigation/archeological studies conducted by surveys, excavations and mitigation of possible historical and/or archeological importance. There is no expiration date for this agreement.

3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

a. State population was considered and not international population. Due to the location of Fort Huachuca, if we take a 50 miles radius, with Fort Huachuca being the center of the circumference, the southern-most portion of the circumference falls into international lines (Republic of Mexico).

b. The total population within a 50 miles radius is 97,624. The 50 miles radius encompasses the counties of Cochise, portions of Pima, and Santa Cruz.

c. The total population within a 100 miles radius is approximately 577,500. The 100 miles radius encompasses the counties of Cochise and portions of Pima, and Santa Cruz.

d. The total population within a 150 miles radius is 820,734. The 150 miles radius encompasses the counties of Cochise and Pima, Graham, and, Pinal.

e. The total population within a 200 miles radius is 2,942,835. The 200 miles radius encompasses the counties of Cochise, Santa Cruz, Pima, Graham, Pinal, Gila, and portions of Maricopa.

f. Cochise County consists of the following populated areas: Benson, Bisbee, Bowie, Cochise, Douglas, Dragoon, Elfrida, Hereford, Huachuca City, McNiel, Naco, Pearce, Pirtleville, Pomerene, Saint David, San Simon, Sierra Vista, Tombstone, and Willcox. Fort Huachuca was annexed by Sierra Vista in 1971.

g. Graham County consists of the following populated areas: Bylas, Central, Fort Thomas, Pima, Safford, Soloman, and Thatcher.

h. Maricopa County (only those that fell into the radius of consideration) consists of the following populated areas: Arlington, Avondale, Buckeye, Cashion, Chandler, El Mirage, Gila Bend, Gilbert, Glendale, Mesa, Phoenix, Scottsdale, and Tempe.

i. Pima County consists of the following populated areas: Ajo, Arivaca, Cortaro, Green Valley, Lukeville, Marana, Mount Lemon, Rillito, Sahuarito, Sasabe, Sells, Topawa, and Tucson.

j. Pinal County consists of Casa Grande, Coolidge, Eloy, Florence, Kearny, Mammoth, Maricopa, Oracle, Picacho, Red Rock,
Sacaton, San Manuel, Stanfield, Superior, and Valley Farms.

k. Santa Cruz County consists of the following populated areas: Elgin, Nogales, Patagonia, Sonoita, and Tumacacori.

3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and the frequency of use for each that affect of could affect mission accomplishment in your air, land, or sea space.

a. Commercial air travel is available from Fort Huachuca to Phoenix.

b. Arizona Highway 90 feeds Fort Huachuca from the north, where it originates from Interstate 10, 30 miles away. This is the major route leading into the reservation.

c. Arizona Highway 92 originates at the Fort Huachuca east gate and proceeds east and then south around the northern and eastern boundaries of the City of Sierra Vista.

d. Fry Boulevard, the main street of Sierra Vista, originates at the Fort Huachuca main gate and proceeds due east through the heart of the city.

SENSITIVE/CLOSE HOLD

Errata Sheet # 4 of 10

1. This Errata Sheet applies to the following EPG R&D Faciilty/Capability Data Submissions:

Range Operations Capabilities
Environmental Test Facility
Instrumented Test Range
Electromagnetic Environmental Test Facility
EMI/TEMPEST Test Capabilities
Intelligence & Electronic Warfare
Avionics/ Global Positioning System
General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.1.d.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

.
.
.

c. Black Tower Complex. The Black Tower Complex is dedicated for the use of all UAV testing and training on Fort Huachuca. This complex is composed of 3 hangars, parachute tower, hazardous material storage facility, explosive storage bunker, 2 runways (1 *dirt runway 220' x 2000' (as of Jul 94)*, and a paved runway, 75' x 3000'). In addition, the following are available to UAV testing: frequency coordination, precision tracking, area surveillance, real-time and post-test digital data, communications and timing, photographic and video support, optical/infrared targets, and radar/communications threat environment.

.
.
several sections skipped
.
.

3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes. explain.

a. Yes. The platform is being completely rebuilt and should increase its capacity. The west turntable will be going through a major rehabilitation.

b. *The UAV dirt runway expansion to 2,000 feet will be complete in July of 1994.*

e. Buffalo Soldier Trail also originates at the Fort Huachuca main gate, proceeds south and then east around the southern boundary of the city.

f. Garden Avenue runs north and south and connects Fort Huachuca's main and east gates.

g. A dirt road originates at Fort Huachuca's west gate and proceeds west into the Coronado National Forest.

h. The commercial use of Restricted Areas R-2303A and R-2303B has negligible impact on the testing that EPG conducts. The ingress/egress of commercial traffic to Sierra Vista Airport is deconflicted by coordination with Libby Tower.

3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

None.

3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

None.

3.1.D **Specialized Test Support Facilities and Targets**

see prev page

3.1.D.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe. Yes.

a. Antenna Test Facility. The Antenna Test Facility (ATF) is used to characterize antennas while in place on various military land vehicles and aircraft. The facility is used to determine radiation patterns from both mounted and unmounted antennas, and consist of an Arc Range and an Outdoor Compact Range. The Arc Range utilizes a vertically mounted, 23 meter radius arc with a nine meter diameter horizontal turntable below its focal point. The Arc Range covers the frequency range of 25 MHz to 18 GHz and is constructed of non-metallic materials, with the exception of some RF components and the turntable. The turntable has a capacity of 60 tons. A wooden test item rack that can be used to position test items up to the focal point of the elevation arc has a capacity of 15 tons. An additional 30 foot diameter turntable is located 305 meters east of the Arc Range turntable. Midway between the Arc turntable and the East turntable is a 35 meter tall Red tower, constructed of non-metallic materials, and has equipment platforms every eight meters. Antennas can be positioned to look at test items on either the Arc turntable or the east turntable. The east turntable and red tower provide additional RF signal and test item positioning capabilities. Tests requiring precise far-field measurements at higher microwave frequencies are conducted on the Compact Range. This test range, covering the frequency range of 5 to 40 GHz, is believed to be the largest facility of its kind in the world. The Compact Range is able to test antennas and RF signal processing systems of large ground vehicles or aircraft, and can move test items up to 70 tons and up to 50 feet in size from -1 to +91 degrees in

elevation and continuously in azimuth, and is capable of handling any ground vehicle in the Armed Forces inventory.

b. Meteorological Support Branch. The Meteorological Support Branch provides the latest in full meteorological services. These services include upper air rawinsonde data, tethersonde data, and the full complement of surface meteorological data, available from the automated meteorological data network, with sites located at all major outdoor test sites and all UAV runway locations. Specialized data services such as the measurement of atmospheric scintillation and aerosol density and model computations of the atmospheric transmissivity of laser energy are also available. Forecast services include both general planning forecasts, as well as specialized forecasts tailored to specific test requirements. Range advisories are issued for weather conditions that could have adverse effects upon test operations or results of which could pose a hazard to personnel or equipment. Such conditions include, but are not limited to, thunderstorms within the range boundaries, surface winds equal to or in excess of 30 knots, and lightning, which is the major weather hazard at Fort Huachuca. Advisories can also be issued for project specific criteria. Solar and Geophysical Forecasts, advisories, and data summaries of Solar and Geophysical activity that can adversely affect test operations and results are also provided by the Branch. Forecasts and advisories of such are also listed in the EPG GPS Range Instrumentation System (EGRIS) Bulletin Board for users of the GPS Range Timing and/or Positioning System.

c. Black Tower Complex. The Black Tower Complex is dedicated for the use of all UAV testing and training on Fort Huachuca. This complex is composed of 3 hangars, parachute tower, hazardous material storage facility, explosive storage bunker, 2 runways (1 dirt runway 0' x 2000', and a paved runway, 75' x 3000'). In addition, the following are available to UAV testing: frequency coordination, precision tracking, area surveillance, real-time and post-test digital data, communications and timing, photographic and video support, optical and infrared targets, and radar and communications threat environment.

3.1.D.2 Are specialized targets required to support this facility, If yes, explain.

No.

3.1.D.2.A Have the specialized targets been validated? If yes, by whom?

3.1.E **Expandability**

3.1.E.1 Other than the expandability inherent in the unconstrained capacity (FORM 6) discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? If yes, explain.

Antenna Test Facility. Three separate test projects can be run at the same time. One project can use the Compact Range, another on the Arc Range, and a third on the east turntable and red tower.

3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? If yes, identify by T&E functional area and test type.

No.

3.1.E.2 Are the airspace, land, and water areas adjacent to areas under DoD control available and/or suitable for physical expansion to support new missions or increased footprints. If yes, explain.

Generally, surrounding non-DoD properties are either privately owned, National Forest, Park Service, or Bureau of Land Management managed. Use of some of these lands can be negotiated for certain types of tests.

3.1.E.3 Is the facility equipped to support secure operations. If yes, to what level of Classification (Confidential -> Special Access)?

Yes, up to and including SAR.

3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes, explain. see prev page @ 3.1.D.1

a. Yes. The platform is being completely rebuilt and should increase its capacity. The west turntable will be going through a major rehabilitation.

b. The UAV dirt runway is currently being expanded to 2,000 feet.

3.1.F **Uniqueness**

3.1.F.1 Is this a one-of-a-kind facility within the DoD? If yes, explain.

No.

3.1.F.1.A Within the U.S. Government? If yes, explain

No.

3.1.F.1.B Within the U.S? If yes, explain.

No.

3.1.F.2 Are you currently providing support to DoD users outside your Military Department? If yes, indicate the percentage of total workload in FY92 and FY93 by Military Department.

Yes.	FY92	FY93
NAVY	.7%	.1%
MARINE CORPS	.4%	1.6%
AIR FORCE	1.4%	2.9%
	2.5%	4.6%

3.1.G **Available Air, Land, and Sea Space**

3.1.G.1 How many square miles of air, land, and sea space are available to support test operations?

On the reservation, 122 square miles (78,000 acres) of real estate are available to support testing. An additional 45 square miles (29,000 acres) of land are leased from federal, state, and local agencies throughout southern Arizona, from the New Mexico to California state lines. Also available on an as-needed basis are 39,000 square miles (25 million acres) of land obtainable from the Bureau of Land Management (BLM) through negotiation and a Memorandum of Agreement. In addition to the local airspace, 891.5 square miles, Military Operations Areas to the west have been used in the past to support tests. Use of these areas, in excess of 1,800 square miles, require coordination with several other agencies.

3.1.G.2 Who owns or controls the land under the Restricted Airspace you use?

The Ft. Huachuca military reservation is comprised of 122 square miles (78,000 acres) of real estate. The remaining real estate available to support testing is leased from federal, state, and local agencies.

3.1.G.3 How much of this (total air space available to support operations) is Restricted Airspace, and what altitude limits are associated with the restricted areas?

The restricted area R-2303A, 261.9 square miles, is within the boundaries of R-2303B which is 891.5 square miles. R-2303A altitude limits are surface to 15,000 ft MSL and R-2303B is 15,000 to 45,000 ft MSL.

3.1.G.4 Do you have special use airspace other than supersonic airspace? If yes, for what types of tests? What are its dimensions? Will it support simultaneous users?

Yes. Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.1.G.5 Is the airspace over land or water. List the number of square miles over each.

All over land -- 891.5 square miles.

3.1.G.6 Identify known or projected airspace problems that may prevent accomplishing your mission.

No known or projected problems.

3.1.G.7 What is the maximum straight line segment in your airspace in nautical miles?

52.6 nautical miles.

3.1.G.8 What public airspace have you used for overflight of weapons systems in the past? What was the nature of those tests? Do you anticipate being able to use that same public airspace for similar tests in the future? Yes or no to each.

Two public airspace corridors, V-393 and V-395 between Tucson and Nogales, AZ, have been used in the past. The Unmanned Aerial Vehicle Short Range crossed those corridors and operated in the MOAs to the west during the maximum range test. Yes.

3.1.H **Geographic/Climatological Features**

3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap of the earth). Identify all of the following that apply: mountains, forest, jungle, cultivated lowland, swamp, riverine, desert, and sea. State the area of each in square miles.

a. The Fort Huachuca military reservation is geographically located in the inter-mountain desert plateau region between the souther most extent of the Rocky mountains and the northern most extent of the Sierra Madres. The area of land is covered by the installation is 115 square miles. The elevation varies from 3,925 feet to 7,709 feet above sea level wit 30% of the area located in rugged mountainous terrain. The remaining terrain is typified by rolling hills gradually flattening away from the mountains. Vegetation in the area is lower elevations. Above 5000 feet Black Oak and Juniper are common and above 6500 feet yellow pine is predominate.

b. The word "Huachuca" means "Place that Thunders" and from June to September, Fort Huachuca lives up to its name, 85 to 99 percent of the annual lightening activity occurs during this time. Activity can range from isolated mountain thundershowers to powerful Mesoscale Convective Complexes. Thunderstorms are DANGEROUS, due to the potential for lightning strikes, range and forest fires, strong winds, hail, heavy precipitation and flash flooding.

c. Precipitation in the area varies dramatically from season to season and from year to year. The average annual precipitation from 1956 to present is 14.91 inches. Measurable precipitation can occur during every month of the year, but is most likely to occur in July

010

and August. 50 to 75 percent of the annual precipitation recorded typically falls during these two months. From November to late April, depending on the temperature, snow showers can occur with accumulations frequent above 5000 feet.

d. Wind direction and speed are greatly influenced by seasonal, diurnal and orographic effects. Typically winds in the morning are from the southeast at 5 to 10 knots shifting to the southwest at 8 to 16 with occasional gusts to 24 knots. During the fall, winter, and spring strong wind events with winds from the south to southwest at 20 to 30 with gusts in excess of 50 knots and a duration of several hours to several days can occur 10 to 25 percent of the time. During the summer strong down burst winds associated with the thunderstorms with instantaneous gusts in excess of 60 knots can occur with little warning.

e. Temperatures in the local area are moderate with the extremes ranging from a high of 107 to a low of 9 degrees. Average summertime temperatures range from highs in the upper eighties to lows in the mid-sixties. Average wintertime temperatures range from highs in the low sixties to lows in the mid thirties. The average temperature for the year is 62 degrees.

f. Fort Huachuca is an excellent location for a wide variety of test activities with environmental considerations. Most of the moderate to severe weather conditions discussed above are of relatively short duration, and with proper planning, mission delays can be held to a minimum all year round.

3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of tests?

No.

3.1.H.3 Do you have to go to other geographical locations to satisfy test requirements? If yes, explain. If yes, provide as a percent of overall workload per year for the last 8 years.

No.

3.1.H.4 Number of days per year with average temperature below 32 degrees F? Between 32 and 95 degrees F? Above 95 degrees F?

All 365 days in an average year have a daily average temperature between 32 and 95 degrees fahrenheit. During the entire 35 year period covered by our climatological database, approximately 10 days had daily averages below 32 degrees which equates to one such day every 3-4 years. The highest daily average temperature during the same period has been 90 degrees which occurs only once or twice each year. The hottest weather at this location is accompanied by low relative humidity which results in good night times cooling after a hot day.

3.1.H.5. Number of days per year with average relative humidity below 30%? Between 30 and 80%? Above 80%

The average number of days per year with an average relative humidity below 30% is 150. Humidity can occasionally fall below 10% during these days. An average of 194 days per year have average relative humidities between 30% and 80%. Finally, 21 days per year, on average, have an average relative humidity above 80%.

3.1.H.6 Number of test missions per year (85 - 93) canceled due to weather?

Most weather related test mission cancellations are the result of weather conditions at locations other than Fort Huachuca. During the period of review, 24 missions (mostly UAV missions) were canceled due to adverse weather conditions. Generally, most projects will go into a hold until the adverse conditions subside or they can be scheduled around expected adverse weather conditions without having to cancel.

3.1.H.7 Number of test days per year (85 - 93) canceled due to weather?

During the period of review, there have been no full 24 hour days during which testing could not be conducted due to adverse weather conditions. Local forecasting capability exists that allows weather sensitive test operations to be scheduled around periods of expected adverse weather conditions.

3.1.H.8 Number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

Based upon the 35 year climatological database, there are no full 24 hour periods during which the visibility drops below 3 miles. Restricted visibility occurs most often during periods of showery types of precipitation which occur primarily during the winter and summer rainy seasons. Occurrences of fog occur primarily during the winter and are of short duration. Based upon climatology, 2.3% or 197.6 hours has visibility below 3 miles in an average year. This equates to a total of 8.2 days. Visibility of 1-3 miles occurs, on average, a total of 109.6 hours while visibility less than one mile occurs a total of 88.1 hours a year or about 1% of the time on average. December is the month with the highest number of occurrences with 29.8 hours with visibility of 1-3 miles and 14.9 hours with visibility below 1 mile on average. Visibility below 3 miles has never been reported in June.

3.1.H.9 What is the average number of flying days available per year for flight tests? Provide historical average from the past eight years.

The average number of flying days available per year based solely upon weather conditions during the period of review is 353. This equates to 96.7% of all days in a year being available. The primary weather condition that may make a day unavailable is strong wind since all other adverse weather conditions are intermittent in nature.

3.1.H.10 What percentage of the time are your test operations restricted due to weather?

Weather conditions that restrict test operations are high winds, thunderstorms, and low visibility. High winds occur, on average, 10% of all days of the year and last about 8

hours per day for 3.3% of the total number of hours in a year. Thunderstorms occur on 60 days a year with an average duration of 2 hours for 1.4% of the hours in a year. Low visibility, as indicated above, occur 2.3% of the total number of hours in a year. This gives a total of 7% of all hours in a year where test operations would be restricted by weather. Heavy show is very rare occurring much less the time in a given year.

3.2 AIR VEHICLES

3.2.A Supersonic Airspace

3.2.A.1 Do Supersonic Corridors or areas exist?

Yes. Two low level, high speed jet visual route VR-260 and VR-263.

3.2.A.2 Where are they located relative to the airfield?

VR-260 is located to the north and cuts across the north west corner of R-2303B below the airspace floor. VR-263 is located to the south and cuts across the south east and south west corners of R-2303B below the airspace floor.

3.2.A.3 At what altitude (upper and lower altitude)?

VR-260 is 100 ft AGL to 7000 ft AGL and VR-263 is 100 ft AGL to 8500 ft MSL.

3.2.A.4 Are they over land or water? What size and shape (length and width)?

All over land. Visual flight routes only.

3.2.A.5 Are there restrictions you must observe to use this space? If yes, explain.

Unknown.

3.2.A.6 What is the maximum number of simultaneous users? see prev page

3.2.B Airfield and Facility Characteristics

3.2.B.1 Provide a brief description of your airfield and support facilities. see prev page

Libby Army Airfield is a Joint Use Airfield and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be al concrete when completed and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and does not belong to the Proving Ground.

SENSITIVE/CLOSE HOLD

Errata Sheet # 5 of 10

1. This Errata Sheet applies to the following EPG R&D Facility/Capability Data Submission:

   Range Operations Capabilities
   Environmental Test Facility
   Instrumented Test Range
   Enectromagnetic Environmental Test Facility
   EMI/TEMPEST Test Capabilities
   Intelligence & Electronic Warfare
   Avionics/Global Positioning Systems
   General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.2.A.6 What is the maximum number of simultaneous users?

Number of simultaneous users is limited by USAF or other military department rules on supersonic flight in restricted corridors. No specific limitation on the number of simultaneous users is available to EPG.

3.2.B **Airfield and Facility Characteristics**

3.2.B.1 Provide a brief description of your airfield and support facilities.

Libby Army Airfield is a Joint Use Airfield *owned by Ft. Huachuca (TRADOC)* and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be all concrete when completed (FY95) and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and belongs to Ft. Huachuca.

3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

Hubbard assault strip is 5 miles from Libby and could be used for an emergency landing.

3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

Libby Field is situated within R-2303B.

3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

Libby Field is unique because of length, position relative to the restricted airspace and the weather found in southern Arizona.

3.2.B.5 Is there a size, weight, maintenance, or mission limitation that would affect test operations? If yes, describe.

No.

3.2.B.6 Including hangers an ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise Missiles?

Excluding hangars, enough ramp area exists to support approximately 20 fighter size aircraft 10 multi-engine aircraft or 25 rotary wing aircraft.

3.2.C. **Test Operations**

3.2.C.1 What types of air vehicle testing can be supported? Describe?

Unmanned Air Vehicles, Space Shuttle, SR-71, Rotary Wing, and some Fixed Wing.

3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

Yes.

3.2.C.3 What kinds, numbers of aircraft and mix of same can be supported (manned and unmanned)?

Any type of unmanned vehicle can be supported. Currently, only the aircraft listed in 3.2.C.8 below can be supported.

3.2.C.4 Does UAV and or rotary wing operations pose any limitations on other types of missions? If yes, explain.

No.

3.2.C.5 What sorts of missions can be flown within local airspace?

Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

Three.

3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

Three.

3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

Five each OV-1D, two each UH-1, three each EH-60, four each C-12 aircraft are owned by the Intelligence Center and Fort Huachuca, two each UH-1 and two O-2A aircraft are owned by USAEPG. Four each C-12 aircraft are owned by CASSO.

3.3 ELECTRONIC COMBAT

3.3.A Threat Environment

This subject is addressed in Part V-6, Intelligence & Electronic Warfare, of this report.

3.4 ARMAMENTS / WEAPONS

Our tests of armaments and weapons systems generally consist of antenna, performance, environmental, and EM tests of electronic systems. The information requested in this section does not apply.

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GENERAL INFORMATION

FACILITY / CAPABILITY TITLE: Range Operations

ORIGIN DATE: 20 May 1994

Service: U.S. Army (USAEPG) **Organization / Activity:** USA Electronic Proving Ground
Location: Fort Huachuca, Arizona

T&E Functional Area: Electronic Combat **UIC:** W04YAA

T&E Test Facility Category: MF/~~ISTF/OAR~~

	T&E	S&T	DE	NE	T&D	OTHER	
Percentage Use:	80				15	5	= 100
Breakout by T&E Functional Area (%)							
Air Vehicles	30				15		
Armament / Weapons	15						
Electronic Combat	30						
Other	5					5	

Note: Total in Breakout must equal "Percentage Use" line entry.

"FORM1" TAB: page:

TECHNICAL INFORMATION

FACILITY / CAPABILITY TITLE: Range Operations

Facility Description: including mission statement: The Antenna Test Facility is used to characterize antennas while in place on various military land vehicles and aircraft. This facility is used to determine radiation patterns from both mounted and unmounted antennas and consists of a 118-foot non-metallic tower, 117-foot sensor-bearing arc, and two rotating turntables 30 feet in diameter, one under the arc and the other 500 feet east of the tower. The tower is all wood (completely non-metallic above ground level), self supporting, square cross sectioned, and pyramidal in shape. It is used for testing electronic equipment or antennas from zero to 100 feet above the ground. The arc is an antenna measurement facility and determines the antenna patterns of various radiating devices while they are in operational position of an aircraft. The arc is constructed of laminated wood and has essentially free space characteristics above 1000 MHz. Its height is adjustable. Besides the arc with its 75-foot radius and the turntable, this system includes a rotatable platform that will support inverted aircraft airframes. The total environment is metal free. The facility i equipped with instrumentation for the evaluation of antenna systems from 50 MHz to 18 GHz. USAEPG has recently completed the construction of a large outdoor Compact Antenna Test Range. The Compact Range covers frequencies from six to 40 GHz and has a quiet zone diameter of 50 feet. The target positioner is operated hydraulically and has a maximum capacity of 70 tons. The Meteorological Support Branch provides the latest in full meteorological services. These services include upper air rawinsonde data, tethersonde data, and the full complement of surface meteorological data, available from the automated meteorological data network, with sites located at all major outdoor test sites and all UAV runway locations. Specialized data services such as the measurement of atmospheric scintillation and aerosol density and model computations of the atmospheric transmissivity of laser energy are also available. Forecast services include both general planning forecasts, as well as specialized forecasts tailored to specific test requirements. Range advisories are issued for weather conditions that could have adverse effects upon test operations or results of which could pose a hazard to personnel or equipment. Such conditions include, but are not limited to, thunderstorms within the range boundaries, surface winds equal to or in excess of 30 knots, and lightning, which is the major weather hazard at Fort Huachuca. Advisories can also be issued for project specific criteria. Solar and Geophysical Forecasts, advisories, and data summaries of Solar and Geophysical activity that can adversely affect test operations and results are also provided by the Branch. Forecasts and advisories of such activity are also listed in the EPG GPS Range Instrumentation System (EGRIS) Bulletin Board for users of the GPS Range Timing and/or Positioning System.

The Black Tower Complex is dedicated for the use of all UAV testing and training on Fort Huachuca. This complex is composed of 3 hangars, parachute tower, hazardous material storage facility, explosive storage bunker, 2 runways (1 dirt runway 50' x 2000', and a paved runway, 75' x 3000').

Interconnectivity / Multi-Use of T&E Facility: Meteorological stations report data to central station.

Type of Tests Supported: Antenna Pattern, Unattended Aerial Vehicle, Field testing, intelligence and electronic warfare, command, control, communications, surveillance.

Summary of Technical Capabilities:

Keywords: Antenna patterns, unattended aerial vehicle (UAV), meteorological, far field antenna measurements.

ADDITIONAL INFORMATION

FACILITY / CAPABILITY TITLE: Range Operations

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	0	0	0	0	0	0	0
Enlisted	1	0	0	0	0	0	0
Civilian	8	8.5	9	9	9	9	9
Contractor	0	0	0	0	0	0	0
Total	9	8.5	9	9	9	9	9

Total Square Footage: 28,495

Test Area Square Footage: 26,495 **Office Space Square Footage:** 2,000

Tonnage of Equipment: 500 tons **Volume of Equipment (cu.ft.):** 100,000 cu ft

Annual Maintenance Cost: $100,000 **Estimated Moving Cost:** Unknown

CAPITAL EQUIPMENT INVESTMENT

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
ATF			$340,000				
MET			$200,000				

"FORM3" TAB: page:

FACILITY CONDITION

FACILITY / CAPABILITY TITLE: Range Operations

AGE: 1966 Average **REPLACEMENT VALUE:** $27,468,078

MAINTENANCE & REPAIR BACKLOG: $50,000

DATE OF LAST UPGRADE: October 1990

NATURE OF LAST UPGRADE: Refurbishment of wooden tower.

MAJOR UPGRADES PROGRAMMED

1. **UPGRADE TITLE:** None.

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. **UPGRADE TITLE:**

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: Range Operations

T&E FUNCT. AREA		FISCAL YEAR 86	87	88	89	90	91
AIR VEHICLES	DIRECT LABOR TEST HOURS MISSIONS	15634	5820	9964	3018	8512	10727
ELECT. COMBAT	DIRECT LABOR TEST HOURS MISSIONS	24278	20899	16915	5651	5094	2185
ARMNT/WEAPONS	DIRECT LABOR TEST HOURS MISSIONS	0	0	0	0	0	0
OTHER T&E	DIRECT LABOR TEST HOURS MISSIONS	15250	18723	16112	39264	28108	17167
OTHER	DIRECT LABOR TEST HOURS MISSIONS	866	67	121	96	1765	1741

24278 DLH / 1.426 = 17025 Fac Hrs

"FORM5-0" TAB: page:

021

HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: Range Operations

T&E FUNCT. AREA		FISCAL YEAR 92	93	94	95	96	97
AIR VEHICLES	DIRECT LABOR	5295	3153				
	TEST HOURS						
	MISSIONS						
ELECT. COMBAT	DIRECT LABOR	1878	2764				
	TEST HOURS						
	MISSIONS						
ARMNT/WEAPONS	DIRECT LABOR	364	0				
	TEST HOURS						
	MISSIONS						
OTHER T&E	DIRECT LABOR	4751	4702				
	TEST HOURS						
	MISSIONS						
OTHER	DIRECT LABOR	118	162				
	TEST HOURS						
	MISSIONS						
		12406	10781 = 23187				
Fac Hrs =		8130	8130 = 16260				

1.426 DLH/Fac Hr

"FORM5-1" TAB: page:

022

SENSITIVE/CLOSE HOLD

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY / CAPABILITY TITLE: Range Operations

ANNUAL HOURS OF DOWNTIME	1	223
AVERAGE DOWNTIME PER DAY (line 1 / 365)	2	.72
AVERAGE HOURS AVAILABLE PER DAY (24 / line 2)	3	23.28

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL SUM)
4	5	6	7	8 ~~133,790~~ 5750
ATF	3	~~1114~~ 3	~~3342~~ 9	
Air Veh.	3	~~241~~ 22	~~723~~ 66	
UAV Tng	4	~~167~~ 42*	~~668~~ 168	
EC (C^5I)	2	~~507~~ 2	~~1014~~ 4	
		*INCLUDES TRAINEES		ANNUAL UNCONSTRAINED CAPACITY 9 ~~48,833,250~~ 2,098,750
"TYPICAL"				
		TOTAL SUM	~~5747~~ 247	

"FORM6"

ERRATA FROM PG 15 BOOK #102

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY / CAPABILITY TITLE: Range Operations

ANNUAL HOURS OF DOWNTIME	1	223
AVERAGE DOWNTIME PER DAY (line 1 / 365)	2	.72
AVERAGE HOURS AVAILABLE PER DAY (24 / line 2)	3	23.28

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL SUM)
4	5	6	7	8 133,790
ATF	3	1114	3342	
Air Veh.	3	241	723	
UAV Tng	4	167	668	
EC	2	507	1014	
				ANNUAL UNCONSTRAINED CAPACITY
				9 48,833,350
"TYPICAL"				
		TOTAL SUM	5747	

"FORM6"

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM HAWK	23801	0	86	0	0	90	90	90	90
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
UAV	35889	1883	0	0	0	50	50	50	50
PM RADAR	62120	0	9	0	0	25	25	25	25
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
PM UAV	62303	0	110	37	20	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
BRDEC	62785	0	7	0	5	15	15	15	15
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	73	0	0	0	0	0	0
MINE WARFARE	63619	398	0	0	0	0	0	0	0
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
FLD SPT ACT - FT HOOD	65712	0	3555	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	88	84	31	7
Subtotal RDTE		16397	11145	7557	5992	9340	9377	9304	8242
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
HAWK GSE	C28100	290	0	0	0	263	257	243	235
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PM AAH	112000	0	1	0	0	0	0	0	0
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
PM UAV	523200	0	19	122	322	263	257	243	234
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100

025

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
OTHER PROCUREMENT	VARIOUS	0	0	9	20	430	569	654	717
Subtotal PROCUREMENT		3027	8862	5966	4996	2625	2827	2792	2833
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
MICOM	OMA	0	0	8	0	0	0	0	0
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
FT POLK	OMA	0	95	0	0	0	0	0	0
OTEA	OMA	0	25	0	0	0	0	0	0
TRADOC	OMA	0	279	443	220	200	200	200	200
Miscellaneous OMA	OMA	0	158	18	16	802	817	799	730
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		3589	3902	1672	1021	1652	1717	1749	1780
TOTAL PARENT SERVICE		23013	23909	15195	12009	13617	13921	13845	12855
2. Other DOD									
a. USAF	USAF	1054	1452	1064	1039	556	564	599	654
b. NAVY/MARINE CORPS	USN/USMC	348	1801	1559	1216	1204	1293	1302	1291
c. Misc DOD	MISC DOD	864	111	158	145	32	37	42	47
TOTAL OTHER DOD		2266	3364	2781	2400	1792	1894	1943	1992
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		25279	27416	29778	23409	22347	20937	20451	19241

SENSITIVE/CLOSE HOLD
SENSITIVE/CLOSE HOLD

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
UAV	35889	1883	0	0	0	50	50	50	50
PM UAV	62303	0	110	37	20	25	25	25	25
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	7	8	9	2
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
FLD SPT ACT - FT HOOD	65712	0	851	0	0		0	0	0
Subtotal RDTE		2219	976	38	20	82	83	84	77
b. PROCUREMENT									
PM AAH	112000	0	1	0	0	0	0	0	0
PM UAV	523200	0	19	122	322	263	257	243	234
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
Subtotal PROCUREMENT		0	136	149	355	263	257	243	234
c. OMA and Other Army									
TRADOC	OMA	0	279	443	220	200	200	200	200
Subtotal OMA and Other Army		0	279	443	220	200	200	200	200
TOTAL PARENT SERVICE		2219	1391	630	595	545	540	527	511
2. Other DOD									
a. USAF	USAF		339		200	134	135	160	184
b. NAVY/MARINE CORPS	USN/USMC		1471	1306	916	750	800	800	800

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
c. Misc DOD	MISC DOD	864	62	24	85	12	12	12	12
TOTAL OTHER DOD		864	1872	1330	1201	896	947	972	996
3. Other U.S. Government									
4. TOTAL DIRECT USER FUNDS		3083	3263	1960	1796	1441	1487	1499	1507

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029

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
MICOM	63322	0	49	0	0	0	0	0	0
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
MISCELLANEOUS R&D	Various	0	0	0	0	9	0	8	0
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
Subtotal RDTE		4464	1713	1263	546	1559	1550	1558	1536
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
Subtotal PROCUREMENT		53	721	1758	1434	377	379	342	337
c. OMA and Other Army									
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	58	18	16	300	300	300	300
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
Subtotal OMA and Other Army		52	2257	830	406	550	550	550	550

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
TOTAL PARENT SERVICE		4569	4691	3851	2386	2486	2479	2450	2423
2. Other DOD									
a. USAF	USAF	0	0	147	0	18	19	19	20
b. NAVY/MARINE CORPS	USN/USMC	0	13	15	0	18	19	20	20
TOTAL OTHER DOD		0	13	162	0	36	38	39	40
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		4569	4704	4013	2386	2522	2517	2489	2463

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031

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ARMAMENTS/WEAPONS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
PM HAWK	23801	0	86	0	0	90	90	90	90
MINE WARFARE	63619	398	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	2	8	8	5
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
Subtotal RDTE		574	86	0	0	92	98	98	95
b. PROCUREMENT									
HAWK GSE	C28100	290	0	0	0	263	257	243	235
Subtotal PROCUREMENT		290	0	0	0	263	257	243	235
c. OMA and Other Army									
Subtotal OMA and Other Army		0	0	0	0	0	0	0	0
TOTAL PARENT SERVICE		864	86	0	0	355	355	341	330
2. Other DOD									
TOTAL OTHER DOD		0	0	0	0	0	0	0	0
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		864	86	0	0	355	355	341	330

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SENSITIVE/CLOSE HOLD

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
I. PARENT SERVICE									
a. RDTE									
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
PM RADAR	62120	0	9	0	0	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
BRDEC	62785	0	7	0	5	15	15	15	15
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
MISCELLANEOUS R&D	Various	0	0	0	0	70	68	6	0
FLD SPT ACT - FT HOOD	65712	0	2704	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
Subtotal RDTE		9140	8253	5845	5055	7295	7332	7320	6311

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
b. PROCUREMENT									
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
OTHER PROCUREMENT	VARIOUS	0	0	9	20	20	55	43	34
Subtotal PROCUREMENT		2684	8005	4059	3207	1312	1420	1353	1344
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
OTEA	OMA	0	25	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	100	0	0	302	317	299	230
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		1626	480	287	229	602	667	699	730
TOTAL PARENT SERVICE		13450	16738	10191	8491	9209	9419	9372	8385
2. Other DOD									
a. USAF	USAF	1054	1113	917	839	404	410	420	450
b. NAVY/MARINE CORPS	USN/USMC	348	306	210	300	400	436	444	431
c. Misc DOD	MISC DOD		49	121	60	20	25	30	35
TOTAL OTHER DOD		1402	1468	1248	1199	824	871	894	916
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		14852	18206	11439	9690	10033	10290	10266	9301

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
I. PARENT SERVICE									
a. RDTE									
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	24	0	0	0	0	0	0
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	0	0	0	0
Subtotal RDTE		0	117	411	371	312	314	244	223
b. PROCUREMENT									
MISCELLANEOUS PROCUREMENT	Various	0	0	0	0	410	514	611	683
Subtotal PROCUREMENT		0	0	0	0	410	514	611	683
c. OMA and Other Army									
MICOM	OMA	0	0	8	0	0	0	0	0
FT POLK	OMA	0	95	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	0	0	0	200	200	200	200
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
Subtotal OMA and Other Army		1911	886	112	166	300	300	300	300
TOTAL PARENT SERVICE		1911	1003	523	537	1022	1128	1155	1206
2. Other DOD									
b. NAVY/MARINE CORPS	USN/USMC		11	41	0	36	38	38	40
TOTAL OTHER DOD		0	11	41	0	36	38	38	40
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		1911	1157	12366	9537	7996	6288	5856	5640

24-May-94

FY92 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	TOTAL WORKYEARS
ENVIRONMENTAL TEST FACILITY	0.4	0.2	0.0	3.8	0.0	4.3
INSTRUMENTED TEST RANGE	59.9	10.5	1.6	50.8	2.2	125.0
RANGE OPERATIONS	3.0	1.1	0.2	2.7	0.1	7.1
EMI/TEMPEST TEST FACILITY	0.4	1.3	0.0	6.3	1.9	9.9
IEW TEST DIVISION	0.0	13.1	0.0	2.7	0.0	15.8
ELECTROMAGNETIC ENVIR TEST FAC	1.7	4.7	0.0	43.5	13.7	63.5
AVIONICS/GPS TEST FACILITY	1.3	0.0	0.0	4.7	0.0	6.0
	66.6	30.9	1.8	114.4	17.8	231.6
EPG CAPABILITY	44.4	47.1	1.2	242.6	15.2	350.4
TOTAL	111.0	78.0	3.0	357.0	33.0	582.0

FY93 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	
ENVIRONMENTAL TEST FACILITY	0.7	1.0	0.0	7.8	0.0	9.5
INSTRUMENTED TEST RANGE	14.3	31.3	0.9	45.6	0.6	92.6
RANGE OPERATIONS	1.8	1.6	0.0	2.7	0.1	6.2
EMI/TEMPEST TEST FACILITY	0.2	1.5	0.0	4.7	1.1	7.6
IEW TEST DIVISION	0.0	9.9	0.0	0.6	0.0	10.5
ELECTROMAGNETIC ENVIR TEST FAC	0.1	8.7	0.0	23.8	25.4	58.0
AVIONICS/GPS TEST FACILITY	0.8	0.0	0.0	7.8	0.0	8.7
	17.9	54.1	0.9	92.9	27.2	193.0
EPG CAPABILITY	3.1	17.9	2.1	302.1	14.8	339.0
TOTAL	21.0	72.0	3.0	395.0	42.0	532.0

038

Document Separator

White Sands Missile Range
BRAC 95 R&D Data Call #7
(US Army Electronic Proving Ground)

PART V-2: Data Submission

R&D FACILITY / CAPABILITY TITLE:

ENVIRONMENTAL TEST FACILITY

SECTION 1: GUIDANCE, STANDARDS & ASSUMPTIONS

This section not provided. Please refer to the original guidance and data call for this information.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

2.1 WORKLOAD

2.1.A Historical Workload

2.1.A.1 Use the Historical Workload Form (FORM5-0 and FORM5-1). See enclosure 1.

2.1.B Forecasted Workload

2.1.B.1 Identify all appropriations (by program element) that generated testing or test support requirement, or are expected to generate such a requirement for FY92, FY93, and each year of the FY95 FYDP. See enclosure 2, pages 1 to 14; data are provided as (1) USAEPG rollup and (2) five functional areas.

2.1.B.2 Provide the amount of test work performed at your facility in FY92 and FY93. Break this out by workyears across the functional descriptors. See enclosure 2, page 15.

2.2 UNCONSTRAINED CAPACITY

2.2.A Use the Unconstrained Capacity Form (FORM6). See enclosure 1.

2.2.B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

Capacity is limited by availability of physical facilities.

2.3 TECHNICAL RESOURCES

2.3.A Does the facility have a specified war-time or contingency role established in approved war plans?

No.

2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

USAEPG would lose a major portion of their ability to perform its T&E mission to support materiel acquisition and fielding decisions.

2.3.B.1 On the test mission of any other activity?

USAEPG provides test support to all PMs, PEOs, and independent technical evaluations of electronic system on subsystems. Their mission would be degraded to the extent that test results and analysis would no longer be available to support acquisition and fielding decisions.

2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

As the prime tester of tactical equipment, USAEPG has an impact on the operational effectiveness of the Armed Forces.

SECTION 3: MEASURES OF MERIT

3.1 OVER-ARCHING MEASURES OF MERIT

3.1.A **Interconnectivity**

3.1.A.1 What percentage of the total test workload of this facility in FY93 involved the real-time or near real-time exchange of data or control with another facility? List the facilities you interconnect to for tests and identify how many are simultaneous activities. Identify these as to whether they are internal or external to the site.

None.

3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected. If yes, explain.

No.

3.1.B **Facility Condition**

3.1.B.1 Use the Facility Condition Form (FORM4). See enclosure 1.

3.1.C **Environmental and Encroachment Carrying Capacity**

3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility? If yes, explain.

No. Of the one-thousand, one-hundred and seventy-two (1,172) surveyed test sites that EPG has, only three (3) test sites are declared restricted use for daytime operations due to bat-related restriction periods from July 1 through September 30 of each year. The restricted use test sites are East 1 and 2, and West 1. During this time-frame, the lesser long-nosed (Leptonycteris curasoae yerbaabuenae) bats migrate to these particular sites to feed on the nectar from the flowers of the dense Agave stands. West 1 is restricted because of the proximity to a roosting site. This restriction is considered minor impact to testing.

3.1.C.2 How much could workload be increased before this limit would be reached? Express you answer as a percentage of your current workload.

Workload can be increased to 100% local testing in Fort Huachuca. My estimate is based on communications-electronic, unmanned aerial vehicle (UAV), and laboratory type (e.g. computer simulation, environmental, and reliability) testing. As an example, abatement procedures are in place for night testing/operations of UAVs during July 1 to September 30.

3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire, and describe them.

Yes. There are two voluntary agreements. These are with:

(1) The U.S. Fish and Wildlife Service to protect roost sites and forage habitat for the lessor long-nosed bat. There is no expiration date for this agreement.

(2) The Arizona Archeological Society to perform investigation/archeological studies conducted by surveys, excavations and mitigation of possible historical and/or archeological importance. There is no expiration date for this agreement.

3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

a. State population was considered and not international population. Due to the location of Fort Huachuca, if we take a 50 miles radius, with Fort Huachuca being the center of the circumference, the southern-most portion of the circumference falls into international lines (Republic of Mexico).

b. The total population within a 50 miles radius is 97,624. The 50 miles radius encompasses the counties of Cochise, portions of Pima, and Santa Cruz.

c. The total population within a 100 miles radius is approximately 577,500. The 100 miles radius encompasses the counties of Cochise and portions of Pima, and Santa Cruz.

d. The total population within a 150 miles radius is 820,734. The 150 miles radius encompasses the counties of Cochise and Pima, Graham, and, Pinal.

e. The total population within a 200 miles radius is 2,942,835. The 200 miles radius encompasses the counties of Cochise, Santa Cruz, Pima, Graham, Pinal, Gila, and portions of Maricopa.

f. Cochise County consists of the following populated areas: Benson, Bisbee, Bowie, Cochise, Douglas, Dragoon, Elfrida, Hereford, Huachuca City, McNiel, Naco, Pearce, Pirtleville, Pomerene, Saint David, San Simon, Sierra Vista, Tombstone, and Willcox. Fort Huachuca was annexed by Sierra Vista in 1971.

g. Graham County consists of the following populated areas: Bylas, Central, Fort Thomas, Pima, Safford, Soloman, and Thatcher.

h. Maricopa County (only those that fell into the radius of consideration) consists of the following populated areas: Arlington, Avondale, Buckeye, Cashion, Chandler, El Mirage, Gila Bend, Gilbert, Glendale, Mesa, Phoenix, Scottsdale, and Tempe.

i. Pima County consists of the following populated areas: Ajo, Arivaca, Cortaro, Green Valley, Lukeville, Marana, Mount Lemon, Rillito, Sahuarito, Sasabe, Sells, Topawa, and Tucson.

j. Pinal County consists of Casa Grande, Coolidge, Eloy, Florence, Kearny, Mammoth, Maricopa, Oracle, Picacho, Red Rock,
Sacaton, San Manuel, Stanfield, Superior, and Valley Farms.

k. Santa Cruz County consists of the following populated areas: Elgin, Nogales, Patagonia, Sonoita, and Tumacacori.

3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and the frequency of use for each that affect of could affect mission accomplishment in your air, land, or sea space.

a. Commercial air travel is available from Fort Huachuca to Phoenix.

b. Arizona Highway 90 feeds Fort Huachuca from the north, where it originates from Interstate 10, 30 miles away. This is the major route leading into the reservation.

c. Arizona Highway 92 originates at the Fort Huachuca east gate and proceeds east and then south around the northern and eastern boundaries of the City of Sierra Vista.

SENSITIVE/CLOSE HOLD

Errata Sheet # 4 of 10

1. This Errata Sheet applies to the following EPG R&D Facilty/Capability Data Submissions:

Range Operations Capabilities
Environmental Test Facility
Instrumented Test Range
Electromagnetic Environmental Test Facility
EMI/TEMPEST Test Capabilities
Intelligence & Electronic Warfare
Avionics/ Global Positioning System
General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.1.d.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

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c. Black Tower Complex. The Black Tower Complex is dedicated for the use of all UAV testing and training on Fort Huachuca. This complex is composed of 3 hangars, parachute tower, hazardous material storage facility, explosive storage bunker, 2 runways (1 *dirt runway 220' x 2000' (as of Jul 94)*, and a paved runway, 75' x 3000'). In addition, the following are available to UAV testing: frequency coordination, precision tracking, area surveillance, real-time and post-test digital data, communications and timing, photographic and video support, optical/infrared targets, and radar/communications threat environment.

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several sections skipped
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3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes, explain.

a. Yes. The platform is being completely rebuilt and should increase its capacity. The west turntable will be going through a major rehabilitation.

b. *The UAV dirt runway expansion to 2,000 feet will be complete in July of 1994.*

d. Fry Boulevard, the main street of Sierra Vista, originates at the Fort Huachuca main gate and proceeds due east through the heart of the city.

e. Buffalo Soldier Trail also originates at the Fort Huachuca main gate, proceeds south and then east around the southern boundary of the city.

f. Garden Avenue runs north and south and connects Fort Huachuca's main and east gates.

g. A dirt road originates at Fort Huachuca's west gate and proceeds west into the Coronado National Forest.

h. The commercial use of Restricted Areas R-2303A and R-2303B has negligible impact on the testing that EPG conducts. The ingress/egress of commercial traffic to Sierra Vista Airport is deconflicted by coordination with Libby Tower.

3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

None.

3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

None.

3.1.D Specialized Test Support Facilities and Targets

see prev page

3.1.D.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

Yes. The ETF is equipped with instrumentation systems and environmental test chambers providing the capability to conduct climatic and structural testing and training. The ETF can fully conduct MIL-STD-810D and all previous versions of MIL-STD 810 testing. The only limitation for 810D and earlier testing depends on the size of the test's items, where the ETF is restricted to Temperature, Altitude, Humidity, Leakage (Immersion), Fungus, and Blowing Sand Testing. Full capability is available for component sized test items. For MIL-STD 810E testing, minor additional restrictions are imposed on the ETF. However, the ETF can arrange with other testing facilities for the conduct of all MIL-STD-810 testing.

3.1.D.2 Are specialized targets required to support this facility, If yes, explain.

No.

3.1.D.2.A Have the specialized targets been validated? If yes, by whom?

Not applicable.

3.1.E **Expandability**

3.1.E.1 Other than the expandability inherent in the unconstrained capacity (FORM 6) discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? If yes, explain.

a. Yes. The Blowing Rain test chamber has been recently modified to provide the capability of Blowing Sand Testing of test items with a cross section as large as 4 x 4 FT under ambient conditions.

b. Yes. The recent procurement of another blowing wind system consisting of a 480 cubic inch engine driving an air boat fan has increased our capability for Blowing Rain and Sand testing of larger, shelter sized, test items.

c. Yes. The largest environmental chamber at the facility, besides being capable of altitude simulation of 80,000 feet, can simultaneously accommodate two tactical shelters with external generators (11 FT. wide x 10 FT. high 16 FT. deep) and has been recently modified with a modular, chamber extension system for longer test items; along with the addition of a new solar radiation simulator for evaluation of actinic effects.

d. Yes. The climatic chambers have been improved with all solid state humidity and temperature sensors that dramatically increase reliability, resolution and accuracy of all tests.

e. Yes. Climatic chambers have been integrated into a test fault detection / notification system which notifies key facility technicians in the event of any chamber malfunction via a statewide paging system. This saves test dollars, especially in the longer 10 day Humidity or 28 to 58 day Fungus tests, by increasing response times to service chamber problems; rectifying environmental deviations before they exceed tolerances that would invalidate tests, or force test re-starts, as required in Fungus testing.

3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? If yes, identify by T&E functional area and test type.

Yes. Environmental Test Facility is routinely called on for its' expertise by CECOM, JPO, NAVY, AIR Force, to: certify climatic and dynamic (vibration) chambers as capable or not for MIL-STD-810E testing; to provide expert witnesses during the conduct of PPQT (Pre-Production Qualification Testing), FAT (First Article Testing), Special Characterization testing, etc.; review and provide comment to Contractor Test Plans and Procedures; along with participate with national professional organizations in the private and Government sector such as the IES (Institute of Environmental Sciences), Range Commanders Council Environmental and Climatics Testing Subcommittee. A change of conducting more Environmental Government Acceptance Testing within our Government Facility would be

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greatly welcomed because it would obviate many hours or days of deliberations between Contractor run test facilities and the Government experts and witnesses that find fault with contractor's chambers not being capable of producing the prescribed environment. Should our workload increase, due to more of these Government Environmental Tests being conducted with our Government test facility, our core manpower strength can be supplemented by local contract support as test needs dictate.

3.1.E.2 Are the airspace, land, and water areas adjacent to areas under DoD control available and/or suitable for physical expansion to support new missions or increased footprints. If yes, explain.

Yes, as the facility is on a military reservation, both airspace and land area can be expanded through request and negotiation.

3.1.E.3 Is the facility equipped to support secure operations. If yes, to what level of Classification (Confidential -> Special Access)?

Yes, up to and including SAR.

see page prior 3.1.D.1

3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes, explain.

Yes. New Temperature Shock testing and Blowing Sand testing capabilities for large test items in controlled environments other than ambient.

3.1.F **Uniqueness**

3.1.F.1 Is this a one-of-a-kind facility within the DoD? If yes, explain.

No.

3.1.F.1.A Within the U.S. Government? If yes, explain

No.

3.1.F.1.B Within the U.S? If yes, explain.

No.

3.1.F.2 Are you currently providing support to DoD users outside your Military Department? If yes, indicate the percentage of total workload in FY92 and FY93 by Military Department.

No.

3.1.G Available Air, Land, and Sea Space

Not applicable.

3.1.H Geographic/Climatological Features

3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap of the earth). Identify all of the following that apply: mountains, forest, jungle, cultivated lowland, swamp, riverine, desert, and sea. State the area of each in square miles.

a. The Fort Huachuca military reservation is geographically located in the inter-mountain desert plateau region between the souther most extent of the Rocky mountains and the northern most extent of the Sierra Madres. The area of land is covered by the installation is 115 square miles. The elevation varies from 3,925 feet to 7,709 feet above sea level wit 30% of the area located in rugged mountainous terrain. The remaining terrain is typified by rolling hills gradually flattening away from the mountains. Vegetation in the area is lower elevations. Above 5000 feet Black Oak and Juniper are common and above 6500 feet yellow pine is predominate.

b. The word "Huachuca" means "Place that Thunders" and from Jun to September Fort Huachuca lives up to its name, 85 to 99 percent of the annual lightening activity occurs during this time. Activity can range from isolated mountain thundershowers to powerful Mesoscale Convective Complexes. Thunderstorms are DANGEROUS, due to the potential for lightning strikes, range and forest fires, strong winds, hail, heavy precipitation and flash flooding.

c. Precipitation in the area varies dramatically from season to season and from year to year. The average annual precipitation from 1956 to present is 14.91 inches. Measurable precipitation can occur during every month of the year, but is most likely to occur in July and August. 50 to 75 percent of the annual precipitation recorded typically falls during these two months. From November to late April, depending on the temperature, snow showers can occur with accumulations frequent above 5000 feet.

d. Wind direction and speed are greatly influenced by seasonal, diurnal and orographic effects. Typically winds in the morning are from the southeast at 5 to 10 knots shifting to the southwest at 8 to 16 with occasional gusts to 24 knots. During the fall, winter, and spring strong wind events with winds from the south to southwest at 20 to 30 with gusts in excess of 50 knots and a duration of several hours to several days can occur 10 to 25 percent of the time. During the summer strong down burst winds associated with the thunderstorms with instantaneous gusts in excess of 60 knots can occur with little warning.

e. Temperatures in the local area are moderate with the extremes ranging from a high of 107 to a low of 9 degrees. Average summertime temperatures range from highs in the upper eighties to lows in the mid-sixties. Average wintertime temperatures range from highs in the low sixties to lows in the mid thirties. The average temperature for the year is 62 degrees.

f. Fort Huachuca is an excellent location for a wide variety of test activities with environmental considerations. Most of the moderate to severe weather conditions discussed above are of relatively short duration, and with proper planning, mission delays can be held to a minimum all year round.

3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of tests?

No.

3.1.H.3 Do you have to go to other geographical locations to satisfy test requirements? If yes, explain. If yes, provide as a percent of overall workload per year for the last 8 years.

No.

3.1.H.4 Number of days per year with average temperature below 32 degrees F? Between 32 and 95 degrees F? Above 95 degrees F?

All 365 days in an average year have a daily average temperature between 32 and 95 degrees fahrenheit. During the entire 35 year period covered by our climatological database, approximately 10 days had daily averages below 32 degrees which equates to one such day every 3-4 years. The highest daily average temperature during the same period has been 90 degrees which occurs only once or twice each year. The hottest weather at this location is accompanied by low relative humidity which results in good night times cooling after a hot day.

3.1.H.5. Number of days per year with average relative humidity below 30%? Between 30 and 80%? Above 80%

The average number of days per year with an average relative humidity below 30% is 150. Humidity can occasionally fall below 10% during these days. An average of 194 days per year have average relative humidities between 30% and 80%. Finally, 21 days per year, on average, have an average relative humidity above 80%.

3.1.H.6 Number of test missions per year (85 - 93) canceled due to weather?

Most weather related test mission cancellations are the result of weather conditions at locations other than Fort Huachuca. During the period of review, 24 missions (mostly UAV missions) were canceled due to adverse weather conditions. Generally, most projects will go into a hold until the adverse conditions subside or they can be scheduled around expected adverse weather conditions without having to cancel.

3.1.H.7 Number of test days per year (85 - 93) canceled due to weather?

During the period of review, there have been no full 24 hour days during which testing could not be conducted due to adverse weather conditions. Local forecasting

capability exists that allows weather sensitive test operations to be scheduled around periods of expected adverse weather conditions.

3.1.H.8 Number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

Based upon the 35 year climatological database, there are no full 24 hour periods during which the visibility drops below 3 miles. Restricted visibility occurs most often during periods of showery types of precipitation which occur primarily during the winter and summer rainy seasons. Occurrences of fog occur primarily during the winter and are of short duration. Based upon climatology, 2.3% or 197.6 hours has visibility below 3 miles in an average year. This equates to a total of 8.2 days. Visibility of 1-3 miles occurs, on average, a total of 109.6 hours while visibility less than one mile occurs a total of 88.1 hours a year or about 1% of the time on average. December is the month with the highest number of occurrences with 29.8 hours with visibility of 1-3 miles and 14.9 hours with visibility below 1 mile on average. Visibility below 3 miles has never been reported in June.

3.1.H.9 What is the average number of flying days available per year for flight tests? Provide historical average from the past eight years.

The average number of flying days available per year based solely upon weather conditions during the period of review is 353. This equates to 96.7% of all days in a year being available. The primary weather condition that may make a day unavailable is strong wind since all other adverse weather conditions are intermittent in nature.

3.1.H.10 What percentage of the time are your test operations restricted due to weather?

Weather conditions that restrict test operations are high winds, thunderstorms, and low visibility. High winds occur, on average, 10% of all days of the year and last about 8 hours per day for 3.3% of the total number of hours in a year. Thunderstorms occur on 60 days a year with an average duration of 2 hours for 1.4% of the hours in a year. Low visibility, as indicated above, occur 2.3% of the total number of hours in a year. This gives a total of 7% of all hours in a year where test operations would be restricted by weather. Heavy show is very rare occurring much less the time in a given year.

3.2 AIR VEHICLES

3.2.A Supersonic Airspace

3.2.A.1 Do Supersonic Corridors or areas exist?

Two low level, high speed jet visual route R-260 and VR-263.

3.2.A.2 Where are they located relative to the airfield?

VR-260 is located to the north and cuts across the north west corner of R-2303B

SENSITIVE/CLOSE HOLD

Errata Sheet # 5 of 10

1. This Errata Sheet applies to the following EPG R&D Facility/Capability Data Submission:

   Range Operations Capabilities
   Environmental Test Facility
   Instrumented Test Range
   Enectromagnetic Environmental Test Facility
   EMI/TEMPEST Test Capabilities
   Intelligence & Electronic Warfare
   Avionics/Global Positioning Systems
   General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.2.A.6 What is the maximum number of simultaneous users?

Number of simultaneous users is limited by USAF or other military department rules on supersonic flight in restricted corridors. No specific limitation on the number of simultaneous users is available to EPG.

3.2.B **Airfield and Facility Characteristics**

3.2.B.1 Provide a brief description of your airfield and support facilities.

Libby Army Airfield is a Joint Use Airfield *owned by Ft. Huachuca (TRADOC)* and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be all concrete when completed (FY95) and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and belongs to Ft. Huachuca.

below the airspace floor. VR-263 is located to the south and cuts across the south east and south west corners of R-2303B below the airspace floor.

3.2.A.3 At what altitude (upper and lower altitude)?

VR-260 is 100 ft AGL to 7000 ft AGL and VR-263 is 100 ft AGL to 8500 ft MSL.

3.2.A.4 Are they over land or water? What size and shape (length and width)?

All over land. Visual flight routes only.

3.2.A.5 Are there restrictions you must observe to use this space? If yes, explain.

No known current or projected need exists to use these areas as they are below our local airspace.

3.2.A.6 What is the maximum number of simultaneous users? see prev page

Unknown.

3.2.B **Airfield and Facility Characteristics**

3.2.B.1 Provide a brief description of your airfield and support facilities. see prev page

Libby Army Airfield is a Joint Use Airfield and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be al concrete when completed and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and does not belong to the Proving Ground.

3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

Hubbard assault strip is 5 miles from Libby and could be used for an emergency landing.

3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

Libby Field is situated within R-2303B.

3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

Libby Field is unique because of length, position relative to the restricted airspace and the weather found in southern Arizona.

3.2.B.5 Is there a size, weight, maintenance, or mission limitation that would affect test operations? If yes, describe.

No.

3.2.B.6 Including hangers an ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise Missiles?

Excluding hangars, enough ramp area exists to support approximately 20 fighter size aircraft 10 multi-engine aircraft or 25 rotary wing aircraft.

3.2.C. **Test Operations**

3.2.C.1 What types of air vehicle testing can be supported? Describe?

Unmanned Air Vehicles, Space Shuttle, SR-71, Rotary Wing, and some Fixed Wing.

3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

Yes.

3.2.C.3 What kinds, numbers of aircraft and mix of same can be supported (manned and unmanned)?

Any type of unmanned vehicle can be supported. Currently, only the aircraft listed in 3.2.C.8 below can be supported.

3.2.C.4 Does UAV and or rotary wing operations pose any limitations on other types of missions? If yes, explain.

No.

3.2.C.5 What sorts of missions can be flown within local airspace?

Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

Three.

3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

Three.

3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

Five each OV-1D, two each UH-1, three each EH-60, four each C-12 aircraft are owned by the Intelligence Center and Fort Huachuca, two each UH-1 and two O-2A aircraft are owned by USAEPG. Four each C-12 aircraft are owned by CASSO.

3.3 ELECTRONIC COMBAT

Not applicable.

3.4 ARMAMENTS / WEAPONS

Our tests of armaments and weapons systems generally consist of antenna, performance, environmental, and EM tests of electronic systems. The information requested in this section does not apply.

GENERAL INFORMATION

FACILITY / CAPABILITY TITLE: **Environmental Test Facility (ETF)**

ORIGIN DATE: 20 May 1994

Service: U.S. Army **Organization / Activity:** USA Electronic Proving Ground (USAEPG) **Location:** Fort Huachuca, Arizona

T&E Functional Area: Other T&E **UIC:** W04YAA

T&E Test Facility Category: DMS/MF

	T&E	S&T	DE	NE	T&D	OTHER
Percentage Use:	95					5 = 100
Breakout by T&E Functional Area (%)						
Air Vehicles	20					
Armament / Weapon	0					
Electronic Combat	70					
Other	5					5

Note: Total in Breakout must equal "Percentage Use" line entry.

TECHNICAL INFORMATION

FACILITY / CAPABILITY TITLE: Environmental Test Facility (ETF)

Facility Description; including mission statement: The ETF is equipped with instrumentation systems and environmental test chambers providing the capability to conduct climatic and structural testing and training. The ETF can fully conduct MIL-STD-810D and all previous versions of MIL-STD 810 testing. The only limitation for 810D and earlier testing depends on the size of the test's items, the ETF is restricted to Temperature, Altitude, Humidity, Leakage, Fungus and Blowing Sand testing. Full capability is available for component sized test items. For MIL-STD 810E testing, minor additional restrictions are imposed on the ETF. However, the ETF can arrange with other testing facilities for the conduct of all MIL-STD-810 testing.

Interconnectivity / Multi-Use of T&E Facility: None.

Type of Tests Supported: Climatic and structural.

Summary of Technical Capabilities: The ETF has climatic chambers varying in size from 4'4'4' to 10'x10'x16'. Separate chambers can perform temperature humidity, temperature, altitude, raid, sunshine, dust, salt, fog, fungus, and explosive atmosphere testing. Structural tests are sine wave vibration, shock, loose cargo bounce, vehicular bounce, drop, bench handling, and vibration/humidity/temperature reliability.

Keywords: Environmental, climatic, structural, reliability, chambers, shakers, vibration, shock, fungus.

"FORM2" **TAB:** **page:**

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ADDITIONAL INFORMATION

FACILITY / CAPABILITY TITLE: Environmental Test Facility (ETF)

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	1	0	0	0	0	0	0
Enlisted	12	6	1	1	1	1	1
Civilian	4	3	3	3	3	3	3
Contractor	5	5	5	5	5	5	5
Total	22	14	9	9	9	9	9

Total Square Footage: 12,212

Test Area Square Footage: 11,312 **Office Space Square Footage:** 900

Tonnage of Equipment: 107 **Volume of Equipment (cu.ft.):** 15,000 cu ft

Annual Maintenance Cost: $100,000 **Estimated Moving Cost:** $142,500

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
		$100,000	$100,000	$50,000		

"FORM3" TAB: page:

FACILITY CONDITION

FACILITY / CAPABILITY TITLE: Environmental Test Facility (ETF)

AGE: 1961 **REPLACEMENT VALUE:** $1,221,000

MAINTENANCE & REPAIR BACKLOG: None.

DATE OF LAST UPGRADE: 1979

NATURE OF LAST UPGRADE: Added 2,000 square feet of lab and office space.

MAJOR UPGRADES PROGRAMMED

1. **UPGRADE TITLE:** None.

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. **UPGRADE TITLE:**

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: Environmental Test Facility (ETF)

T&E FUNCT. AREA		FISCAL YEAR 86	87	88	89	90	91
AIR VEHICLES	DIRECT LABOR	112	64	2027	5719	2403	246
	TEST HOURS						
	MISSIONS						
ELECT. COMBAT	DIRECT LABOR	880	4864	2535	138	465	630
	TEST HOURS						
	MISSIONS						
ARMNT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0
	TEST HOURS						
	MISSIONS						
OTHER T&E	DIRECT LABOR	9874	15,474	9111	8898	6809	5617
	TEST HOURS						
	MISSIONS						
OTHER	DIRECT LABOR	1938	1,281	75	24	59	124
	TEST HOURS						
	MISSIONS						

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: Environmental Test Facility (ETF)

T&E FUNCT. AREA		FISCAL YEAR 92	93	94	95	96	97
AIR VEHICLES	DIRECT LABOR	619	647				
	TEST HOURS						
	MISSIONS						
ELECT. COMBAT	DIRECT LABOR	337	1802				
	TEST HOURS						
	MISSIONS						
ARMNT/WEAPONS	DIRECT LABOR	0	0				
	TEST HOURS						
	MISSIONS						
OTHER T&E	DIRECT LABOR	6547	11,569				
	TEST HOURS						
	MISSIONS						
OTHER	DIRECT LABOR	0	193				
	TEST HOURS						
	MISSIONS						

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY / CAPABILITY TITLE: Environmental Test Facility (ETF)

ANNUAL HOURS OF DOWNTIME	1	336.0
AVERAGE DOWNTIME PER DAY (line 1 / 365)	2	0.9
AVERAGE HOURS AVAILABLE PER DAY (24 / line 2)	3	23.1

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL SUM)
4	5	6	7	8 ~~346,130~~ 5,174
Low Pressure (Altitude)	3	~~24~~ 2	~~72~~ 6	
High Temperature	~~6~~ 11	~~168~~ 2	~~1,848~~ 22	
Low Temperature	11	2	22	
Shock	~~2~~ 11	~~72~~ 2	~~792~~ 22	
Solar Radiation	2	~~192~~ 2	~~384~~ 4	
Rain	3	~~24~~ 2	~~72~~ 6	
Humidity	8	~~336~~ 3	~~2,688~~ 24	

ANNUAL UNCONSTRAINED CAPACITY

9 ~~126,337,596~~ 1,878,656

Above numbers is based on equipment; facility physical constraints would limit total to ~~32,039,700.~~ 413,143

Fungus	3	~~672~~ 1	~~2,016~~ 3
Salt Fog	1	~~96~~ 1	~~96~~ 1
Sand	4	~~48~~ 3	~~192~~ 12
Dust	4	~~48~~ 2	~~192~~ 8
Explosive Atmosphere	1	~~8~~ 3	~~8~~ 3
Leakage (Immersion)	2	~~8~~ 2	~~16~~ 4
Vibration	9	~~16~~ 2	~~144~~ 18
Shock	11	~~8~~ 2	~~88~~ 22
Gunfire	7	~~8~~ 2	~~56~~ 14
Icing/Freezing Rain	9	~~8~~ 2	~~72~~ 18
Reliability	5	~~880~~ 3	~~4,400~~ 15
"TYPICAL"			

TOTAL SUM 224

"FORM6"

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY / CAPABILITY TITLE: Environmental Test Facility (ETF)

ANNUAL HOURS OF DOWNTIME	1	336.0
AVERAGE DOWNTIME PER DAY (line 1 / 365)	2	0.9
AVERAGE HOURS AVAILABLE PER DAY (24 / line 2)	3	23.1

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR
4	5	6	7
Low Pressure (Altitude)	3	24	72
Temperature	6	168	1,848
Temperature Shock	2	72	792
Solar Radiation	2	192	384
Rain	3	24	72
Humidity	8	336	2,688

UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL SUM)
8 346,130

See prior page

ANNUAL UNCONSTRAINED CAPACITY
9 126,337,596

Above numbers is based on equipment; facility physical constraints would limit total to 32,039,700.

Fungus	3	672	2,016
Salt Fog	1	96	96
Sand	4	48	192
Dust	4	48	192
Explosive Atmosphere	1	8	8
Leakage (Immersion)	2	8	16
Vibration	9	16	144
Shock	11	8	188
Gunfire	7	8	56
Icing/Freezing Rain	9	8	72
Reliability	5	880	4,400
"TYPICAL"			
		TOTAL SUM	

"FORM6"

See prev page

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM HAWK	23801	0	86	0	0	90	90	90	90
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
UAV	35889	1883	0	0	0	50	50	50	50
PM RADAR	62120	0	9	0	0	25	25	25	25
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
PM UAV	62303	0	110	37	20	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
BRDEC	62785	0	7	0	5	15	15	15	15
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	73	0	0	0	0	0	0
MINE WARFARE	63619	398	0	0	0	0	0	0	0
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
FLD SPT ACT - FT HOOD	65712	0	3555	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	88	84	31	7
Subtotal RDTE		16397	11145	7557	5992	9340	9377	9304	8242
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
HAWK GSE	C28100	290	0	0	0	263	257	243	235
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PM AAH	112000	0	1	0	0	0	0	0	0
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
PM UAV	523200	0	19	122	322	263	257	243	234
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
OTHER PROCUREMENT	VARIOUS	0	0	9	20	430	569	654	717
Subtotal PROCUREMENT		3027	8862	5966	4996	2625	2827	2792	2833
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
MICOM	OMA	0	0	8	0	0	0	0	0
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
FT POLK	OMA	0	95	0	0	0	0	0	0
OTEA	OMA	0	25	0	0	0	0	0	0
TRADOC	OMA	0	279	443	220	200	200	200	200
Miscellaneous OMA	OMA	0	158	18	16	802	817	799	730
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		3589	3902	1672	1021	1652	1717	1749	1780
TOTAL PARENT SERVICE		23013	23909	15195	12009	13617	13921	13845	12855
2. Other DOD									
a. USAF	USAF	1054	1452	1064	1039	556	564	599	654
b. NAVY/MARINE CORPS	USN/USMC	348	1801	1559	1216	1204	1293	1302	1291
c. Misc DOD	MISC DOD	864	111	158	145	32	37	42	47
TOTAL OTHER DOD		2266	3364	2781	2400	1792	1894	1943	1992
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		25279	27416	29778	23409	22347	20937	20451	19241

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
UAV	35889	1883	0	0	0	50	50	50	50
PM UAV	62303	0	110	37	20	25	25	25	25
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	7	8	9	2
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
FLD SPT ACT - FT HOOD	65712	0	851	0	0		0	0	0
Subtotal RDTE		2219	976	38	20	82	83	84	77
b. PROCUREMENT									
PM AAH	112000	0	1	0	0	0	0	0	0
PM UAV	523200	0	19	122	322	263	257	243	234
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
Subtotal PROCUREMENT		0	136	149	355	263	257	243	234
c. OMA and Other Army									
TRADOC	OMA	0	279	443	220	200	200	200	200
Subtotal OMA and Other Army		0	279	443	220	200	200	200	200
TOTAL PARENT SERVICE		2219	1391	630	595	545	540	527	511
2. Other DOD									
a. USAF	USAF		339		200	134	135	160	184
b. NAVY/MARINE CORPS	USN/USMC		1471	1306	916	750	800	800	800

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
c. Misc DOD	MISC DOD	864	62	24	85	12	12	12	12
TOTAL OTHER DOD		864	1872	1330	1201	896	947	972	996
3. Other U.S. Government									
4. TOTAL DIRECT USER FUNDS		3083	3263	1960	1796	1441	1487	1499	1507

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
MICOM	63322	0	49	0	0	0	0	0	0
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
MISCELLANEOUS R&D	Various	0	0	0	0	9	0	8	0
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
Subtotal RDTE		4464	1713	1263	546	1559	1550	1558	1536
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
Subtotal PROCUREMENT		53	721	1758	1434	377	379	342	337
c. OMA and Other Army									
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	58	18	16	300	300	300	300
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
Subtotal OMA and Other Army		52	2257	830	406	550	550	550	550

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
TOTAL PARENT SERVICE		4569	4691	3851	2386	2486	2479	2450	2423
2. Other DOD									
a. USAF	USAF	0	0	147	0	18	19	19	20
b. NAVY/MARINE CORPS	USN/USMC	0	13	15	0	18	19	20	20
TOTAL OTHER DOD		0	13	162	0	36	38	39	40
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		4569	4704	4013	2386	2522	2517	2489	2463

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ARMAMENTS/WEAPONS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
PM HAWK	23801	0	86	0	0	90	90	90	90
MINE WARFARE	63619	398	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	2	8	8	5
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
Subtotal RDTE		574	86	0	0	92	98	98	95
b. PROCUREMENT									
HAWK GSE	C28100	290	0	0	0	263	257	243	235
Subtotal PROCUREMENT		290	0	0	0	263	257	243	235
c. OMA and Other Army									
Subtotal OMA and Other Army		0	0	0	0	0	0	0	0
TOTAL PARENT SERVICE		864	86	0	0	355	355	341	330
2. Other DOD									
TOTAL OTHER DOD		0	0	0	0	0	0	0	0
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		864	86	0	0	355	355	341	330

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
PM RADAR	62120	0	9	0	0	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
BRDEC	62785	0	7	0	5	15	15	15	15
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
MISCELLANEOUS R&D	Various	0	0	0	0	70	68	6	0
FLD SPT ACT - FT HOOD	65712	0	2704	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
Subtotal RDTE		9140	8253	5845	5055	7295	7332	7320	6311

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
b. PROCUREMENT									
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
NAVSTAR	K47800	22	348	0	2	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
OTHER PROCUREMENT	VARIOUS	0	0	9	20	20	55	43	34
Subtotal PROCUREMENT		2684	8005	4059	3207	1312	1420	1353	1344
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
OTEA	OMA	0	25	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	100	0	0	302	317	299	230
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		1626	480	287	229	602	667	699	730
TOTAL PARENT SERVICE		13450	16738	10191	8491	9209	9419	9372	8385
2. Other DOD									
a. USAF	USAF	1054	1113	917	839	404	410	420	450
b. NAVY/MARINE CORPS	USN/USMC	348	306	210	300	400	436	444	431
c. Misc DOD	MISC DOD		49	121	60	20	25	30	35
TOTAL OTHER DOD		1402	1468	1248	1199	824	871	894	916
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		14852	18206	11439	9690	10033	10290	10266	9301

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	24	0	0	0	0	0	0
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	0	0	0	0
Subtotal RDTE		0	117	411	371	312	314	244	223
b. PROCUREMENT									
MISCELLANEOUS PROCUREMENT	Various	0	0	0	0	410	514	611	683
Subtotal PROCUREMENT		0	0	0	0	410	514	611	683
c. OMA and Other Army									
MICOM	OMA	0	0	8	0	0	0	0	0
FT POLK	OMA	0	95	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	0	0	0	200	200	200	200
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
Subtotal OMA and Other Army		1911	886	112	166	300	300	300	300
TOTAL PARENT SERVICE		1911	1003	523	537	1022	1128	1155	1206
2. Other DOD									
b. NAVY/MARINE CORPS	USN/USMC		11	41	0	36	38	38	40
TOTAL OTHER DOD		0	11	41	0	36	38	38	40
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		1911	1157	12366	9537	7996	6288	5856	5640

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24-May-94

FY92 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	TOTAL WORKYEARS
ENVIRONMENTAL TEST FACILITY	0.4	0.2	0.0	3.8	0.0	4.3
INSTRUMENTED TEST RANGE	59.9	10.5	1.6	50.8	2.2	125.0
RANGE OPERATIONS	3.0	1.1	0.2	2.7	0.1	7.1
EMI/TEMPEST TEST FACILITY	0.4	1.3	0.0	6.3	1.9	9.9
IEW TEST DIVISION	0.0	13.1	0.0	2.7	0.0	15.8
ELECTROMAGNETIC ENVIR TEST FAC	1.7	4.7	0.0	43.5	13.7	63.5
AVIONICS/GPS TEST FACILITY	1.3	0.0	0.0	4.7	0.0	6.0
	66.6	30.9	1.8	114.4	17.8	231.6
EPG CAPABILITY	44.4	47.1	1.2	242.6	15.2	350.4
TOTAL	111.0	78.0	3.0	357.0	33.0	582.0

FY93 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	
ENVIRONMENTAL TEST FACILITY	0.7	1.0	0.0	7.8	0.0	9.5
INSTRUMENTED TEST RANGE	14.3	31.3	0.9	45.6	0.6	92.6
RANGE OPERATIONS	1.8	1.6	0.0	2.7	0.1	6.2
EMI/TEMPEST TEST FACILITY	0.2	1.5	0.0	4.7	1.1	7.6
IEW TEST DIVISION	0.0	9.9	0.0	0.6	0.0	10.5
ELECTROMAGNETIC ENVIR TEST FAC	0.1	8.7	0.0	23.8	25.4	58.0
AVIONICS/GPS TEST FACILITY	0.8	0.0	0.0	7.8	0.0	8.7
	17.9	54.1	0.9	92.9	27.2	193.0
EPG CAPABILITY	3.1	17.9	2.1	302.1	14.8	339.0
TOTAL	21.0	72.0	3.0	395.0	42.0	532.0

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Document Separator

White Sands Missile Range
BRAC 95 R&D Data Call #7
(US Army Electronic Proving Ground)

PART V-3: Data Submission

R&D FACILITY / CAPABILITY TITLE:

INSTRUMENTED TEST RANGE

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SECTION 1: GUIDANCE, STANDARDS & ASSUMPTIONS

This section not provided. Please refer to the original guidance and data call for this information.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

2.1 WORKLOAD

2.1.A Historical Workload

2.1.A.1 Use the Historical Workload Form (FORM5-0 and FORM5-1). See enclosure 1.

2.1.B Forecasted Workload

2.1.B.1 Identify all appropriations (by program element) that generated testing or test support requirement, or are expected to generate such a requirement for FY92, FY93, and each year of the FY95 FYDP. See enclosure 2, pages 1 to 14; data are provided as (1) USAEPG rollup and (2) five functional areas.

2.1.B.2 Provide the amount of test work performed at your facility in FY92 and FY93. Break this out by workyears across the functional descriptors. See enclosure 2, page 15.

2.2 UNCONSTRAINED CAPACITY

2.2.A Use the Unconstrained Capacity Form (FORM6). See enclosure 1.

2.2.B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

Capacity is limited by availability of physical facilities.

2.3 TECHNICAL RESOURCES

2.3.A Does the facility have a specified war-time or contingency role established in approved war plans?

No.

2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

USAEPG would lose a major portion of their ability to perform its T&E mission to support materiel acquisition and fielding decisions.

2.3.B.1 On the test mission of any other activity?

USAEPG provides test support to all PMs, PEOs, and independent technical evaluations of electronic system on subsystems. Their mission would be degraded to the extent that test results and analysis would no longer be available to support acquisition and fielding decisions.

2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

As the prime tester of tactical equipment, USAEPG has an impact on the operational effectiveness of the Armed Forces.

SECTION 3: MEASURES OF MERIT

3.1 OVER-ARCHING MEASURES OF MERIT

3.1.A Interconnectivity

3.1.A.1 What percentage of the total test workload of this facility in FY93 involved the real-time or near real-time exchange of data or control with another facility? List the facilities you interconnect to for tests and identify how many are simultaneous activities. Identify these as to whether they are internal or external to the site.

None.

3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected. If yes, explain.

No.

3.1.B Facility Condition

3.1.B.1 Use the Facility Condition Form (FORM4). See enclosure 1.

3.1.C **Environmental and Encroachment Carrying Capacity**

3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility? If yes, explain.

No. Of the one-thousand, one-hundred and seventy-two (1,172) surveyed test sites that EPG has, only three (3) test sites are declared restricted use for daytime operations due to bat-related restriction periods from July 1 through September 30 of each year. The restricted use test sites are East 1 and 2, and West 1. During this time-frame, the lesser long-nosed (Leptonycteris curasoae yerbaabuenae) bats migrate to these particular sites to feed on the nectar from the flowers of the dense Agave stands. West 1 is restricted because of the proximity to a roosting site. This restriction is considered minor impact to testing.

3.1.C.2 How much could workload be increased before this limit would be reached? Express you answer as a percentage of your current workload.

Workload can be increased to 100% local testing in Fort Huachuca. My estimate is based on communications-electronic, unmanned aerial vehicle (UAV), and laboratory type (e.g. computer simulation, environmental, and reliability) testing. As an example, abatement procedures are in place for night testing/operations of UAVs during July 1 to September 30.

3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire, and describe them.

Yes. There are two voluntary agreements. These are with:

(1) The U.S. Fish and Wildlife Service to protect roost sites and forage habitat for the lessor long-nosed bat. There is no expiration date for this agreement.

(2) The Arizona Archeological Society to perform investigation/archeological studies conducted by surveys, excavations and mitigation of possible historical and/or archeological importance. There is no expiration date for this agreement.

3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

a. State population was considered and not international population. Due to the location of Fort Huachuca, if we take a 50 miles radius, with Fort Huachuca being the center of the circumference, the southern-most portion of the circumference falls into international lines (Republic of Mexico).

b. The total population within a 50 miles radius is 97,624. The 50 miles radius encompasses the counties of Cochise, portions of Pima, and Santa Cruz.

c. The total population within a 100 miles radius is approximately 577,500. The 100 miles radius encompasses the counties of Cochise and portions of Pima, and Santa Cruz.

d. The total population within a 150 miles radius is 820,734. The 150 miles radius encompasses the counties of Cochise and Pima, Graham, and, Pinal.

e. The total population within a 200 miles radius is 2,942,835. The 200 miles radius encompasses the counties of Cochise, Santa Cruz, Pima, Graham, Pinal, Gila, and portions of Maricopa.

f. Cochise County consists of the following populated areas: Benson, Bisbee, Bowie, Cochise, Douglas, Dragoon, Elfrida, Hereford, Huachuca City, McNiel, Naco, Pearce, Pirtleville, Pomerene, Saint David, San Simon, Sierra Vista, Tombstone, and Willcox. Fort Huachuca was annexed by Sierra Vista in 1971.

g. Graham County consists of the following populated areas: Bylas, Central, Fort Thomas, Pima, Safford, Soloman, and Thatcher.

h. Maricopa County (only those that fell into the radius of consideration) consists of the following populated areas: Arlington, Avondale, Buckeye, Cashion, Chandler, El Mirage, Gila Bend, Gilbert, Glendale, Mesa, Phoenix, Scottsdale, and Tempe.

i. Pima County consists of the following populated areas: Ajo, Arivaca, Cortaro, Green Valley, Lukeville, Marana, Mount Lemon, Rillito, Sahuarito, Sasabe, Sells, Topawa, and Tucson.

j. Pinal County consists of Casa Grande, Coolidge, Eloy, Florence, Kearny, Mammoth, Maricopa, Oracle, Picacho, Red Rock,
Sacaton, San Manuel, Stanfield, Superior, and Valley Farms.

k. Santa Cruz County consists of the following populated areas: Elgin, Nogales, Patagonia, Sonoita, and Tumacacori.

3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and the frequency of use for each that affect of could affect mission accomplishment in your air, land, or sea space.

a. Commercial air travel is available from Fort Huachuca to Phoenix.

b. Arizona Highway 90 feeds Fort Huachuca from the north, where it originates from Interstate 10, 30 miles away. This is the major route leading into the reservation.

c. Arizona Highway 92 originates at the Fort Huachuca east gate and proceeds east and then south around the northern and eastern boundaries of the City of Sierra Vista.

SENSITIVE/CLOSE HOLD

Errata Sheet # 4 of 10

1. This Errata Sheet applies to the following EPG R&D Faciilty/Capability Data Submissions:

Range Operations Capabilities
Environmental Test Facility
Instrumented Test Range
Electromagnetic Environmental Test Facility
EMI/TEMPEST Test Capabilities
Intelligence & Electronic Warfare
Avionics/ Global Positioning System
General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.1.d.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

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c. Black Tower Complex. The Black Tower Complex is dedicated for the use of all UAV testing and training on Fort Huachuca. This complex is composed of 3 hangars, parachute tower, hazardous material storage facility, explosive storage bunker, 2 runways (1 *dirt runway 220' x 2000' (as of Jul 94)*, and a paved runway, 75' x 3000'). In addition, the following are available to UAV testing: frequency coordination, precision tracking, area surveillance, real-time and post-test digital data, communications and timing, photographic and video support, optical/infrared targets, and radar/communications threat environment.

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several sections skipped

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3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes, explain.

a. Yes. The platform is being completely rebuilt and should increase its capacity. The west turntable will be going through a major rehabilitation.

b. *The UAV dirt runway expansion to 2,000 feet will be complete in July of 1994.*

d. Fry Boulevard, the main street of Sierra Vista, originates at the Fort Huachuca main gate and proceeds due east through the heart of the city.

e. Buffalo Soldier Trail also originates at the Fort Huachuca main gate, proceeds south and then east around the southern boundary of the city.

f. Garden Avenue runs north and south and connects Fort Huachuca's main and east gates.

g. A dirt road originates at Fort Huachuca's west gate and proceeds west into the Coronado National Forest.

h. The commercial use of restricted areas R-2303A and R-2303B has negligible impact on the testing that EPG conducts. The ingress/egress of commercial traffic to Sierra Vista Airport is deconflicted by coordination with Libby Tower.

3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

None.

3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

None.

3.1.D Specialized Test Support Facilities and Targets

see prev page

3.1.D.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

Yes.

a. The Instrumented Test Range (ITR) is a government owned, contractor operated electronic testing range comprising instrumentation deployed as required for specific testing programs. The major complexes of the ITR include precision radar tracking systems, a position location system, photo optical instrumentation, telemetry, air-to-ground communications (include radios at Fort Huachuca, Mount Lemmon and Oatman Mountain), and point-to-point radios, HF and VHF communications, a 36 channel microwave system, and the following facilities: Antenna Test, Radar Geometric Fidelity, Radar Resolution, Spatial Resolution, Realistic Battlefield Environment, and Infrared and Day TV Field Equivalent Bar Target Compound. The ITR provides launch and recovery facilities for unmanned aircraft, test control and data reduction, surveillance radars, low and high altitude tracking, communication environments, radar environments, radio frequency generation and monitoring facilities, and other instrumentation equipped for evaluation of electronic countermeasures and electronic counter-countermeasures.

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b. Radar Geometric Fidelity Facility. The Radar Geometric Fidelity Facility occupies 25 square miles on the Willcox Playa, a large dry lake bed approximately 25 square miles east of Fort Huachuca. The facility provides a standard for measuring the fidelity of airborne mapping systems. It also contains a one square mile mineral deposit area for testing and evaluating earth penetration type radars. The surface of the Playa is almost perfectly flat, varying in elevation of less than two feet over its entire 75 square miles. The Playa is ideal for radar testing because of its specular behavior to x and K band radars. The location of the total system is accurate to first order, class 3, determined by national survey. Within the system itself, the accuracy is first order. Class 2.

c. Radar Resolution Facility. The Radar Resolution Facility is used to measure simultaneously the range and azimuth resolution of an airborne radar. Numerous reflector sizes can give various radar target cross sections. The radar spoke consists of four arms which meet at right angles. Along each of four arms at 143 sites spaced at increasing distances ranging from one meter near the apex to a maximum of 512 meters at the ends of the arms. At each site, a corner reflector, a whirli-reflector which can be electrically rotated, or a sphere can be positioned.

d. Spatial Resolution Facility. The Spatial Resolution Facility is used to measure spatial resolution and spatial distortion of photographic, television, and infrared equipment. The facility consists of a flat concrete surface forming three wedges 678 feet long by 200 feet wide. One wedge is painted with aluminum horizontal and vertical bars for infrared measurements, another with white bars on black background for photographic measurements, the third is painted with two shades of gray paint. Another part of the facility consists of an infrared target array and radiation measurement instrumentation required to evaluate the thermal sensitivity and geometric resolution of a broad class of airborne infrared surveillance systems. The target array consists of a series of active targets for short wave length IR systems and a series of passive targets for mid - to long wave length IR systems. Target controllers provide for setting temperature differentials of one degree to 40 degrees C. The canvas passive array consists of a 100-foot edge target for edge analysis and a series of six 40 foot by 40 foot panels providing a grey scale in the infrared spectrum. The emulsion-coated canvas panels have been calibrated by NBS.

e. Realistic Battlefield Environment. The Realistic Battlefield Environment (RBE) consists of Communications Environment Systems (CES) and foreign vehicles. The CES consist of approximately 200 foreign radio systems and US-manufactured surrogates in the HF, VHF, and UHF frequency ranges, normally installed in tactical vehicles deployed to any one of the over 2,100 survey sites in and around the Fort Huachuca area. The CES can emulate a sense threat RF environment for testing intelligence and electronic warfare (IEW) systems, and may be used statically or moving. RBE foreign vehicles consist primarily of former Warsaw Pact and Sino-Soviet tactical wheeled and tracked armored personnel carriers and trucks, and normally are used for systems under test requiring visual, infrared, audio, and radar cross section signatures.

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f. Infrared and Day TV Field Equivalent Bar Target Compound. This compound was constructed to house the numerous bar targets that are required to validate airborne and ground based optical sensors.

3.1.D.2 Are specialized targets required to support this facility, If yes, explain.

a. TSPI. No.

b. Radar Geometric Fidelity Facility. No.

c. Radar Resolution Facility. No.

d. Spatial Resolution Facility. No.

e. Realistic Battlefield Environment. Yes. Emerging IEW systems under test demand authentic signatures for those threat systems for which they were designed. The RBE meets this demand by providing actual former Warsaw Pact and Sino-Soviet target signatures.

f. Infrared and Day TV Field Equivalent Bar Target Compound. Yes.

3.1.D.2.A Have the specialized targets been validated? If yes, by whom?

a. Realistic Battlefield Environment. Yes. Actual threat systems were validated by DIA.

b. Infrared and Day TV Field Equivalent Bar Target Compound. Yes. The target performance has been validated by both U.S.A. MICOM and USAEPG.

3.1.E **Expandability**

3.1.E.1 Other than the expandability inherent in the unconstrained capacity (FORM 6) discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? If yes, explain.

a. TSPI. Yes. More than one test project can be run because several radars are available.

b. Radar Geometric Fidelity Facility. Yes. The number of test projects that can be run at the same time is limited only by both ground and air space. This is not a problem of clearance, merely a safety precaution so two aircraft are not over the area at the same time.

c. Radar Resolution Facility. Yes. More than one test project can occur at the Radar Resolution Facility providing test parameters and requirements are similar.

d. Spatial Resolution Facility. Yes. More than one test project can be run simultaneously. Airspace is a limitation in that no two aircraft can be at the same altitude at the same time.

e. Realistic Battlefield Environment. Yes. Multiple test projects can and have been conducted utilizing all the RBE simultaneously.

3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? If yes, identify by T&E functional area and test type.

No.

3.1.E.2 Are the airspace, land, and water areas adjacent to areas under DoD control available and/or suitable for physical expansion to support new missions or increased footprints. If yes, explain.

Yes, as the facility is on a military reservation, both airspace and land area can be expanded through request and negotiation; except the restricted airspace R-2303A and R-2303B is under FAA control with Fort Huachuca as the primary user. Through coordination with the FAA, these areas could be expanded and/or changed within certain limitations.

3.1.E.3 Is the facility equipped to support secure operations. If yes, to what level of Classification (Confidential -> Special Access)?

Yes, up to and including SAR.

see page prev 3.1.D.1

3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes, explain.

No.

3.1.F **Uniqueness**

3.1.F.1 Is this a one-of-a-kind facility within the DoD? If yes, explain.

No.

3.1.F.1.A Within the U.S. Government? If yes, explain

No.

3.1.F.1.B Within the U.S? If yes, explain.

No.

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3.1.F.2 Are you currently providing support to DoD users outside your Military Department? If yes, indicate the percentage of total workload in FY92 and FY93 by Military Department.

3.1.G **Available Air, Land, and Sea Space**

3.1.G.1 How many square miles of air, land, and sea space are available to support test operations?

On the reservation, 122 square miles (78,000 acres) of real estate are available to support testing. An additional 45 square miles (29,000 acres) of land are leased from federal, state, and local agencies throughout southern Arizona, from the New Mexico to California state lines. Also available on an as-needed basis are 39,000 square miles (25 million acres) of land obtainable from the Bureau of Land Management (BLM) through negotiation and a Memorandum of Agreement. In addition to the local airspace, 891.5 square miles, Military Operations Areas to the west have been used in the past to support tests. Use of these areas, in excess of 1,800 square miles, require coordination with several other agencies.

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3.1.G.2 Who owns or controls the land under the Restricted Airspace you use?

The Ft. Huachuca military reservation is comprised of 122 square miles (78,000 acres) of real estate. The remaining real estate available to support testing is leased from federal, state, and local agencies.

3.1.G.3 How much of this (total air space available to support operations) is Restricted Airspace, and what altitude limits are associated with the restricted areas?

The restricted area R-2303-A, 261.9 square miles, is within the boundaries of R-2303B, which is 891.5 square miles. R-2303-A altitude limits are surface to 15,000 ft MSL and R-2303B is 15,000 to 45,000 ft MSL.

3.1.G.4 Do you have special use airspace other than supersonic airspace? If yes, for what types of tests? What are its dimensions? Will it support simultaneous users? Yes.

Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.1.G.5 Is the airspace over land or water. List the number of square miles over each. All over land.

All over land -- 891.5 square miles.

3.1.G.6 Identify known or projected airspace problems that may prevent accomplishing your mission.

No known or projected problems.

3.1.G.7 What is the maximum straight line segment in your airspace in nautical miles? 52.6 nautical miles.

52.6 nautical miles.

3.1.G.8 What public airspace have you used for overflight of weapons systems in the past? What was the nature of those tests? Do you anticipate being able to use that same public airspace for similar tests in the future? Yes or no to each.

Two public airspace corridors, V-393 and V-395 between Tucson and Nogales, AZ, have been used in the past. The Unmanned Aerial Vehicle Short Range crossed those corridors and operated in the MOAs to the west during the maximum range test. Yes.

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3.1.H Geographic/Climatological Features

3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap of the earth). Identify all of the following that apply: mountains, forest, jungle, cultivated lowland, swamp, riverine, desert, and sea. State the area of each in square miles.

a. The Fort Huachuca military reservation is geographically located in the inter-mountain desert plateau region between the southern most extent of the Rocky mountains and the northern most extent of the Sierra Madres. The area of land covered by the installation is 115 square miles. The elevation varies from 3,925 feet to 7,709 feet above sea level with 30% of the area located in rugged mountainous terrain. The remaining terrain is typified by rolling hills gradually flattening away from the mountains. Vegetation in the area is lower elevations. Above 5,000 feet Black Oak and Juniper are common and above 6,500 feet yellow pine is predominate.

b. The word "Huachuca" means "Place that Thunders" and from June to September Fort Huachuca lives up to its name; 85 to 99 percent of the annual lightening activity occurs during this time. Activity can range from isolated mountain thundershowers to powerful Mesoscale Convective Complexes. Thunderstorms are DANGEROUS, due to the potential for lightning strikes, range and forest fires, strong winds, hail, heavy precipitation and flash flooding.

c. Precipitation in the area varies dramatically from season to season and from year to year. The average annual precipitation from 1956 to present is 14.91 inches. Measurable precipitation can occur during every month of the year, but is most likely to occur in July and August. 50 to 75 percent of the annual precipitation recorded typically falls during these two months. From November to late April, depending on the temperature, snow showers can occur with accumulations frequent above 5,000 feet.

d. Wind direction and speed are greatly influenced by seasonal, diurnal and orographic effects. Typically winds in the morning are from the southeast at 5 to 10 knots shifting to the southwest at 8 to 16 with occasional gusts to 24 knots. During the fall, winter, and spring strong wind events with winds from the south to southwest at 20 to 30 with gusts in excess of 50 knots and a duration of several hours to several days can occur 10 to 25 percent of the time. During the summer strong down burst winds associated with the thunderstorms with instantaneous gusts in excess of 60 knots can occur with little warning.

e. Temperatures in the local area are moderate with the extremes ranging from a high of 107 to a low of 9 degrees. Average summertime temperatures range from highs in the upper eighties to lows in the mid-sixties. Average wintertime temperatures range from highs in the low sixties to lows in the mid-thirties. The average temperature for the year is 62 degrees.

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f. Fort Huachuca is an excellent location for a wide variety of test activities with environmental considerations. Most of the moderate to severe weather conditions discussed above are of relatively short duration, and with proper planning, mission delays can be held to a minimum all year round.

3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of tests?

No.

3.1.H.3 Do you have to go to other geographical locations to satisfy test requirements? If yes, explain. If yes, provide as a percent of overall workload per year for the last 8 years.

No.

3.1.H.4 Number of days per year with average temperature below 32 degrees F? Between 32 and 95 degrees F? Above 95 degrees F?

All 365 days in an average year have a daily average temperature between 32 and 95 degrees fahrenheit. During the entire 35 year period covered by our climatological database, approximately 10 days had daily averages below 32 degrees which equates to one such day every 3 - 4 years. The highest daily average temperature during the same period has been 90 degrees which occurs only once or twice each year. The hottest weather at this location is accompanied by low relative humidity which results in good nighttimes cooling after a hot day.

3.1.H.5. Number of days per year with average relative humidity below 30%? Between 30 and 80%? Above 80%

The average number of days per year with an average relative humidity below 30% is 150. Humidity can occasionally fall below 10% during these days. An average of 194 days per year have average relative humidities between 30% and 80%. Finally, 21 days per year, on average, have an average relative humidity above 80%.

3.1.H.6 Number of test missions per year (85 - 93) canceled due to weather?

Most weather related test mission cancellations are the result of weather conditions at locations other than Fort Huachuca. During the period of review, 24 missions (mostly UAV missions) were canceled due to adverse weather conditions. Generally, most projects will go into a hold until the adverse conditions subside or they can be scheduled around expected adverse weather conditions without having to cancel.

3.1.H.7 Number of test days per year (85 - 93) canceled due to weather?

During the period of review, there have been no full 24 hour days during which testing could not be conducted due to adverse weather conditions. Local forecasting

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capability exists that allows weather sensitive test operations to be scheduled around periods of expected adverse weather conditions.

3.1.H.8 Number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

Based upon the 35 year climatological database, there are no full 24 hour periods during which the visibility drops below 3 miles. Restricted visibility occurs most often during periods of showery types of precipitation which occur primarily during the winter and summer rainy seasons. Occurrences of fog occur primarily during the winter and are of short duration. Based upon climatology, 2.3% or 197.6 hours have visibility below 3 miles in an average year. This equates to a total of 8.2 days. Visibility of 1-3 miles occurs, on average, a total of 109.6 hours, while visibility less than one mile occurs a total of 88.1 hours a year or about 1% of the time on average. December is the month with the highest number of occurrences with 29.8 hours with visibility o 1-3 miles and 14.9 hours with visibility below 1 mile on average. Visibility below 3 miles has never been reported in June.

3.1.H.9 What is the average number of flying days available per year for flight tests? Provide historical average from the past eight years.

The average number of flying days available per year based solely upon weather conditions during the period of review is 353. This equates to 96.7% of all days in a year being available. The primary weather condition that may make a day unavailable is strong wind since all other adverse weather conditions are intermittent in nature.

3.1.H.10 What percentage of the time are your test operations restricted due to weather?

Weather conditions that restrict test operations are high winds, thunderstorms, and low visibility. High winds occur, on average, 10% of all days of the year and last about 8 hours per day for 3.3% of the total number of hours in a year. Thunderstorms occur on 60 days a year with an average duration of 2 hours for 1.4% of the hours in a year. Low visibility, as indicated above, occurs 2.3% of the total number of hours in a year. This gives a total of 7% of all hours in a year where test operations would be restricted by weather. Heavy snow is very rare occurring much less the time in a given year.

3.2 AIR VEHICLES

3.2.A Supersonic Airspace

3.2.A.1 Do Supersonic Corridors or areas exist?

Yes. Two low level, high speed jet visual route VR-260 and VR-263.

SENSITIVE/CLOSE HOLD

Errata Sheet # 5 of 10

1. This Errata Sheet applies to the following EPG R&D Facility/Capability Data Submission:

   Range Operations Capabilities
   Environmental Test Facility
   Instrumented Test Range
   Enectromagnetic Environmental Test Facility
   EMI/TEMPEST Test Capabilities
   Intelligence & Electronic Warfare
   Avionics/Global Positioning Systems
   General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.2.A.6 What is the maximum number of simultaneous users?

Number of simultaneous users is limited by USAF or other military department rules on supersonic flight in restricted corridors. No specific limitation on the number of simultaneous users is available to EPG.

3.2.B **Airfield and Facility Characteristics**

3.2.B.1 Provide a brief description of your airfield and support facilities.

Libby Army Airfield is a Joint Use Airfield *owned by Ft. Huachuca (TRADOC)* and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be all concrete when completed (FY95) and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and belongs to Ft. Huachuca.

3.2.A.2 Where are they located relative to the airfield?

VR-260 is located to the north and cuts across the northwest corner of R2303-B below the airspace floor. VR-263 is located to the south and cuts across the southeast and southwest corners of R2303-B below the airspace floor.

3.2.A.3 At what altitude (upper and lower altitude)?

VR-260 is 100 ft AGL to 7000 ft AGL and VR-263 is 100 ft AGL to 8500 ft MSL.

3.2.A.4 Are they over land or water? What size and shape (length and width)?

All over land. Visual flight routes only.

3.2.A.5 Are there restrictions you must observe to use this space? If yes, explain. No known current or projected need exists to use these areas as they are below our local airspace.

3.2.A.6 What is the maximum number of simultaneous users? see prev page

Unknown.

3.2.B **Airfield and Facility Characteristics**

see prev page

3.2.B.1 Provide a brief description of your airfield and support facilities.

Libby Army Airfield is a Joint Use Airfield and is not a TECOM asset. Libby Field has the following: three runways, 02/20, 4,300 feet; 29/11, 5,365 feet; and 26/08, 12,001 feet. Field elevation is 4,665 feet MSL; overrun lengths 02/20, 200 feet; 29/11, 200 feet; 26/08, 1,000 feet. Landing aids are a NDB, TACAN, VOR, and a PAR. 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be all concrete when completed and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and does not belong to the Proving Ground.

3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

Hubbard assault strip is 5 miles from Libby and could be used for an emergency landing.

3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

Libby Field is situated within R2303-B.

3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

Libby Field is unique because of length, position, relative to the restricted airspace and the weather found in southern Arizona.

3.2.B.5 Is there a size, weight, maintenance, or mission limitation that would affect test operations? If yes, describe.

No.

3.2.B.6 Including hangers an ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise Missiles?

Excluding ramp areas, enough ramp area exists to support approximately 20 fighter-size aircraft, 10 multi-engine aircraft, or 25 rotary wing aircraft.

3.2.C. **Test Operations**

3.2.C.1 What types of air vehicle testing can be supported? Describe?

Unmanned Air Vehicles, Space Shuttle, SR-71, Rotary Wing, and some Fixed Wing.

3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

Yes.

3.2.C.3 What kinds, numbers of aircraft and mix of same can be supported (manned and unmanned)?

Any type of unmanned vehicle can be supported. Currently, only the aircraft listed in 3.2.C.8 below can be supported.

3.2.C.4 Does UAV and or rotary wing operations pose any limitations on other types of missions? If yes, explain.

No.

3.2.C.5 What sorts of missions can be flown within local airspace?

Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

Three.

3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

Three.

3.2.C.8 Identify the number, types, and owners of aircraft at your installation. Five each OV-1D, two each UH-1, three each EH-60, four each C-12 aircraft are owned by the Intelligence Center and Fort Huachuca, two each UH-1 and two O-2A aircraft are owned by the Proving Ground. Four each C-12 aircraft are owned by CASSO.

3.3 ELECTRONIC COMBAT

3.3.A Threat Environment

This subject is addressed in Part V-6, Intelligence & Electronic Warfare, of this report.

3.4 ARMAMENTS / WEAPONS

Our tests of armaments and weapons systems generally consist of antenna, performance, environmental, and EM tests of electronic systems. The information requested in this section does not apply.

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GENERAL INFORMATION

FACILITY / CAPABILITY TITLE: Instrumented Test Range (ITR)

ORIGIN DATE: 20 May 1994

Service: U.S. Army (USAEPG) **Organization / Activity:** USA Electronic Proving Ground
Location: Fort Huachuca, Arizona

T&E Functional Area: Electronic Combat Air Vehicles **UIC:** W04YAA

T&E Test Facility Category: MF/OAR

	T&E	S&T	DE	NE	T&D	OTHER	
Percentage Use:	90				5	5	= 100
Breakout by T&E Functional Area (%)							
Air Vehicles	30				5		
Armament / Weapons	10						
Electronic Combat	30						
Other T&E	15					5	
Other	5						

Note: Total in Breakout must equal "Percentage Use" line entry.

"FORM1" TAB: page:

TECHNICAL INFORMATION

FACILITY / CAPABILITY TITLE: Instrumented Test Range (ITR)

Facility Description; including mission statement: The Instrumented Test Range (ITR) is a government owned, contractor operated electronic testing range comprising instrumentation deployed as required for specific testing programs. The major complexes of the ITR include precision radar tracking systems, a position location system, photo optical instrumentation, telemetry, air-to-ground mobile and point-to-point radios, and the following facilities: Antenna Test, Radar Geometric Fidelity, Radar Resolution, Spatial Resolution, Realistic Battlefield Environment, and Infrared and Day TV Field Equivalent Bar Target Compound. The ITR provides launch and recovery facilities for unmanned aircraft, test control and data reduction, surveillance radars, low and high altitude tracking, communication environments, radar environments, radio frequency generation and monitoring facilities, and other instrumentation equipped for evaluation of electronic countermeasures and electronic counter-countermeasures.

Interconnectivity / Multi-Use of T&E Facility: The ITR is an integral part of the National Range system, and interconnects with the other national ranges including Cape Canaveral, FL, and Vandenberg AFB, CA. ITR data is also provided to National Ranges covering areas in portions of five states adjacent to Arizona.

Type of Tests Supported: Time Space Position Information, Communications, Telemetry, Radar Tests, UAV, Intelligence and Electronic Warfare, Command and Control, Computers.

Summary of Technical Capabilities: Precision Tracking Radar, Position Location System, Real Time Graphics Display System (RTGDS), Computer Network, Program Development and PLS System Interconnect, Test Communications (Microwave and Radio), Area Surveillance, General Purpose Radar Simulator (GPRS), Automatic Emitter Systems, Realistic Battlefield Environment (RBE), Timing, Power Generators, Airspace, Ground Targets, Site Support, Fabrication, Set-Up, Photo/Optical, Survey Services, Logistics, Spatial Resolution Facility, Radar Geometric Fidelity Facility, Radar Resolution Facility, Program Design/Analysis Functions.

Keywords: Telemetry, Radar, Surveillance, Radios, Tracking, Electronic Countermeasure, Electronic Warfare, Intelligence, Time-space-position information, Communications.

"FORM2" **TAB:** **page:**

ADDITIONAL INFORMATION

FACILITY / CAPABILITY TITLE: Instrumented Test Range (ITR)

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	0	0
Civilian	0	0	0	0	0	0	0
Contractor	100	80	76	72	58	48	38
Total	100	80	76	72	58	48	38

Total Square Footage: 39,633

Test Area Square Footage: 38,433 **Office Space Square Footage:** 1,200

Tonnage of Equipment: Unknown **Volume of Equipment (cu.ft.):** Unknown

Annual Maintenance Cost: _____ **Estimated Moving Cost:** Unknown

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
		$100,000	$100,000	$50,000		

"FORM3" TAB: page:

FACILITY CONDITION

FACILITY / CAPABILITY TITLE: Instrumented Test Range (ITR)

AGE: 1961 **REPLACEMENT VALUE:** $11,786,900

MAINTENANCE & REPAIR BACKLOG: None.

DATE OF LAST UPGRADE: October 1993

NATURE OF LAST UPGRADE: Control Room.

MAJOR UPGRADES PROGRAMMED

1. **UPGRADE TITLE:** None.

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. **UPGRADE TITLE:**

   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: Instrumented Test Range (ITR)

T&E FUNCT. AREA		FISCAL YEAR 86	87	88	89	90	91
AIR VEHICLES	DIRECT LABOR	44,483	32,131	19,021	71,273	165,144	40,308
	TEST HOURS						
	MISSIONS						
ELECT. COMBAT	DIRECT LABOR	35,443	71,579	100,978	41,080	65,069	31,114
	TEST HOURS						
	MISSIONS						
ARMNT/WEAPONS	DIRECT LABOR	0	0	0	0	0	53
	TEST HOURS						
	MISSIONS						
OTHER T&E	DIRECT LABOR	26,330	37,563	63,968	202,089	264,519	53,311
	TEST HOURS						
	MISSIONS						
OTHER	DIRECT LABOR	24572	24288	6048	0	24908	2732
	TEST HOURS						
	MISSIONS						

"FORM5-0" TAB: page:

HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: Instrumented Test Range (ITR)

T&E FUNCT. AREA		FISCAL YEAR 92	93	94	95	96	97
AIR VEHICLES	DIRECT LABOR						
	TEST HOURS	104224	24832				
	MISSIONS						
ELECT. COMBAT	DIRECT LABOR						
	TEST HOURS	258105	54423				
	MISSIONS						
ARMNT/WEAPONS	DIRECT LABOR						
	TEST HOURS	2814	1565				
	MISSIONS						
OTHER T&E	DIRECT LABOR						
	TEST HOURS	88315	79264				
	MISSIONS						
OTHER	DIRECT LABOR						
	TEST HOURS	3815	1002				
	MISSIONS						

"FORM5-1" TAB: page:

SENSITIVE/CLOSE HOLD

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY / CAPABILITY TITLE: Instrumented Test Range (ITR)

ANNUAL HOURS OF DOWNTIME	1	~~223~~ 223
AVERAGE DOWNTIME PER DAY (line 1 / 365)	2	.61
AVERAGE HOURS AVAILABLE PER DAY (24 / line 2)	3	23.39

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL SUM)
4	5	6	7	8 ~~3275~~ 6362
FLIGHT	4	~~15~~ 14	~~56~~ 56	
GROUND	4	~~16~~ 54	~~64~~ 216	
				ANNUAL UNCONSTRAINED CAPACITY 2,322,130
				9 ~~1,196,375~~
"TYPICAL"				
		TOTAL SUM	~~140~~ 272	
"FORM6"			TAB:	page:

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DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY / CAPABILITY TITLE: Instrumented Test Range (ITR)

ANNUAL HOURS OF DOWNTIME	1	22.3
AVERAGE DOWNTIME PER DAY (line 1 / 365)	2	.61
AVERAGE HOURS AVAILABLE PER DAY (24 / line 2)	3	23.39

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL SUM)
4	5	6	7	8 3275
FLIGHT	4	19	76	
GROUND	4	16	64	
				ANNUAL UNCONSTRAINED CAPACITY 9 1,195,375
"TYPICAL"				
		TOTAL SUM	140	
"FORM6"			TAB:	page:

See next page

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM HAWK	23801	0	86	0	0	90	90	90	90
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
UAV	35889	1883	0	0	0	50	50	50	50
PM RADAR	62120	0	9	0	0	25	25	25	25
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
PM UAV	62303	0	110	37	20	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
BRDEC	62785	0	7	0	5	15	15	15	15
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	73	0	0	0	0	0	0
MINE WARFARE	63619	398	0	0	0	0	0	0	0
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
FLD SPT ACT - FT HOOD	65712	0	3555	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	88	84	31	7
Subtotal RDTE		16397	11145	7557	5992	9340	9377	9304	8242
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
HAWK GSE	C2B100	290	0	0	0	263	257	243	235
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PM AAH	112000	0	1	0	0	0	0	0	0
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
PM UAV	523200	0	19	122	322	263	257	243	234
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
OTHER PROCUREMENT	VARIOUS	0	0	9	20	430	569	654	717
Subtotal PROCUREMENT		3027	8862	5966	4996	2625	2827	2792	2833
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
MICOM	OMA	0	0	8	0	0	0	0	0
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
FT POLK	OMA	0	95	0	0	0	0	0	0
OTEA	OMA	0	25	0	0	0	0	0	0
TRADOC	OMA	0	279	443	220	200	200	200	200
Miscellaneous OMA	OMA	0	158	18	16	802	817	799	730
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		3589	3902	1672	1021	1652	1717	1749	1780
TOTAL PARENT SERVICE		23013	23909	15195	12009	13617	13921	13845	12855
2. Other DOD									
a. USAF	USAF	1054	1452	1064	1039	556	564	599	654
b. NAVY/MARINE CORPS	USN/USMC	348	1801	1559	1216	1204	1293	1302	1291
c. Misc DOD	MISC DOD	864	111	158	145	32	37	42	47
TOTAL OTHER DOD		2266	3364	2781	2400	1792	1894	1943	1992
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		25279	27416	29778	23409	22347	20937	20451	19241

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
UAV	35889	1883	0	0	0	50	50	50	50
PM UAV	62303	0	110	37	20	25	25	25	25
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	7	8	9	2
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
FLD SPT ACT - FT HOOD	65712	0	851	0	0		0	0	0
Subtotal RDTE		2219	976	38	20	82	83	84	77
b. PROCUREMENT									
PM AAH	112000	0	1	0	0	0	0	0	0
PM UAV	523200	0	19	122	322	263	257	243	234
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
Subtotal PROCUREMENT		0	136	149	355	263	257	243	234
c. OMA and Other Army									
TRADOC	OMA	0	279	443	220	200	200	200	200
Subtotal OMA and Other Army		0	279	443	220	200	200	200	200
TOTAL PARENT SERVICE		2219	1391	630	595	545	540	527	511
2. Other DOD									
a. USAF	USAF		339		200	134	135	160	184
b. NAVY/MARINE CORPS	USN/USMC		1471	1306	916	750	800	800	800

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
c. Misc DOD	MISC DOD	864	62	24	85	12	12	12	12
TOTAL OTHER DOD		864	1872	1330	1201	896	947	972	996
3. Other U.S. Government									
4. TOTAL DIRECT USER FUNDS		3083	3263	1960	1796	1441	1487	1499	1507

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
MICOM	63322	0	49	0	0	0	0	0	0
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
MISCELLANEOUS R&D	Various	0	0	0	0	9	0	8	0
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
Subtotal RDTE		4464	1713	1263	546	1559	1550	1558	1536
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
Subtotal PROCUREMENT		53	721	1758	1434	377	379	342	337
c. OMA and Other Army									
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	58	18	16	300	300	300	300
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
Subtotal OMA and Other Army		52	2257	830	406	550	550	550	550

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
TOTAL PARENT SERVICE		4569	4691	3851	2386	2486	2479	2450	2423
2. Other DOD									
a. USAF	USAF	0	0	147	0	18	19	19	20
b. NAVY/MARINE CORPS	USN/USMC	0	13	15	0	18	19	20	20
TOTAL OTHER DOD		0	13	162	0	36	38	39	40
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		4569	4704	4013	2386	2522	2517	2489	2463

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SENSITIVE/CLOSE HOLD

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ARMAMENTS/WEAPONS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
PM HAWK	23801	0	86	0	0	90	90	90	90
MINE WARFARE	63619	398	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	2	8	8	5
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
Subtotal RDTE		574	86	0	0	92	98	98	95
b. PROCUREMENT									
HAWK GSE	C28100	290	0	0	0	263	257	243	235
Subtotal PROCUREMENT		290	0	0	0	263	257	243	235
c. OMA and Other Army									
Subtotal OMA and Other Army		0	0	0	0	0	0	0	0
TOTAL PARENT SERVICE		864	86	0	0	355	355	341	330
2. Other DOD									
TOTAL OTHER DOD		0	0	0	0	0	0	0	0
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		864	86	0	0	355	355	341	330

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
I. PARENT SERVICE									
a. RDTE									
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
PM RADAR	62120	0	9	0	0	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
BRDEC	62785	0	7	0	5	15	15	15	15
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
MISCELLANEOUS R&D	Various	0	0	0	0	70	68	6	0
FLD SPT ACT - FT HOOD	65712	0	2704	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
Subtotal RDTE		9140	8253	5845	5055	7295	7332	7320	6311

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
b. PROCUREMENT									
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
OTHER PROCUREMENT	VARIOUS	0	0	9	20	20	55	43	34
Subtotal PROCUREMENT		2684	8005	4059	3207	1312	1420	1353	1344
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
OTEA	OMA	0	25	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	100	0	0	302	317	299	230
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		1626	480	287	229	602	667	699	730
TOTAL PARENT SERVICE		13450	16738	10191	8491	9209	9419	9372	8385
2. Other DOD									
a. USAF	USAF	1054	1113	917	839	404	410	420	450
b. NAVY/MARINE CORPS	USN/USMC	348	306	210	300	400	436	444	431
c. Misc DOD	MISC DOD		49	121	60	20	25	30	35
TOTAL OTHER DOD		1402	1468	1248	1199	824	871	894	916
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		14852	18206	11439	9690	10033	10290	10266	9301

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	24	0	0	0	0	0	0
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	0	0	0	0
Subtotal RDTE		0	117	411	371	312	314	244	223
b. PROCUREMENT									
MISCELLANEOUS PROCUREMENT	Various	0	0	0	0	410	514	611	683
Subtotal PROCUREMENT		0	0	0	0	410	514	611	683
c. OMA and Other Army									
MICOM	OMA	0	0	8	0	0	0	0	0
FT POLK	OMA	0	95	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	0	0	0	200	200	200	200
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
Subtotal OMA and Other Army		1911	886	112	166	300	300	300	300
TOTAL PARENT SERVICE		1911	1003	523	537	1022	1128	1155	1206
2. Other DOD									
b. NAVY/MARINE CORPS	USN/USMC		11	41	0	36	38	38	40
TOTAL OTHER DOD		0	11	41	0	36	38	38	40
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		1911	1157	12366	9537	7996	6288	5856	5640

24-May-94

FY92 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	TOTAL WORKYEARS
ENVIRONMENTAL TEST FACILITY	0.4	0.2	0.0	3.8	0.0	4.3
INSTRUMENTED TEST RANGE	59.9	10.5	1.6	50.8	2.2	125.0
RANGE OPERATIONS	3.0	1.1	0.2	2.7	0.1	7.1
EMI/TEMPEST TEST FACILITY	0.4	1.3	0.0	6.3	1.9	9.9
IEW TEST DIVISION	0.0	13.1	0.0	2.7	0.0	15.8
ELECTROMAGNETIC ENVIR TEST FAC	1.7	4.7	0.0	43.5	13.7	63.5
AVIONICS/GPS TEST FACILITY	1.3	0.0	0.0	4.7	0.0	6.0
	66.6	30.9	1.8	114.4	17.8	231.6
EPG CAPABILITY	44.4	47.1	1.2	242.6	15.2	350.4
TOTAL	111.0	78.0	3.0	357.0	33.0	582.0

FY93 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	
ENVIRONMENTAL TEST FACILITY	0.7	1.0	0.0	7.8	0.0	9.5
INSTRUMENTED TEST RANGE	14.3	31.3	0.9	45.6	0.6	92.6
RANGE OPERATIONS	1.8	1.6	0.0	2.7	0.1	6.2
EMI/TEMPEST TEST FACILITY	0.2	1.5	0.0	4.7	1.1	7.6
IEW TEST DIVISION	0.0	9.9	0.0	0.6	0.0	10.5
ELECTROMAGNETIC ENVIR TEST FAC	0.1	8.7	0.0	23.8	25.4	58.0
AVIONICS/GPS TEST FACILITY	0.8	0.0	0.0	7.8	0.0	8.7
	17.9	54.1	0.9	92.9	27.2	193.0
EPG CAPABILITY	3.1	17.9	2.1	302.1	14.8	339.0
TOTAL	21.0	72.0	3.0	395.0	42.0	532.0

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Document Separator

White Sands Missile Range
BRAC 95 R&D Data Call #7
(US Army Electronic Proving Ground)

PART V-4: Data Submission

R&D FACILITY / CAPABILITY TITLE:

ELECTROMAGNETIC ENVIRONMENTAL TEST FACILITY (EMETF)

SECTION 1: GUIDANCE, STANDARDS & ASSUMPTIONS

This section not provided. Please refer to the original guidance and data call for this information.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

2.1 WORKLOAD

2.1.A Historical Workload

2.1.A.1 Use the Historical Workload Form (FORM5-0 and FORM5-1). See enclosure 1.

2.1.B Forecasted Workload

2.1.B.1 Identify all appropriations (by program element) that generated testing or test support requirement, or are expected to generate such a requirement for FY92, FY93, and each year of the FY95 FYDP. See enclosure 2, pages 1 to 14; data are provided as (1) USAEPG rollup and (2) five functional areas.

2.1.B.2 Provide the amount of test work performed at your facility in FY92 and FY93. Break this out by workyears across the functional descriptors. See enclosure 2, page 15.

2.2 UNCONSTRAINED CAPACITY

2.2.A Use the Unconstrained Capacity Form (FORM6).

2.2.B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

Capacity is limited by the availability of the facility.

2.3 TECHNICAL RESOURCES

2.3.A Does the facility have a specified war-time or contingency role established in approved war plans? Yes/no.

No.

2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

USAEPG would lose a major portion of their ability to perform its T&E mission to support materiel acquisition and fielding decisions.

2.3.B.1 On the test mission of any other activity?

a. USAEPG provides test support to all PMs, PEOs, and independent technical evaluations of electronic system on subsystems. Their mission would be degraded to the extent that test results and analysis would no longer be available to support acquisition and fielding decisions.

b. Additionally, regarding HARDWARE-IN-THE-LOOP CAPABILITY, the Intelligence and Electronic Warfare Division would not be able to test their systems in a realistic dense electromagnetic environment.

2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

No.

SECTION 3: MEASURES OF MERIT

3.1 OVER-ARCHING MEASURES OF MERIT

3.1.A Interconnectivity

3.1.A.1 What percentage of the total test workload of this facility in FY93 involved the real-time or near real-time exchange of data or control with another facility? List the facilities you interconnect to for tests and identify how many are simultaneous activities. Identify these as to whether they are internal or external to the site.

None.

3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected. If yes, explain.

No.

3.1.B Facility Condition

3.1.B.1 Use the Facility Condition Form (FORM4). See enclosure 1.

3.1.C **Environmental and Encroachment Carrying Capacity**

3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility? If yes, explain.

No. Of the one-thousand, one-hundred and seventy-two (1,172) surveyed test sites that EPG has, only three (3) test sites are declared restricted use for daytime operations due to bat-related restriction periods from July 1 through September 30 of each year. The restricted use test sites are East 1 and 2, and West 1. During this time-frame, the lesser long-nosed (Leptonycteris curasoae yerbaabuenae) bats migrate to these particular sites to feed on the nectar from the flowers of the dense Agave stands. West 1 is restricted because of the proximity to a roosting site. This restriction is considered minor impact to testing.

3.1.C.2 How much could workload be increased before this limit would be reached? Express you answer as a percentage of your current workload.

Workload can be increased to 100 percent local testing in Fort Huachuca. Our estimate is based on communications-electronic, unmanned aerial vehicle (UAV), and laboratory type (e.g. computer simulation, environmental, and reliability) testing. As an example, abatement procedures are in place for night testing/operations of UAVs during July 1 to September 30.

3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire, and describe them.

Yes. There are two voluntary agreements. These are with:

(1) The U.S. Fish and Wildlife Service to protect roost sites and forage habitat for the lessor long-nosed bat. There is no expiration date for this agreement.

(2) The Arizona Archeological Society to perform investigation/archeological studies conducted by surveys, excavations and mitigation of possible historical and/or archeological importance. There is no expiration date for this agreement.

3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

a. State population was considered and not international population. Due to the location of Fort Huachuca, if we take a 50 miles radius, with Fort Huachuca being the center of the circumference, the southern-most portion of the circumference falls into international lines (Republic of Mexico).

b. The total population within a 50 miles radius is 97,624. The 50 miles radius encompasses the counties of Cochise, portions of Pima, and Santa Cruz.

c. The total population within a 100 miles radius is approximately 577,500. The 100 miles radius encompasses the counties of Cochise and portions of Pima, and Santa Cruz.

d. The total population within a 150 miles radius is 820,734. The 150 miles radius encompasses the counties of Cochise and Pima, Graham, and, Pinal.

e. The total population within a 200 miles radius is 2,942,835. The 200 miles radius encompasses the counties of Cochise, Santa Cruz, Pima, Graham, Pinal, Gila, and portions of Maricopa.

f. Cochise County consists of the following populated areas: Benson, Bisbee, Bowie, Cochise, Douglas, Dragoon, Elfrida, Hereford, Huachuca City, McNiel, Naco, Pearce, Pirtleville, Pomerene, Saint David, San Simon, Sierra Vista, Tombstone, and Willcox. Fort Huachuca was annexed by Sierra Vista in 1971.

g. Graham County consists of the following populated areas: Bylas, Central, Fort Thomas, Pima, Safford, Soloman, and Thatcher.

h. Maricopa County (only those that fell into the radius of consideration) consists of the following populated areas: Arlington, Avondale, Buckeye, Cashion, Chandler, El Mirage, Gila Bend, Gilbert, Glendale, Mesa, Phoenix, Scottsdale, and Tempe.

i. Pima County consists of the following populated areas: Ajo, Arivaca, Cortaro, Green Valley, Lukeville, Marana, Mount Lemon, Rillito, Sahuarito, Sasabe, Sells, Topawa, and Tucson.

j. Pinal County consists of Casa Grande, Coolidge, Eloy, Florence, Kearny, Mammoth, Maricopa, Oracle, Picacho, Red Rock,
Sacaton, San Manuel, Stanfield, Superior, and Valley Farms.

k. Santa Cruz County consists of the following populated areas: Elgin, Nogales, Patagonia, Sonoita, and Tumacacori.

3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and the frequency of use for each that affect of could affect mission accomplishment in your air, land, or sea space.

a. Commercial air travel is available from Fort Huachuca to Phoenix.

b. Arizona Highway 90 feeds Fort Huachuca from the north, where it originates from Interstate 10, 30 miles away. This is the major route leading into the reservation.

c. Arizona Highway 92 originates at the Fort Huachuca east gate and proceeds east and then south around the northern and eastern boundaries of the City of Sierra Vista.

SENSITIVE/CLOSE HOLD

Errata Sheet # 4 of 10

1. This Errata Sheet applies to the following EPG R&D Faciilty/Capability Data Submissions:

Range Operations Capabilities
Environmental Test Facility
Instrumented Test Range
Electromagnetic Environmental Test Facility
EMI/TEMPEST Test Capabilities
Intelligence & Electronic Warfare
Avionics/ Global Positioning System
General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.1.d.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

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c. Black Tower Complex. The Black Tower Complex is dedicated for the use of all UAV testing and training on Fort Huachuca. This complex is composed of 3 hangars, parachute tower, hazardous material storage facility, explosive storage bunker, 2 runways (1 *dirt runway 220' x 2000' (as of Jul 94)*, and a paved runway, 75' x 3000'). In addition, the following are available to UAV testing: frequency coordination, precision tracking, area surveillance, real-time and post-test digital data, communications and timing, photographic and video support, optical/infrared targets, and radar/communications threat environment.

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several sections skipped
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3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes. explain.

a. Yes. The platform is being completely rebuilt and should increase its capacity. The west turntable will be going through a major rehabilitation.

b. *The UAV dirt runway expansion to 2,000 feet will be complete in July of 1994.*

d. Fry Boulevard, the main street of Sierra Vista, originates at the Fort Huachuca main gate and proceeds due east through the heart of the city.

e. Buffalo Soldier Trail also originates at the Fort Huachuca main gate, proceeds south and then east around the southern boundary of the city.

f. Garden Avenue runs north and south and connects Fort Huachuca's main and east gates.

g. A dirt road originates at Fort Huachuca's west gate and proceeds west into the Coronado National Forest.

h. the commercial use of Restricted Areas R-2303A and R-2303B has negligible impact on the testing that EPG conducts. The ingress/egress of commercial traffic to Sierra Vista Airport is deconflicted by coordination with Libby Tower.

3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

None.

3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

None.

3.1.D **Specialized Test Support Facilities and Targets**

see prev page

3.1.D.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

Yes. The Electromagnetic Environmental Test Facility (EMETF) which consists of modeling and simulation, hardware-in-the-loop, and measurement capabilities.

a. MODELING & SIMULATION CAPABILITY:

(1) MODELING & SIMULATION HARDWARE: USAEPG has established a scientific and engineering computer network client-server configuration using Sun Scalable Processor Architecture (SPARC) computing platforms. Presently, we have three Sun 690 Symmetric Multiprocessor Servers and about 45 SPARC Engineering Workstations connected by both thick and thin Ethernet backbones transferring data at 10 Mbps. We have over 16 Gigabytes of on-line disk storage as well as unlimited off-line storage capabilities from 650 Megabyte (MB) CD-ROM readers and 5 MB 8-mm helical-scan tape drives. The SPARC equipment configuration was designed to use automated systems to the greatest extent possible to minimize the number of technicians required for system operation and maintenance. SPARC is an open standard for microprocessor technology and is designed to execute numerous different applications on a variety of system platforms. Because the basis

of the architecture allows for implementations that are both powerful and scalable, it serves as an ideal architecture for a series of platforms ranging from laptops to supercomputers. SPARC is the first microprocessor architecture designed for implementation by a variety of competing microprocessor vendors as opposed to basing an entire product line on a vendor's single proprietary microprocessor architecture. Any software which is binarily compatible with the SPARC standards will be compatible with the existing network operating system.

(2) MODELING AND SIMULATION SOFTWARE: As its primary software model for use in modeling & simulation efforts, USAEPG has developed the Analysis Software Environment (ASE). ASE is a suite of integrated computer models which help in the design, analysis, and test planning for a wide variety of complex communications equipment and systems. The focus of the ASE is to provide powerful communications electronics (C-E) system analysis capabilities embedded in a user-friendly Graphical User Interface (GUI) environment. Specifically, the ASE will provide more productivity in the following areas: modeling and simulation, equipment stimulation, equipment testing, test planning, test support, and statistical data analysis. We are coding ASE in Ada using the DoD's Joint Modeling and Simulation System (J-MASS)-compliant Verdix Ada compiler and are adhering to OSF/Motif X-windows, GOSIP, and POSIX standards for portability to any UNIX, OSF/Motif-based platform. ASE provides access to USAEPG equipment databases through an integrated SYBASE relational data base management system (RDBMS). SYBASE implements Standard Query Language (SQL) calls very efficiently, providing the user with flexibility to test many previously cumbersome or undefined combinations of equipment and conditions. We have designed the GUI so that the ASE execution is transparent to the user and affords the engineer the maximum amount of isolation from the tedious administrative and record keeping functions inherent in many engineering models. Program selection and data input menus are mouse-driven and allow the user to request standard equipment/terrain topologies or define custom equipment, terrain, and weather configurations. The input parameters and output results can be archived, allowing for easy repeatability of the analyses. As currently planned, ASE will address analyses and evaluations in the following functional areas:

(a) 1 Antenna design and analysis (2D and 3D generation of both near and far field radiation pattern).

(b) Electromagnetic wave and signal propagation.

(c) Receive signal level (RSL), often incorporating 3D antenna patterns.

(d) Line-of-sight (LOS) and terrain masking effects.
Path profile terrain evaluations (with ray tracing through atmospheric disturbances and refractive strata).

(e) Tropospheric EM wave propagation.

(f) Signal-to-Noise (SNR), Bit-Error-Rate (BER), and Error Correction Coding (ECC) studies.

(g) Electromagnetic Environmental Effects (E3) electric field strength distributions.

(h) Spectrum usage and signal modulation.

(i) Cosite electromagnetic interference (EMI), remote interferer, and jammer studies.

(j) Network traffic density and delay.

(k) Fade and noise modeling.

(l) EM wave attenuation through foliage.

(3) DATABASES: USAEPG is responsible for databases containing spectrum management information, US. and Threat force models, topological data, equipment measurement data, equipment characteristic data, communications-equipment systems configuration data, and organization data (e.g. TOE's). This data is used to support AMC and Army spectrum management missions, to perform EMC and EMV analysis, and to develop simulated tactical deployments which include scenarios, geographic locations, communication net system organization, frequency assignments and spectrum use.

(4) SIMULATED TACTICAL DEPLOYMENTS:

(a) A Simulated Tactical Deployment (STD) is a computerized representation of the C-E operators and equipment of a tactically deployed military force (usually a corps) and is based on a US Army Training and Doctrine Command (TRADOC) combat scenario. The STD is a primary element in conducting assessments of the anticipated performance of US Army Communications-Electronic (C-E) equipment in their intended operational environments. To accomplish its electromagnetic compatibility and electromagnetic vulnerability (EMC/EMV) performance evaluation mission in a cost-effective manner, USAEPG builds large-scale STD's of US Army tactical battlefields, and has various STD's on hand.

(b) An STD contains:

1 Detailed geographical locations and technical descriptions for all C-E equipment supporting the tactical combat force described in the scenario.

2 The total tactical laydown of both friendly and enemy forces.

3 The equipment technical performance characteristics, netting, frequency assignments, and unit combat postures defined by the scenario.

4 Enemy signals intelligence/electronic warfare (SIGINT/EW) assets are specifically located and targeted in accordance with an Army-approved threat for the time frame being simulated.

(c) The current STD's used for operational tasks are the Europe VI STD and Southwest Asia 4 (SWA-4) STD.

(d) The Europe VI STD is based on a TRADOC scenario depicting midintensity conflict in Central Europe in 1992. The Europe VI STD contains the tactical disposition of C-E systems of a US Army corps organized as an element of the southern Army Group (SOUTHAG) in Western Europe. A US tactical air force is included in the STD. The enemy forces opposing the US corps are two armies and an appropriate slice from two Fronts. The STD provides the tactical force disposition and its electromagnetic environment at the moment of record, H-hour plus 144. Europe VI was finished in January 1988 and is currently used for operational tasks.

(e) The Southwest Asia 4 STD is based on a TRADOC scenario depicting midintensity conflict in southwest Asia in 1994. The STD contains the tactical disposition of C-E systems of a US Army corps organized in three divisions, without Air Force support. The enemy forces opposing the US corps are a provisional Iraqi army organized into two corps. SWA-4 was finished in 1993 and is currently used for operational tasks.

b. HARDWARE-IN-THE-LOOP CAPABILITY: The Stress Loading Facility is a real-time, hardware-in-the-loop test facility capable of generating a realistic, complex, and dynamic electromagnetic environment for evaluating the performance of IEW systems under controlled and repeatable conditions. Although the normal configuration is for closed-link testing of IEW systems, the facility can be used for radiated testing at low power levels. The SLF consists of the following major subsystems

(1) Communications Threat Simulators (CTS): The CTS is capable of generating a wide variety of modulation waveforms in the 0.5 to 500 (megahertz) MHz frequency band. The CTS consists of 32 signal sources which can be time-shared to represent a multiple emitter environment. Primary functions of the CTS are (1) generating RF waveforms; (2) running predesignated test scenarios; (3) providing automatic control of modulation, RF sources, and RF distribution; and (4) generating test scenarios for stand-alone operation.

(2) Non-communications Threat Simulators (NCTS): The NCTS can simulate up to 1,023 dynamic pulsed emitters on a time-multiplexed basis. Primary functions of the NCTS are (1) generating electronic intelligence (ELINT) signals in the 0.5 to 18.0 gigahertz (GHz) frequency band; (2) running predesignated test scenarios; (3) providing automated control of modulation, radio frequency (RF) sources, and RF distribution; and (4) generating test scenarios for stand-alone mode operation.

(3) Functional System Simulator (FSS): The FSS is a software and hardware subsystem which simulates ancillary hardware and software processing for the SUT. Typical functions of the FSS include (1) simulating support/control systems associated with the SUT; (2) simulating C^3I systems which interface with the SUT that are unavailable for test; (3) simulating additional units of the SUT that are unavailable for test; (4) monitoring SUT performance; (5) generating scenarios; and (6) running predesignated scenarios; (7) performing near real time data analysis.

(4) Test Control Workstation (TCW) The TCW controls the operation of all the SLF subsystems. It is the single point at which a test officer can develop scenarios which require the use of more than one SLF subsystem (Global Scenario Generation). The TCW also executes Global Scenarios by controlling the operation of all the needed SLF subsystems: It directs which scenario to run, controls start time, execution run time, and stop time. The TCW also handles the administrative functions of scheduling SLF usage, controlling access to the other subsystems, and database management for the other subsystems.

(5) Test Data Management System (TDMS): The TDMS is a VME/VXI based instrumentation and controller system used for monitoring and time tagging the stimuli outputs of the SLF subsystems as well as the responses of the system-under-test to these signals. The system is fully compatible with the existing Institute of Electrical and Electronic Engineers (IEEE) - 488 bus instrumentation of the CTS and NCTS. The subsystem also has the capability to monitor, deinterleave and characterize the pulses generated by the NCTS.

c. MEASUREMENT CAPABILITY:

(1) The EMETF is responsible for performing the AR 5-12 mission for making assessments on the ability of Army systems and equipment to operate compatibly in their intended electromagnetic (EM) environment and on the influence of the intended operational EM environment on Army systems, concepts and doctrine for using communications-electronics (C-E) systems and equipment. Therefore, the EMETF assessments evaluate the EM vulnerability (EMV) and EM compatibility (EMC) of Army systems. Specific areas of EMC/EMV expertise include: adapting existing combat scenarios and data base information to provide tactical combat scenarios; acquiring, adapting, or developing Government-furnished equipment (GFE) simulators to replicate all hardware interfaces and model all electrical controls for integration design and interoperability testing; modifying existing capabilities to provide customized mobile (or transportable) radio-frequency (RF) and digital environment generators and combat dynamics environment generators representing the validated tactical scenario to stimulate the system integration facility (SIF) with realistic threat environments; providing real-time monitoring of simulator/stimulator environment, collection of system responses, and quick-look analysis of results; and assessing the antijam capabilities and identifying the jamming vulnerabilities of RF data links when operated in a hostile electromagnetic environment. The EMC/EMV testing capability satisfies SIF requirements for Army system design and development, as

well as hardware-in-the-loop/closed link tests for Full-Scale Engineering Development (FSED) prototype and production systems, and support for evaluating Pre-planned Product Improvements and evolution of threat, tactics, and doctrine.

(2) The EMETF can provide passive measuring instrumentation to monitor the electromagnetic spectrum from the IR region in the 1 to 14 micrometer wavelength to the RF region (110 kHz to 40 GHz). And, in the area of signature measurements, we can perform spectroradiometric measurements with a Fourier Transform Spectrometer of specific areas of selected Army systems and provide the radiant intensity in watts/square centimeter/steradian/micrometer as a function of wavelength.

(3) The EMETF also performs developmental testing of military optical and electro-optical (EO) systems using modeling, laboratory testing and field testing.

3.1.D.2 Are specialized targets required to support this facility, If yes, explain.

a. MODELING & SIMULATION CAPABILITY: No

b. HARDWARE-IN-THE-LOOP CAPABILITY: No. This question doesn't apply to the SLF. The SLF generates target emitters based on the parameters required for the test.

c. MEASUREMENT CAPABILITY: No.

3.1.D.2.A Have the specialized targets been validated? If yes, by whom?

a. MODELING & SIMULATION CAPABILITY:

(1) While we have no specialized targets to validate, we do go through a rigorous validation process for our STD's. To ensure that the STD's accurately reflect the TRADOC wargaming scenario and the tactical environment expected for the tactical C-E equipment to be evaluated, USAEPG follows Army deployment doctrine as closely as possible. For the friendly troop deployment, the general composition and disposition of forces is in accordance with the troop list, task organization, and guidance provided in the TRADOC scenario. Precise force locations for individual units and operators are derived by two methods:

(a) For major units (normally major headquarters down to brigade), all specific geographical locations contained in the TRADOC scenario are used.

(b) For lower echelon units, Army deployment doctrinal publications and the expertise of experienced military analysts are used to determine specific locations based on the parent unit location.

(2) The netting of communications equipment and deployment of non-communications equipment for all US elements are derived from a library of training and operational doctrine manuals. This library is composed of field manuals published by the US

Army Signal Center and other cognizant centers, operational and organizational concepts for new systems published by the Program Managers, and Command and General Staff School publications on Army tactical deployment doctrine.

(3) Independent validation for the deployment of the friendly forces is conducted by TRADOC. Historically, however, due to staffing limitations at TRADOC, the validation of the friendly forces is normally done on a sampling basis to ensure that it conforms to the TRADOC scenario.

(4) For the threat force portion of the STD, special care is taken to ensure that it has maximum validity and that it is based on the best and latest intelligence estimates. The primary source of data is the Initial Network (INNET) working group. This group was established to assist FSTC in identifying and assessing the accuracy of data to be inserted into the data base. This working group is composed of the following organizations: FSTC, DIA, DCSINT, MSIC ITAC, and FTD.

(5) The enemy deployment is developed by using a task organization derived from the INNET Handbook which was written and published by USAEPG for the FSTC. The types and numbers of radio frequency (RF) equipment are obtained from the DIA and Army-validated INNET data base which is maintained at the USAEPG for FSTC.

(6) The INNET data base is developed from organizational drawings reflecting vehicles, RF components, and communications netting schematics provided by FSTC. The INNET data are converted to formats necessary for automatic computer processing at USAEPG and then are returned to FSTC for review to ensure that the resulting product accurately reflects the INNET working group intent and input. After FSTC validation, the material is forwarded to DA for approval and then to DIA for final validation.

(7) Because of the importance of producing credible vulnerability assessments of systems, special preparation and validation procedures are used for the SIGINT/ EW portion of the STD. Initially, the System Threat Assessment Report (STAR) is reviewed for details of the specific threat to a system and/or to determine whether special targeting is required. The US Army Signal Center publishes the STAR for all communications systems. For non-communications systems (e.g., radars), the proponent center provides the STAR. To ensure proper representation of the SIGINT/EW forces in the STD, a complete and separate threat data base of threat SIGINT/ EW capabilities is maintained at USAEPG. Further, a special staff of EW analysts prepares that portion of the STD. All threat intercept, direction finding (DF), and jamming equipment is deployed in accordance with the STAR and threat doctrine, in the correct numbers, and with the proper technical characteristics.

(8) After initial deployment, and before use for any evaluations, approval of the threat laydown for intercept, DF, and jamming systems is obtained from appropriate authorities such as DCSINT DA, TRADOC, AMC, FSTC, and the US Army Signal Center.

This process can take several forms, such as onsite visits, offsite briefings, teleconferencing, etc. This review and validation process culminates in a letter of validation from DCSINT validating the STD for use by USAEPG to conduct the required EMV/EMV analyses.

b. HARDWARE-IN-THE-LOOP CAPABILITY: The SLF emitter library has not been validated; however, we are in the process of having our threat signal library validated by TEMA.

c. MEASUREMENT CAPABILITY: No.

3.1.E **Expandability**

3.1.E.1 Other than the expandability inherent in the unconstrained capacity (FORM 6) discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? If yes, explain.

No.

3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? If yes, identify by T&E functional area and test type.

Yes. The facility is designed to provide a realistic electromagnetic environment for testing intelligence electronic warfare (IEW) and communications systems; however, we have tested target identification systems mounted on rotary wing aircraft. Because of the flexible nature of the facility, we could provide simulated electromagnetic environments for threat warning receivers or other EC systems.

3.1.E.2 Are the airspace, land, and water areas adjacent to areas under DoD control available and/or suitable for physical expansion to support new missions or increased footprints. If yes, explain.

Generally, surrounding non-DoD properties are either privately owned, National Forest, Park Service, or Bureau of Land Management managed. Use of some of these lands can be negotiated for certain types of tests.

3.1.E.3 Is the facility equipped to support secure operations. If yes, to what level of Classification (Confidential -> Special Access)?

Yes, up to and including SAR.

see page prev 3.1.D.1

3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes, explain.

No.

3.1.F **Uniqueness**

3.1.F.1 Is this a one-of-a-kind facility within the DoD? If yes, explain.

Yes. USAEPG is the only U.S. and DoD Test Range with a federally mandated spectrum assignment and operational coordination requirement within a 24 kilometer radius of the post as described in the National Telecommunications & Information Administration manual (See Note 1, enclosure 3). In addition the geography/topology around Fort Huachuca provides a natural barrier to electromagnetic contamination from outside sources and confines generated electromagnetic energy (See figure 1, enclosure 3). USAEPG is able to utilize the spectrum from 9 KHz to 400 GHz with few emission power restrictions and with contiguous spectrum available for realistic rigorous EMV/EMC/susceptibility testing. The natural geologic shielding mentioned before and shown on the picture allows emissions testing of high output levels; this feature is irreplaceable and can only be partially duplicated through high dollar construction of shielded test facilities. The SLF is the only known T&E DoD HITL facility which can provide a simultaneous dense environment of communication and non-communication threat emitters to a system under test.

3.1.F.1.A Within the U.S. Government? If yes, explain

See 3.1.F.1 above.

3.1.F.1.B Within the U.S? If yes, explain.

See 3.1.F.1 above.

3.1.F.2 Are you currently providing support to DoD users outside your Military Department? If yes, indicate the percentage of total workload in FY92 and FY93 by Military Department.

Yes.	FY92	FY93
NAVY	.7%	.1%
MARINE CORPS	.4%	1.6%
AIR FORCE	1.4%	2.9%
	2.5%	4.6%

3.1.G Available Air, Land, and Sea Space

3.1.G.1 How many square miles of air, land, and sea space are available to support test operations?

On the reservation, 122 square miles (78,000 acres) of real estate are available to support testing. An additional 45 square miles (29,000 acres) of land are leased from federal, state, and local agencies throughout southern Arizona, from the New Mexico to California state lines. Also available on an as-needed basis are 39,000 square miles (25 million acres) of land obtainable from the Bureau of Land Management (BLM) through negotiation and a Memorandum of Agreement. In addition to the local airspace, 891.5 square miles, Military Operations Areas to the west have been used in the past to support tests. Use of these areas, in excess of 1,800 square miles, require coordination with several other agencies.

3.1.G.2 Who owns or controls the land under the Restricted Airspace yo use?

The Ft. Huachuca military reservation is comprised of 122 square miles (78,000 acres) of real estate. The remaining real estate available to support testing is leased from federal, state, and local agencies.

3.1.G.3 How much of this (total air space available to support operations) is Restricted Airspace, and what altitude limits are associated with the restricted areas?

The restricted area R-2303A, 261.9 square miles, is within the boundaries of R-2303B which is 891.5 square miles. R-2303A altitude limits are surface to 15,000 ft MSL and R-2303B is 15,000 to 45,000 ft MSL.

3.1.G.4 Do you have special use airspace other than supersonic airspace? If yes, for what types of tests? What are its dimensions? Will it support simultaneous users?

Yes. Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.1.G.5 Is the airspace over land or water. List the number of square miles over each.

All over land -- 891.5 square miles.

3.1.G.6 Identify known or projected airspace problems that may prevent accomplishing your mission.

No known or projected problems.

3.1.G.7 What is the maximum straight line segment in your airspace in nautical miles?

52.6 nautical miles.

3.1.G.8 What public airspace have you used for overflight of weapons systems in the past? What was the nature of those tests? Do you anticipate being able to use that same public airspace for similar tests in the future? Yes or no to each.

Two public airspace corridors, V-393 and V-395 between Tucson and Nogales, AZ, have been used in the past. The Unmanned Aerial Vehicle Short Range crossed those corridors and operated in the MOAs to the west during the maximum range test. Yes.

3.1.H **Geographic/Climatological Features**

3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap of the earth). Identify all of the following that apply: mountains, forest, jungle, cultivated lowland, swamp, riverine, desert, and sea. State the area of each in square miles.

3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of tests?

a. Yes. The attached pictures show that there is a natural "bowl", formed by the topology of this valley surrounded by mountains, in which USAEPG/Fort Huachuca ranges are located (See figure 1, enclosure 3). This geologic configuration both contains the electromagnetic energy generated by tests and protects the test items from outside electromagnetic contamination by providing a high degree of isolation from ambient electromagnetic energy associated with densely populated areas (figures 2 and 3, enclosure 3, depict the electromagnetic energy from a single transmitter being contained by the mountain ranges surrounding Fort Huachuca). Since USAEPG primarily tests communication systems, this is a critical factor in our mission performance (figures 4, 5, and 6, enclosure 3, show a typical laydown of about 10 transmitters deployed in a communications network. The contours of electromagnetic energy are again contained by the geology of the mountains surrounding the Fort Huachuca test ranges.) This natural masking of electromagnetic energy from Tucson and especially Mexico contributes to Fort Huachuca's desirability as a test site for sensitive or classified electromagnetic waveforms. Additionally, the rock and relatively high mineral deposits in the soil contribute to the accurate formation of antenna radiation patterns, the measurement of which is part of our mission.

b. Our mission requires that we be able to perform distributed communications systems tests for division-sized doctrinally approved deployments. That area is available on and around Fort Huachuca for months at a time and equipment can be secured and left on the range during extended periods of testing. The pictures attached show how the ranges are used and how much area can be used for actual tests.

3.1.H.3 Do you have to go to other geographical locations to satisfy test requirements? If yes, explain. If yes, provide as a percent of overall workload per year for the last 8 years.

No.

3.1.H.4 Number of days per year with average temperature below 32 degrees F? Between 32 and 95 degrees F? Above 95 degrees F?

The average number of days per year with an average relative humidity below 30% is 150. Humidity can occasionally fall below 10% during these days. An average of 194 days per year have average relative humidities between 30% and 80%. Finally, 21 days per year, on average, have an average relative humidity above 80%.

3.1.H.5. Number of days per year with average relative humidity below 30%? Between 30 and 80%? Above 80%

The average number of days per year with an average relative humidity below 30% is 150. Humidity can occasionally fall below 10% during these days. An average of 194 days per year have average relative humidities between 30% and 80%. Finally, 21 days per year, on average, have an average relative humidity above 80%.

3.1.H.6 Number of test missions per year (85 - 93) canceled due to weather?

Not applicable.

3.1.H.7 Number of test days per year (85 - 93) canceled due to weather?

Not applicable.

3.1.H.8 Number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

Based upon the 35 year climatological database, there are no full 24 hour periods during which the visibility drops below 3 miles. Restricted visibility occurs most often during periods of showery types of precipitation which occur primarily during the winter and summer rainy seasons. Occurrences of fog occur primarily during the winter and are of short duration. Based upon climatology, 2.3% or 197.6 hours has visibility below 3 miles in an average year. This equates to a total of 8.2 days. Visibility of 1-3 miles occurs, on average, a total of 109.6 hours while visibility less than one mile occurs a total of 88.1 hours a year or about 1% of the time on average. December is the month with the highest number of occurrences with 29.8 hours with visibility of 1-3 miles and 14.9 hours with visibility below 1 mile on average. Visibility below 3 miles has never been reported in June.

3.1.H.9 What is the average number of flying days available per year for flight tests? Provide historical average from the past eight years.

The average number of flying days available per year based solely upon weather conditions during the period of review is 353. This equates to 96.7% of all days in a year being available. The primary weather condition that may make a day unavailable is strong wind since all other adverse weather conditions are intermittent in nature.

SENSITIVE/CLOSE HOLD

Errata Sheet # 5 of 10

1. This Errata Sheet applies to the following EPG R&D Facility/Capability Data Submission:

   Range Operations Capabilities
   Environmental Test Facility
   Instrumented Test Range
   Enectromagnetic Environmental Test Facility
   EMI/TEMPEST Test Capabilities
   Intelligence & Electronic Warfare
   Avionics/Global Positioning Systems
   General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.2.A.6 What is the maximum number of simultaneous users?

Number of simultaneous users is limited by USAF or other military department rules on supersonic flight in restricted corridors. No specific limitation on the number of simultaneous users is available to EPG.

3.2.B **Airfield and Facility Characteristics**

3.2.B.1 Provide a brief description of your airfield and support facilities.

Libby Army Airfield is a Joint Use Airfield *owned by Ft. Huachuca (TRADOC)* and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be all concrete when completed (FY95) and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and belongs to Ft. Huachuca.

3.1.H.10 What percentage of the time are your test operations restricted due to weather?

Not applicable.

3.2 AIR VEHICLES

3.2.A Supersonic Airspace see prev pg

Not applicable.

3.2.B Airfield and Facility Characteristics

see prev page

3.2.B.1 Provide a brief description of your airfield and support facilities.

Libby Army Airfield is a Joint Use Airfield and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be al concrete when completed and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and does not belong to the Proving Ground.

3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

Hubbard assault strip is 5 miles from Libby and could be used for an emergency landing.

3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

Libby Field is situated within R-2303B.

3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

Libby Field is unique because of length, position relative to the restricted airspace and the weather found in southern Arizona.

3.2.B.5 Is there a size, weight, maintenance, or mission limitation that would affect test operations? If yes, describe.

No.

3.2.B.6 Including hangers an ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise Missiles?

Excluding hangars, enough ramp area exists to support approximately 20 fighter size aircraft 10 multi-engine aircraft or 25 rotary wing aircraft.

3.2.C. **Test Operations**

3.2.C.1 What types of air vehicle testing can be supported? Describe?

Unmanned Air Vehicles, Space Shuttle, SR-71, Rotary Wing, and some Fixed Wing.

3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

Yes.

3.2.C.3 What kinds, numbers of aircraft and mix of same can be supported (manned and unmanned)?

Any type of unmanned vehicle can be supported. Currently, only the aircraft listed in 3.2.C.8 below can be supported.

3.2.C.4 Does UAV and or rotary wing operations pose any limitations on other types of missions? If yes, explain.

No.

3.2.C.5 What sorts of missions can be flown within local airspace?

Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

Not applicable.

3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

Not applicable.

3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

Not applicable.

3.3 ELECTRONIC COMBAT

3.3.A Threat Environment

3.3.A.1 What is the number of threats simulated?

a. MODELING & SIMULATION CAPABILITY:

(1) At present, the Modeling & Simulation Capability has two simulated threat forces modeled. These threat models are contained in a Simulated Tactical Deployment (STD). A STD is a computerized representation of the C-E operators and equipment of a tactically deployed military force (usually a corps) and is based on a US Army Training and Doctrine Command (TRADOC) combat scenario. The STD is a primary element in conducting assessments of the anticipated performance of US Army Communications-Electronic (C-E) equipment in their intended operational environments. To accomplish its electromagnetic compatibility and electromagnetic vulnerability (EMC/EMV) performance evaluation mission in a cost-effective manner, EMETF builds large-scale STD's of US Army tactical battlefields, and has various STD's on hand.

(2) An STD contains:

(a) Detailed geographical locations and technical descriptions for all C-E equipment supporting the tactical combat force described in the scenario.

(b) The total tactical laydown of both friendly and enemy forces.

(c) The equipment technical performance characteristics, netting, frequency assignments, and unit combat postures defined by the scenario.

(d) Enemy signals intelligence/electronic warfare (SIGINT/EW) assets are specifically located and targeted in accordance with an Army-approved threat for the time frame being simulated.

b. HARDWARE-IN-THE-LOOP CAPABILITY: The SLF currently has a library of 113 non-communications emitters and 40 communications emitters.

c. MEASUREMENT CAPABILITY: We presently have 6 palletized jammers that can be operated in ground or airborne modes. We also have point jammers built for specific pieces of equipment depending upon test requirements.

3.3.A.2 How many simultaneous threats can be simulated? What type? What is the maximum signal density? Average density? Power level? What band? Radiated or injected?

a. MODELING & SIMULATION CAPABILITY:

(1) How many simultaneous threats can be simulated?

(a) We have the capability to model any number of simultaneous threats in our STD's and computer models. The current STD's used for operational tasks are the Europe VI STD and Southwest Asia 4 (SWA-4) STD.

(b) The Europe VI STD is based on a TRADOC scenario depicting midintensity conflict in Central Europe in 1992. The Europe VI STD contains the tactical disposition of C-E systems of a US Army corps organized as an element of the southern Army Group (SOUTHAG) in Western Europe. A US tactical air force is included in the STD. The enemy forces opposing the US corps are two armies and an appropriate slice from two Fronts.

(c) The Southwest Asia 4 STD is based on a TRADOC scenario depicting midintensity conflict in southwest Asia in 1994. The STD contains the tactical disposition of C-E systems of a US Army corps organized in three divisions, without Air Force support. The enemy forces opposing the US corps are a provisional Iraqi army organized into two corps. SWA-4 was finished in 1993 and is currently used for operational tasks.

(2) What type (e.g. AI, AAA, SAM)? The types of threats simulated are mostly threats to communications systems, i.e., both ground and air based jamming platforms, although there are some enemy Direction Finding (DF) and intelligence gathering sensors modeled as well.

(3) Average density? The density of enemy jamming, DF, and intelligence gathering assets is determined by the US Army Training and Doctrine Command (TRADOC) combat scenario for a tactically deployed military force.

(4) What power level? What band? The power levels and frequency parameters associated with enemy jamming assets is determined by the US Army Training and Doctrine Command (TRADOC) combat scenario for a tactically deployed military force.

(5) Radiated or injected? In the computer models, all simulated threats are assumed to be radiated.

b. HARDWARE-IN-THE-LOOP CAPABILITY:

(1) Type: Up to 1023 simultaneous non-communications threat emitters and 32 simultaneous communications threat emitters.

(2) Maximum Signal Density:

(a) Non-communications emitters: 4 Megapulses/sec.

(b) Communications Emitters: 32 Emitters/sec.

(3) Power levels:

(a) Non-communications emitters:

Injected:	-80 to +10 dBm
Radiated:	-70 to +20 dBm

(b) Communications emitters: -130 to +13 dBm

(3) We can simulate RF communications emitters in the 500 kHz to 500 MHz frequency band and non-communications emitters in the 500 MHz to 18 GHz frequency band.

(4) The normal mode of operation is to inject the RF signals into the system under test's antenna.

c. MEASUREMENT CAPABILITY: We can simulate up to 6 simultaneous jamming threats with the equipment we have at present. The types of jamming signals we generate are usually associated with communications networks. The maximum signal density is six distinct jamming signals, one each from each of our 6 jamming platforms. Power levels for our jammers range from effective radiated powers of about 250 watts to over 15,000 watts. The frequency bands into which we can inject jamming signals range from about 30 MHz to about 15 GHz.

3.3.A.3 Are the threat software models and simulators validated? If yes, by whom?

a. MODELING & SIMULATION CAPABILITY:

(1) Yes. The primary source of data is the Initial Network (INNET) working group. This group was established to assist FSTC in identifying and assessing the accuracy of data to be inserted into the data base. This working group is composed of the following organizations: FSTC, DIA, DCSINT, MSIC ITAC, and FTD.

(2) The enemy deployment is developed by using a task organization derived from the INNET Handbook which was written and published by USAEPG for the FSTC.

The types and numbers of radio frequency (RF) equipment are obtained from the DIA and Army-validated INNET data base which is maintained at the USAEPG for FSTC.

(3) The INNET data base is developed from organizational drawings reflecting vehicles, RF components, and communications netting schematics provided by FSTC. The INNET data are converted to formats necessary for automatic computer processing at USAEPG and then are returned to FSTC for review to ensure that the resulting product accurately reflects the INNET working group intent and input. After FSTC validation, the material is forwarded to DA for approval and then to DIA for final validation.

(4) Because of the importance of producing credible vulnerability assessments of systems, special preparation and validation procedures are used for the SIGINT/EW portion of the STD. Initially, the System Threat Assessment Report (STAR) is reviewed for details of the specific threat to a system and/or to determine whether special targeting is required. The US Army Signal Center publishes the STAR for all communications systems. For non-communications systems (e.g., radars), the proponent center provides the STAR. To ensure proper representation of the SIGINT/EW forces in the STD, a complete and separate threat data base of threat SIGINT/ EW capabilities is maintained at USAEPG. Further, a special staff of EW analysts prepares that portion of the STD. All threat intercept, direction finding (DF), and jamming equipment is deployed in accordance with the STAR and threat doctrine, in the correct numbers, and with the proper technical characteristics.

(5) After initial deployment, and before use for any evaluations, approval of the threat laydown for intercept, DF, and jamming systems is obtained from appropriate authorities such as DCSINT DA, TRADOC, AMC, FSTC, and the US Army Signal Center. This process can take several forms, such as onsite visits, offsite briefings, teleconferencing, etc. This review and validation process culminates in a letter of validation from DCSINT validating the STD for use by USAEPG to conduct the required EMV/EMV analyses.

b. HARDWARE-IN-THE-LOOP CAPABILITY: The SLF threat emitters use software simulations to control the output of hardware.(i.e. signal generators) Our simulations are not validated; however, we are in the process of having our threat signals validated by TEMA.

c. MEASUREMENT CAPABILITY: No.

3.3.A.4 Do you conduct open loop testing? Reactive? Closed loop?

a. MODELING & SIMULATION CAPABILITY: No

b. HARDWARE-IN-THE-LOOP CAPABILITY: Most of our tests are closed link (i.e. non-radiating) open loop tests. Our scenarios are scripted events and are non-reactive. We do not have a closed loop capability.

c. MEASUREMENT CAPABILITY: Yes, we can conduct open loop testing, but not reactive or closed loop testing.

3.3.A.5 What is the threat representation (fidelity) and density?

a. MODELING & SIMULATION CAPABILITY:

(1) We take special care to ensure that it has maximum validity and that it is based on the best and latest intelligence estimates. The types and numbers of radio frequency (RF) equipment are obtained from the DIA and Army-validated INNET data base which is maintained at the USAEPG for FSTC. The INNET data are converted to formats necessary for automatic computer processing at USAEPG and then are returned to FSTC for review to ensure that the resulting product accurately reflects the INNET working group intent and input. After FSTC validation, the material is forwarded to DA for approval and then to DIA for final validation. Because of the importance of producing credible vulnerability assessments of systems, special preparation and validation procedures are used for the SIGINT/EW portion of the STD. To ensure proper representation of the SIGINT/ EW forces in the STD, a complete and separate threat data base of threat SIGINT/ EW capabilities is maintained at USAEPG. Further, a special staff of EW analysts prepares that portion of the STD. All threat intercept, direction finding (DF), and jamming equipment is deployed in accordance with threat doctrine, in the correct numbers, and with the proper technical characteristics.

(2) After initial deployment, and before use for any evaluations, approval of the threat laydown for intercept, DF, and jamming systems is obtained from appropriate authorities such as DA/DCSINT, TRADOC, AMC, FSTC, and the US Army Signal Center. This review and validation process culminates in a letter of validation from DCSINT validating the STD for use by USAEPG to conduct the required EMV/EMV analyses.

b. HARDWARE-IN-THE-LOOP CAPABILITY: The SLF represents the RF signature of each threat emitter based on data in various intelligence data bases. The Non-communications Threat Simulator generates high fidelity threats with complex pri structures, intra and interpulse frequency, amplitude and modulations. Complex transmit and receive antenna patterns are also simulated. The Communications threat Simulator generates high fidelity signals with demodulatable baseband voice and data. We construct each signal to the fidelity desired by the customer.

c. MEASUREMENT CAPABILITY: We are able to replicate both ground-based and heliborne enemy jamming assets.

3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? If yes, describe.

a. MODELING & SIMULATION CAPABILITY:

(1) Land Threats: Yes. At present, the Modeling & Simulation Capability has two simulated threat forces modeled. These threat models are contained in a Simulated Tactical Deployment (STD). A STD is a computerized representation of the C-E operators and equipment of a tactically deployed military force (usually a corps) and is based on a US Army Training and Doctrine Command (TRADOC) combat scenario. The STD is a primary element in conducting assessments of the anticipated performance of US Army Communications-Electronic (C-E) equipment in their intended operational environments. To accomplish its electromagnetic compatibility and electromagnetic vulnerability (EMC/EMV) performance evaluation mission in a cost-effective manner, USAEPG builds large-scale STD's of US Army tactical battlefields, and has various STD's on hand. An STD contains:

(a) Detailed geographical locations and technical descriptions for all C-E equipment supporting the tactical combat force described in the scenario.

(b) The total tactical laydown of both friendly and enemy forces.

(c) The equipment technical performance characteristics, netting, frequency assignments, and unit combat postures defined by the scenario.

(d) Enemy signals intelligence/electronic warfare (SIGINT/EW) assets are specifically located and targeted in accordance with an Army-approved threat for the time frame being simulated.

(2) Sea Threats: No

b. HARDWARE-IN-THE-LOOP CAPABILITY: Yes. The SLF represents the RF signature of each threat emitter based on data in various intelligence data bases. We construct the signal to the fidelity desired by the customer.

c. MEASUREMENT CAPABILITY: We are capable of simulating land threats by using our ground-based jammer assets. Ideally, we could emulate some sea-based jammers if our jamming platforms were placed on ships, but we have never done this in the past.

3.3.A.7 What geographic dispersion can be simulated?

a. MODELING & SIMULATION CAPABILITY: Usually our models and STD's are limited to an Army corps deployment, which is about 100 km wide by 150 km deep, and a corresponding threat forces deployment, which is also about 100 km wide by 150 km. deep. The total land area encompassed by a typical STD is about 100 km wide by 300 km deep.

b. HARDWARE-IN-THE-LOOP CAPABILITY: The SLF can simulate a simultaneous gaming area 4000 km on a side, or 16,000,000 square km. This area can be centered at any geographic location on the globe.

c. MEASUREMENT CAPABILITY: Our jamming platforms are usually deployed over a division area, which is about 50 km wide by 50 km deep. Above those distances, our jammers don't radiate enough power to maintain adequate levels of jamming signal in the test area.

3.3.A.7.A Threat lay down?

a. MODELING & SIMULATION CAPABILITY: The threat laydown is typically about one-half of the overall STD area. The threat laydown is therefore about 100 km wide by 150 km deep.

b. HARDWARE-IN-THE-LOOP CAPABILITY: The SLF can simulate a simultaneous gaming area 4000 km on a side, or 16,000,000 square km. This area can be centered at any geographic location on the globe. Threat laydowns are scenario dependent. We develop test scenarios based on customer's requirements.

c. MEASUREMENT CAPABILITY: Our jamming platforms are usually deployed over a division area, which is about 50 km wide by 50 km deep. Above those distances, our jammers don't radiate enough power to maintain adequate levels of jamming signal in the test area.

3.3.A.7.B Representative distance?

a. MODELING & SIMULATION CAPABILITY: Representative distances are determined by the particular type of threat equipment under consideration; however, all distances are contained in the threat area, which is about 100 km wide by 150 km deep.

b. HARDWARE-IN-THE-LOOP CAPABILITY: Range is limited by terrain blockage and over-the-horizon limits based on transmit and receive antenna heights.

c. MEASUREMENT CAPABILITY: Our jamming platforms are usually deployed over a division area, which is about 50 km wide by 50 km deep. Above those distances, our jammers don't radiate enough power to maintain adequate levels of jamming signal in the test area.

3.3.A.8 Are the threats moveable within a test scenario? Relocatable to a new scenario?

a. MODELING & SIMULATION CAPABILITY: Yes. We can simulate platform movement of emitters during scenario execution.

b. HARDWARE-IN-THE-LOOP CAPABILITY: Yes. We can simulate independent three dimensional movement of each platform containing emitters during scenario execution.

c. MEASUREMENT CAPABILITY: Yes, our jamming platforms are designed to be carried by ground vehicles and helicopters.

3.3.A.9 Is the facility interlinked with off-site threats? If yes, how are you linked?

No interlink capability for any of our three capabilities (i.e., modeling & simulation, hardware-in-the-loop, and measurement).

3.3.A.10 Is there a limit on simultaneous users? If no, explain.

a. MODELING & SIMULATION CAPABILITY: No. Theoretically, the number of simultaneous users who could execute our computer models is infinite; however, practical limitations on computer resources (e.g., workstations, software licenses, etc.) impose a limit on the process.

b. HARDWARE-IN-THE-LOOP CAPABILITY: Yes. Depending on the test scenario, the SLF could conduct two simultaneous tests. One on the Non-communications threat simulator and one on the communications threat simulator. If both simulators were required to support the same test scenario, then only one test could be conducted.

c. MEASUREMENT CAPABILITY: Yes, the limit on simultaneous users is 6.

3.3.B **Test Article Support**

3.3.B.1 Is there a size, weight, or other limitation on test operations the facility can support? If yes, explain and describe measures needed to remove them.

a. MODELING & SIMULATION CAPABILITY: No. Computer simulations can accommodate any size threat platform.

b. HARDWARE-IN-THE-LOOP CAPABILITY: Yes. We can not support large fixed wing aircraft because the building in which the SLF is located does not have access to the airfield. There are no immediate plans to remove this restriction.

c. MEASUREMENT CAPABILITY: Yes, the jamming platforms weigh about a ton and require a vehicle or airborne platform capable of carrying that much additional weight. We have miniaturized the jamming platforms to the maximum extent possible. To get them any more compact would require extraordinary amounts of very expensive, custom electronics components and an impractically large amount of funding.

3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

a. MODELING & SIMULATION CAPABILITY: Theoretically, the number of simultaneous countermeasures we could evaluate is infinite; however, practical limitations on computer execution speed and ability to analyze and interpret output data impose a limit on the process.

b. HARDWARE-IN-THE-LOOP CAPABILITY: We do not have the capability to evaluate interactive countermeasures.

c. MEASUREMENT CAPABILITY: The number of simultaneous countermeasures possible for evaluation is six.

3.3.B.3 What range of spectra can be tested and evaluated?

a. MODELING & SIMULATION CAPABILITY: We can simulate, with varying degrees of accuracy inherent in different engineering models, any frequency from LF to optical.

b. HARDWARE-IN-THE-LOOP CAPABILITY: We can simulate RF communications emitters in the 500 kHz to 500 MHz frequency band and non-communications emitters in the 500 MHz to 18 GHz frequency band.

c. MEASUREMENT CAPABILITY: We can simulate frequency ranges from 30 MHz to 15 GHz.

3.3.B.4 What are the available spectra?

a. MODELING & SIMULATION Capability: We can simulate, with varying degrees of accuracy inherent in different engineering models, any frequency from LF to optical.

b. HARDWARE-IN-THE-LOOP CAPABILITY: We have unlimited spectrum availability with our operating frequency bands.

c. MEASUREMENT CAPABILITY: Through close coordination with the DoD Area Frequency Coordinator located here at Fort Huachuca, we can usually obtain adequate frequency clearances in our jammer's range of operation to satisfy any test requirements.

3.3.B.5 Do you have a scene generation capability? If yes, describe.

No.

3.4 ARMAMENTS / WEAPONS

Our tests of armaments and weapons systems generally consist of antenna, performance, environmental, and EM tests of electronic systems. The information requested in this section does not apply.

GENERAL INFORMATION

FACILITY / CAPABILITY TITLE: Electromagnetic Environmental Test Facility (EMETF)

ORIGIN DATE:

Service: U.S. Army **Organization / Activity:** USA Electronic Proving Ground (USAEPG) **Location:** Ft. Huachuca AZ

T&E Functional Area: Other

UIC: WO4YAA

T&E Test Facility Category: ?

	T&E	S&T	DE	NE	T&D	OTHER	
Percentage Use:	50		10			40	= 100
Breakout by T&E Functional Area (%)							
Air Vehicles	2						
Armament / Weapons	7						
Electronic Combat	41		10			40	
Other							

Note: Total in Breakout must equal "Percentage Use" line entry.

"FORM1" **TAB:** **page:**

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

TECHNICAL INFORMATION

FACILITY / CAPABILITY TITLE: Electromagnetic Environmental Test Facility

Facility Description; including mission statement: The mission of the EMETF: Conduct empirical and analytical tests and studies of the electromagnetic (EM) characteristics of equipment and the EM environment, including electromagnetic compatibility (EMC), electromagnetic vulnerability (EMV), and electromagnetic counter countermeasures (ECCM). Plan, develop, acquire and maintain test tools, methods and procedures for conducting E3 testing. The EMETF facility is made up of several capabilities: modeling and simulation, hardware-in-the-loop, and measurements. The modeling and simulation capability consists of computer hardware, software and the data bases which support the analytical engineering software as well as the AR 5-12 Battlefield Electromagnetic Environments Office (BEEO) data base spectrum management mission assigned to us. The analytical software is used in performing the other AR 5-12 mission assigned to us for making assessments which evaluate the EMV and EMC of Army systems. The Stress Loading Facility (SLF) is a real-time, hardware-in-the-loop test facility capable of generating a realistic, complex, and dynamic electromagnetic environment for evaluating the performance of IEW systems under controlled and repeatable conditions. Although the normal configuration is for closed-link testing of IEW systems, the facility can be used for radiated testing at low power levels. The measurement capability of the EMETF collects performance and characteristic data from equipment in the laboratory or placed in the field according to approved deployments. The scenarios or deployments used for this placement are determined as part of the performance of our BEEO mission. Depending on the test requirements, the equipment can be subjected to physical jamming or simulated threat. Spectrum signature measurements on equipment can be performed as well as developmental testing of military optical and electro-optical systems.

Interconnectivity / Multi-Use of T&E Facility: None

Type of Tests Supported: EMC/EMV of Army equipment and systems - Optical/Electro-optical systems
Radar Frequency Interferometer - Target Identification - Measures of Performance of Intelligence Systems
Intercept Systems

Summary of Technical Capabilities: The EMETF is a collection of people, hardware-in-the-loop instrumentation/software, measurement instrumentation/software, simulation and modeling hardware/software, and data bases built up over a number of years to determine the capability of electronic equipments/systems ablity to operate in various electromagnetic environments.

Keywords: RF Simulations - Communications Emitters - Non-communications Emitters - Digital simulations - Spectrum Management
Modeling & Simulation - Palletized Jammers - Spectrum Signature Measurements - Optical/Electo-optical
EMC/EMV/ECCM

"FORM2"

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

ADDITIONAL INFORMATION

FACILITY / CAPABILITY TITLE: Electromagnetic Enviromental Test facility (EMETF)

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	0	0	0	0	0	0	0
Enlisted	0	0	0	0	0	0	0
Civilian	15	15	15	15	15	15	15
Contractor	100	100	80	76	60	48	38
Total	115	115	95	91	75	63	53

Total Square Footage: 44,000

Test Area Square Footage: 6,700

Office Space Square Footage: 37,300

Tonnage of Equipment: 50

Volume of Equipment (cu.ft.): Unknown

Annual Maintenance Cost: $89,141

Estimated Moving Cost: Unknown

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99

"FORM3" TAB: page:

V-4-1-3
SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

FACILITY CONDITION

FACILITY / CAPABILITY TITLE: Electromagnetic Enviromental Test Facility (EMETF)

AGE: 34 Years **REPLACEMENT VALUE:**

MAINTENANCE & REPAIR BACKLOG:

DATE OF LAST UPGRADE: 1994

NATURE OF LAST UPGRADE: Extending UPS wiring throughout the building; enclosing front entrance for better security and climate control.

MAJOR UPGRADES PROGRAMMED

1. **UPGRADE TITLE:**
   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. **UPGRADE TITLE:**
   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: Electromagnetic Environmental test Facility (EMETF)

T&E FUNCT. AREA		FISCAL YEAR 86	87	88	89	90	91
AIR VEHICLES	DIRECT LABOR	25,281	2,127	1,375	765	4,205	3,401
	TEST HOURS						
	MISSIONS						
ELECT. COMBAT	DIRECT LABOR	2,643	2,088	9,789	25,948	24,031	34,352
	TEST HOURS						
	MISSIONS						
ARMNT/WEAPONS	DIRECT LABOR						
	TEST HOURS						
	MISSIONS						
OTHER T&E	DIRECT LABOR	59,570	124,108	155,286	61,471	49,976	55,991
	TEST HOURS						
	MISSIONS						
OTHER	DIRECT LABOR	64,609	27,450	16,981	11,144	21,744	40,930
	TEST HOURS						
	MISSIONS						

"FORM5-0" TAB: page:

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

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HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE:

T&E FUNCT. AREA		FISCAL YEAR 92	93	94	95	96	97
AIR VEHICLES	DIRECT LABOR						
	TEST HOURS	2,887	123				
	MISSIONS						
ELECT. COMBAT	DIRECT LABOR						
	TEST HOURS	8,094	15,171				
	MISSIONS						
ARMNT/WEAPONS	DIRECT LABOR						
	TEST HOURS						
	MISSIONS						
OTHER T&E	DIRECT LABOR						
	TEST HOURS	75,606	41,389				
	MISSIONS						
OTHER	DIRECT LABOR						
	TEST HOURS	23,863	44,272				
	MISSIONS						

"FORM5-1"

TAB: page:

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

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DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY / CAPABILITY TITLE: Electromagnetic Environmental Test Facility (EMETF)

ANNUAL HOURS OF DOWNTIME	1	500
AVERAGE DOWNTIME PER DAY (line 1 / 365)	2	1.35
AVERAGE HOURS AVAILABLE PER DAY (24 / line 2)	3	22.65

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST FACILITY HOUR	WORKLOAD PER FACILITY HOUR
4	5	6	7
SLF	1	~~60~~ 4	~~60~~ 4
Measurement	5	~~40~~ 4	~~200~~ 20
Jamming	2	~~24~~ 6	~~48~~ 16
Sim_&_Mod	4	~~40~~ 8	~~160~~ 32
Typical	12	~~164~~ 6	~~468~~ 72
		Total Sum	

UNCONSTRAINED CAPACITY PER DAY (line 3 * Total Sum)

8 ~~10,600~~ 1630.8

ANNUAL UNCONSTRAINED CAPACITY

9 ~~3,869,000~~ 595,242

"FORM6" TAB: page:

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY / CAPABILITY TITLE: Electromagnetic Environmental Test Facility (EMETF)

ANNUAL HOURS OF DOWNTIME	1	500
AVERAGE DOWNTIME PER DAY (line 1 / 365)	2	1.35
AVERAGE HOURS AVAILABLE PER DAY (24 / line 2)	3	22.65

See prev page

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST FACILITY HOUR	WORKLOAD PER FACILITY HOUR
4	5	6	7
SLF	1	60	60
Measurement	5	40	200
Jamming	2	24	48
Sim & Mod	4	40	160
Typical	12	164	468
		Total Sum	

UNCONSTRAINED CAPACITY PER DAY (line 3 * Total Sum)

8 10,600

ANNUAL UNCONSTRAINED CAPACITY

9 3,869,000

"FORM6" TAB: page:

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM HAWK	23801	0	86	0	0	90	90	90	90
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
UAV	35889	1883	0	0	0	50	50	50	50
PM RADAR	62120	0	9	0	0	25	25	25	25
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
PM UAV	62303	0	110	37	20	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
BRDEC	62785	0	7	0	5	15	15	15	15
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	73	0	0	0	0	0	0
MINE WARFARE	63619	398	0	0	0	0	0	0	0
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
FLD SPT ACT - FT HOOD	65712	0	3555	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	88	84	31	7
Subtotal RDTE		16397	11145	7557	5992	9340	9377	9304	8242
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
HAWK GSE	C28100	290	0	0	0	263	257	243	235
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PM AAH	112000	0	1	0	0	0	0	0	0
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
PM UAV	523200	0	19	122	322	263	257	243	234
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
OTHER PROCUREMENT	VARIOUS	0	0	9	20	430	569	654	717
Subtotal PROCUREMENT		3027	8862	5966	4996	2625	2827	2792	2833
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
MICOM	OMA	0	0	8	0	0	0	0	0
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
FT POLK	OMA	0	95	0	0	0	0	0	0
OTEA	OMA	0	25	0	0	0	0	0	0
TRADOC	OMA	0	279	443	220	200	200	200	200
Miscellaneous OMA	OMA	0	158	18	16	802	817	799	730
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		3589	3902	1672	1021	1652	1717	1749	1780
TOTAL PARENT SERVICE		23013	23909	15195	12009	13617	13921	13845	12855
2. Other DOD									
a. USAF	USAF	1054	1452	1064	1039	556	564	599	654
b. NAVY/MARINE CORPS	USN/USMC	348	1801	1559	1216	1204	1293	1302	1291
c. Misc DOD	MISC DOD	864	111	158	145	32	37	42	47
TOTAL OTHER DOD		2266	3364	2781	2400	1792	1894	1943	1992
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4 TOTAL DIRECT USER FUNDS		25279	27416	29778	23409	22347	20937	20451	19241

SENSITIVE/CLOSE HOLD

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
UAV	35889	1883	0	0	0	50	50	50	50
PM UAV	62303	0	110	37	20	25	25	25	25
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	7	8	9	2
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
FLD SPT ACT - FT HOOD	65712	0	851	0	0		0	0	0
Subtotal RDTE		2219	976	38	20	82	83	84	77
b. PROCUREMENT									
PM AAH	112000	0	1	0	0	0	0	0	0
PM UAV	523200	0	19	122	322	263	257	243	234
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
Subtotal PROCUREMENT		0	136	149	355	263	257	243	234
c. OMA and Other Army									
TRADOC	OMA	0	279	443	220	200	200	200	200
Subtotal OMA and Other Army		0	279	443	220	200	200	200	200
TOTAL PARENT SERVICE		2219	1391	630	595	545	540	527	511
2. Other DOD									
a. USAF	USAF		339		200	134	135	160	184
b. NAVY/MARINE CORPS	USN/USMC		1471	1306	916	750	800	800	800

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
c. Misc DOD	MISC DOD	864	62	24	85	12	12	12	12
TOTAL OTHER DOD		864	1872	1330	1201	896	947	972	996
3. Other U.S. Government									
4. TOTAL DIRECT USER FUNDS		3083	3263	1960	1796	1441	1487	1499	1507

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SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
I. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
MICOM	63322	0	49	0	0	0	0	0	0
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
MISCELLANEOUS R&D	Various	0	0	0	0	9	0	8	0
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
Subtotal RDTE		4464	1713	1263	546	1559	1550	1558	1536
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
Subtotal PROCUREMENT		53	721	1758	1434	377	379	342	337
c. OMA and Other Army									
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	58	18	16	300	300	300	300
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
Subtotal OMA and Other Army		52	2257	830	406	550	550	550	550

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SENSITIVE/CLOSE HOLD

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
TOTAL PARENT SERVICE		4569	4691	3851	2386	2486	2479	2450	2423
2. Other DOD									
a. USAF	USAF	0	0	147	0	18	19	19	20
b. NAVY/MARINE CORPS	USN/USMC	0	13	15	0	18	19	20	20
TOTAL OTHER DOD		0	13	162	0	36	38	39	40
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		4569	4704	4013	2386	2522	2517	2489	2463

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SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ARMAMENTS/WEAPONS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
PM HAWK	23801	0	86	0	0	90	90	90	90
MINE WARFARE	63619	398	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	2	8	8	5
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
Subtotal RDTE		574	86	0	0	92	98	98	95
b. PROCUREMENT									
HAWK GSE	C28100	290	0	0	0	263	257	243	235
Subtotal PROCUREMENT		290	0	0	0	263	257	243	235
c. OMA and Other Army									
Subtotal OMA and Other Army		0	0	0	0	0	0	0	0
TOTAL PARENT SERVICE		864	86	0	0	355	355	341	330
2. Other DOD									
TOTAL OTHER DOD		0	0	0	0	0	0	0	0
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		864	86	0	0	355	355	341	330

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
PM RADAR	62120	0	9	0	0	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
BRDEC	62785	0	7	0	5	15	15	15	15
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
MISCELLANEOUS R&D	Various	0	0	0	0	70	68	6	0
FLD SPT ACT - FT HOOD	65712	0	2704	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
Subtotal RDTE		9140	8253	5845	5055	7295	7332	7320	6311

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
b. PROCUREMENT									
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
OTHER PROCUREMENT	VARIOUS	0	0	9	20	20	55	43	34
Subtotal PROCUREMENT		2684	8005	4059	3207	1312	1420	1353	1344
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
OTEA	OMA	0	25	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	100	0	0	302	317	299	230
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		1626	480	287	229	602	667	699	730
TOTAL PARENT SERVICE		13450	16738	10191	8491	9209	9419	9372	8385
2. Other DOD									
a. USAF	USAF	1054	1113	917	839	404	410	420	450
b. NAVY/MARINE CORPS	USN/USMC	348	306	210	300	400	436	444	431
c. Misc DOD	MISC DOD		49	121	60	20	25	30	35
TOTAL OTHER DOD		1402	1468	1248	1199	824	871	894	916
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		14852	18206	11439	9690	10033	10290	10266	9301

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
I. PARENT SERVICE									
a. RDTE									
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	24	0	0	0	0	0	0
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	0	0	0	0
Subtotal RDTE		0	117	411	371	312	314	244	223
b. PROCUREMENT									
MISCELLANEOUS PROCUREMENT	Various	0	0	0	0	410	514	611	683
Subtotal PROCUREMENT		0	0	0	0	410	514	611	683
c. OMA and Other Army									
MICOM	OMA	0	0	8	0	0	0	0	0
FT POLK	OMA	0	95	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	0	0	0	200	200	200	200
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
Subtotal OMA and Other Army		1911	886	112	166	300	300	300	300
TOTAL PARENT SERVICE		1911	1003	523	537	1022	1128	1155	1206
2. Other DOD									
b. NAVY/MARINE CORPS	USN/USMC		11	41	0	36	38	38	40
TOTAL OTHER DOD		0	11	41	0	36	38	38	40
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		1911	1157	12366	9537	7996	6288	5856	5640

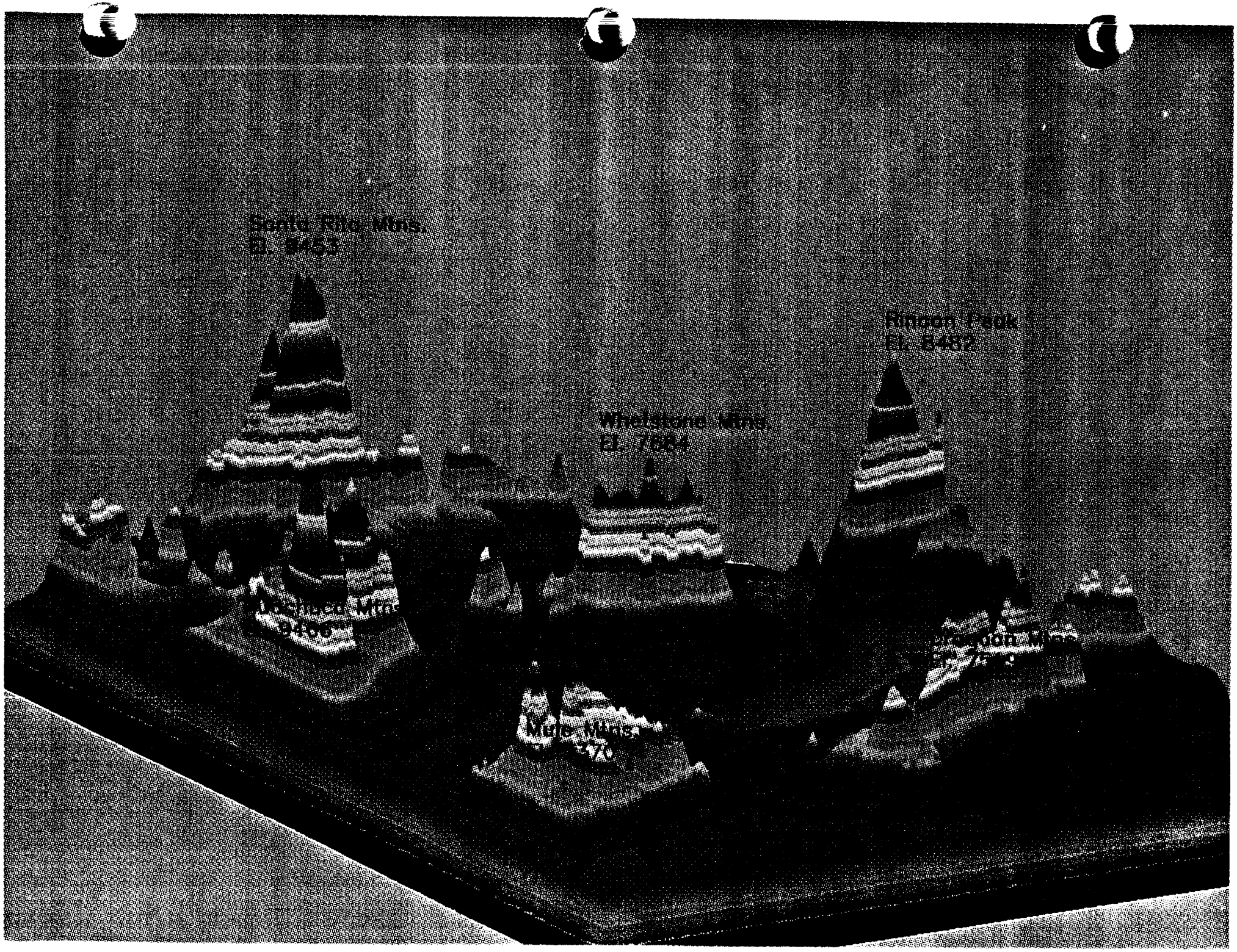
FY92 IN WORKYEARS BY FUNCTIONAL AREA:

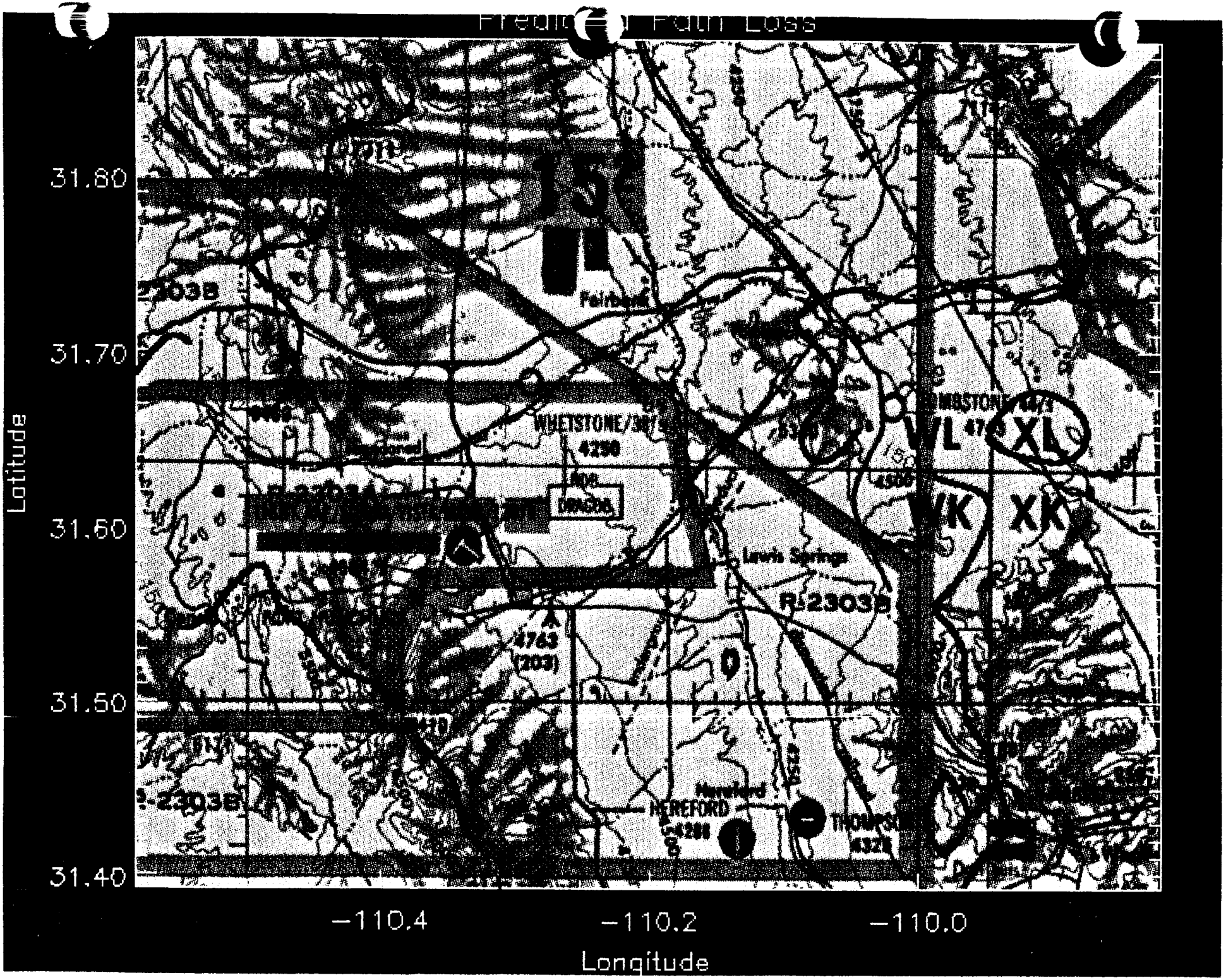
FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	TOTAL WORKYEARS
ENVIRONMENTAL TEST FACILITY	0.4	0.2	0.0	3.8	0.0	4.3
INSTRUMENTED TEST RANGE	59.9	10.5	1.6	50.8	2.2	125.0
RANGE OPERATIONS	3.0	1.1	0.2	2.7	0.1	7.1
EMI/TEMPEST TEST FACILITY	0.4	1.3	0.0	6.3	1.9	9.9
IEW TEST DIVISION	0.0	13.1	0.0	2.7	0.0	15.8
ELECTROMAGNETIC ENVIR TEST FAC	1.7	4.7	0.0	43.5	13.7	63.5
AVIONICS/GPS TEST FACILITY	1.3	0.0	0.0	4.7	0.0	6.0
	66.6	30.9	1.8	114.4	17.8	231.6
EPG CAPABILITY	44.4	47.1	1.2	242.6	15.2	350.4
TOTAL	111.0	78.0	3.0	357.0	33.0	582.0

FY93 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	
ENVIRONMENTAL TEST FACILITY	0.7	1.0	0.0	7.8	0.0	9.5
INSTRUMENTED TEST RANGE	14.3	31.3	0.9	45.6	0.6	92.6
RANGE OPERATIONS	1.8	1.6	0.0	2.7	0.1	6.2
EMI/TEMPEST TEST FACILITY	0.2	1.5	0.0	4.7	1.1	7.6
IEW TEST DIVISION	0.0	9.9	0.0	0.6	0.0	10.5
ELECTROMAGNETIC ENVIR TEST FAC	0.1	8.7	0.0	23.8	25.4	58.0
AVIONICS/GPS TEST FACILITY	0.8	0.0	0.0	7.8	0.0	8.7
	17.9	54.1	0.9	92.9	27.2	193.0
EPG CAPABILITY	3.1	17.9	2.1	302.1	14.8	339.0
TOTAL	21.0	72.0	3.0	395.0	42.0	532.0

EMETF GRAPHICS


Santa Rita Mtns.
El. 8453
Rincon Peak
El. 8482
Whetstone Mtns.
El. 7684
Mule Mtns.


Fairland
WHETSTONE
4250
Lewis Springs
R-2303B
4763
(203)
HEREFORD
THOMPSON
L
XL
K
XK
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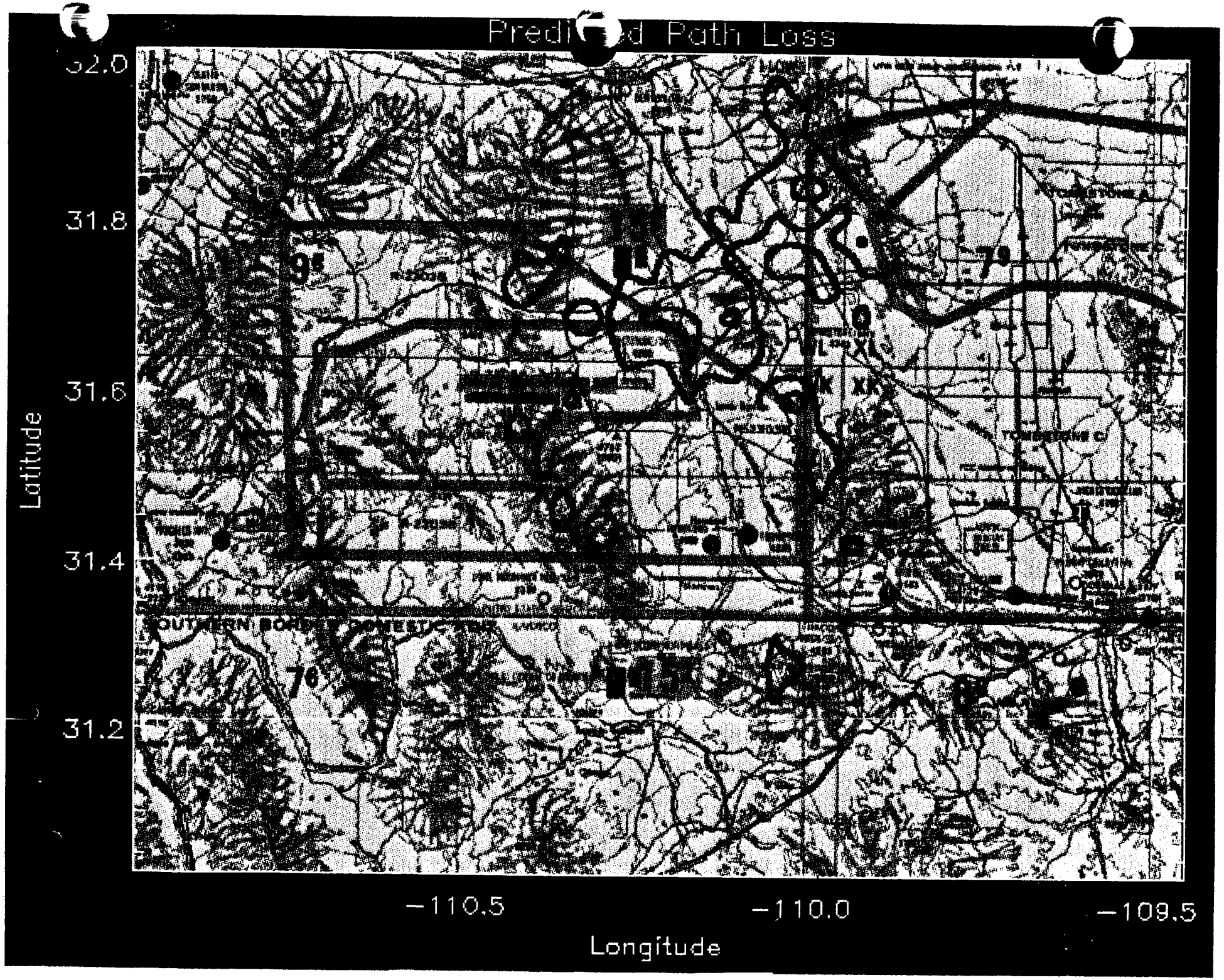
31.70
31.60
31.50
31.40
Latitude
−110.4
−110.2
−110.0
Longitude

FIGURE 2


Predicted Path Loss
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31.8
31.6
31.4
31.2
Latitude
-110.5
-110.0
-109.5
Longitude
95
79
76
SOUTHERN BORDER DOMESTIC STAR

FIGURE 3

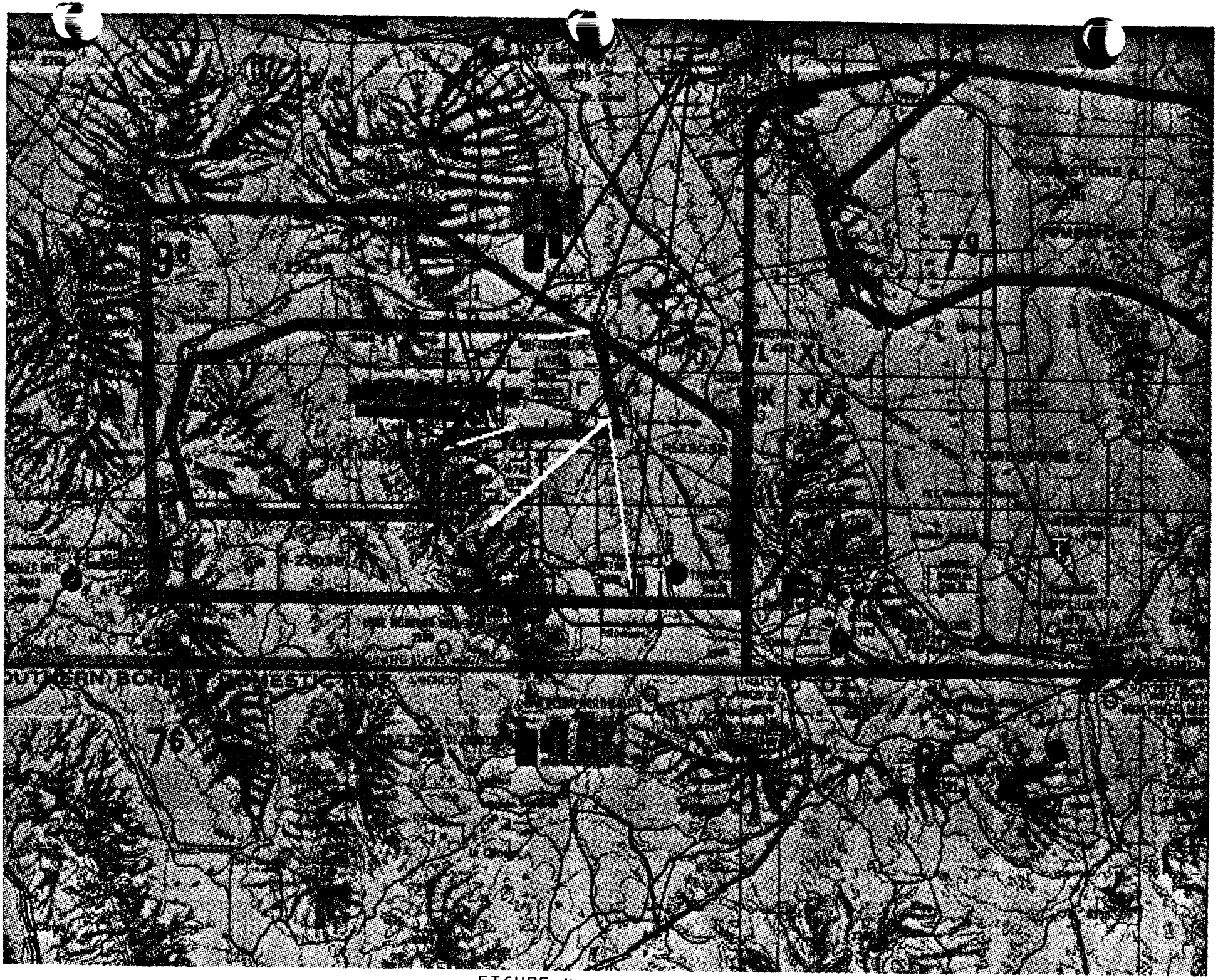
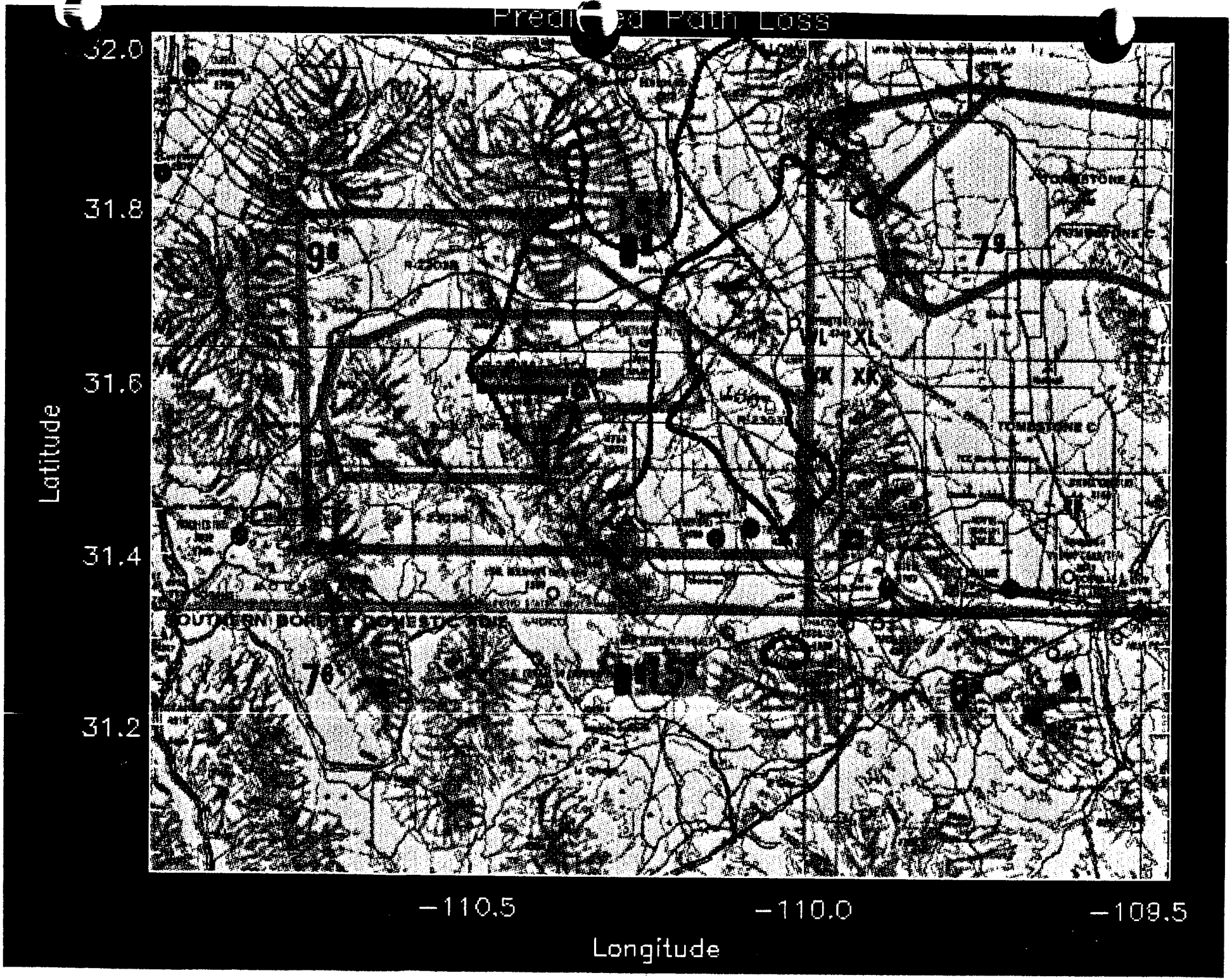


FIGURE 4


Predicted Path Loss
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31.8
31.6
31.4
31.2
Latitude
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-109.5
Longitude
9s
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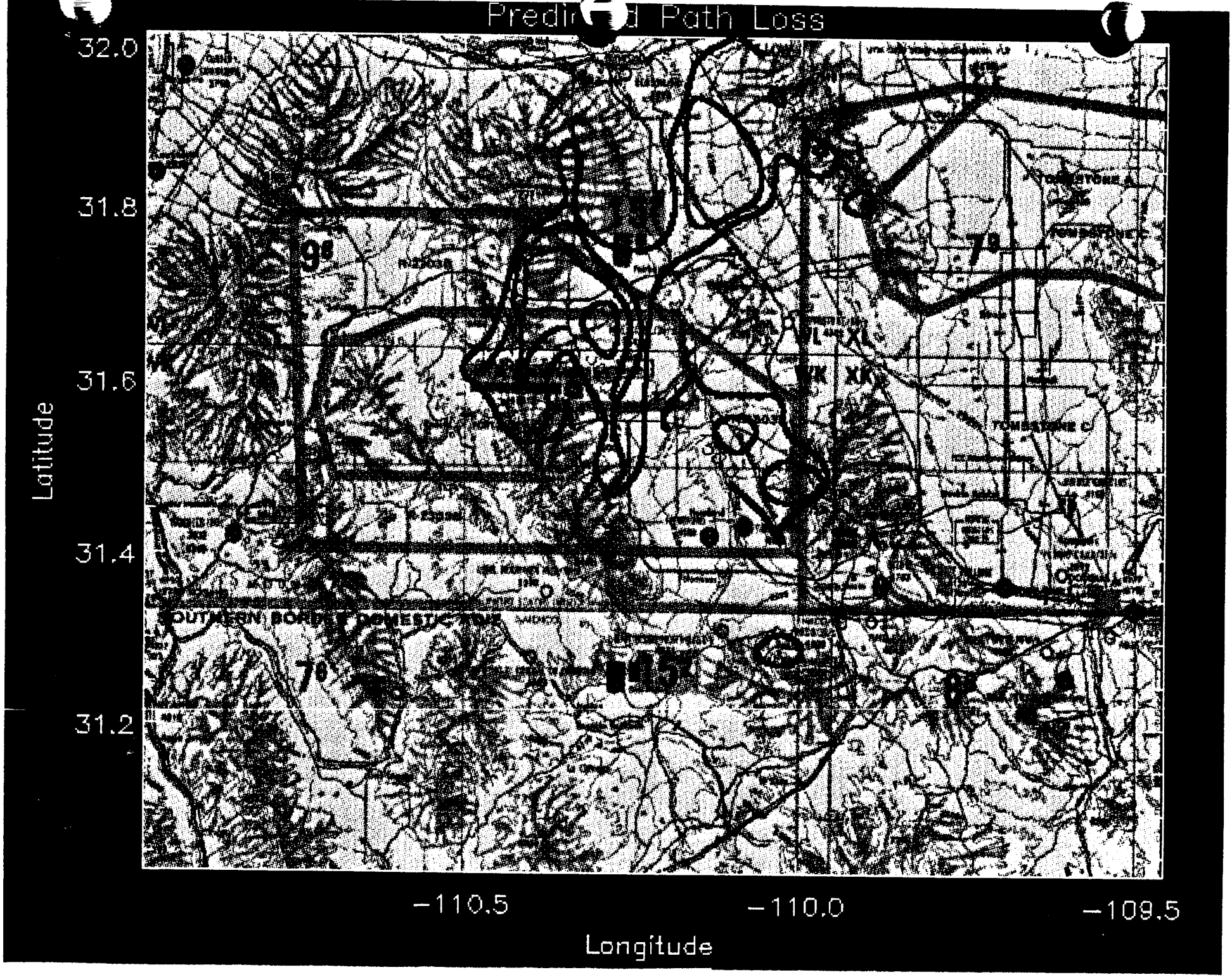
7s
TOMBSTONE
SOUTHERN PORT TROMBSTONE


Predi d Path Loss
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31.8
31.6
31.4
31.2
Latitude
−110.5
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−109.5
Longitude
SOUTHERN BORDER DOMESTIC ZONE
TOMBSTONE

NTIA MANUAL OF REGULATIONS AND PROCEDURES FOR

FEDERAL RADIO FREQUENCY MANAGEMENT

Revision September 1992

May 1992 Edition

The paragraph addressing Coordination for USAEPG and Fort Huachuca.

8.3.8 Coordination of Radio Operations in the Vicinity of Fort Huachuca, Arizona

In order to minimize possible mutual harmful interference between electronic tests of the US Army Electrtonic Proving Ground (USAEPG), Fort Huachuca, Arizona, and the transmission of Government radio stations located in the vicinity of Fort Huachuca, each agency having radio operations in the coordination zone given below shall notify the Area Frequency Coordinator, Fort Huachuca, or the Army IRAC Representative, of the frequency, power, location, and type emission of the radio operations. In addition, the local address and telephone contact of the office or persons supervising or operating such stations should be reported if applicable. Transmissions of mobile stations located within 24 kilometers of Fort Huachuca (31°31'48" N, 110°21'05" W) shall be minimized to the extent feasible.

The coordination zone is the area bounded by connecting lines running along Highway 80 from Tucson to Bisbee, due south from Bisbee to the international border, west along the border to a point due south of Dateland, due north to Dateland, along Highway 80 from Dateland to Gila Bend, and along Highway 84 from Gila Bend to Tucson (traffic on Highways 80 and 84 excluded).

For the protection of the USAEPG, signal levels should not exceed the following limits within 24 kilometers of Fort Huachuca:

10-540 kHz--20 millivolts per meter
540-1600 kHz--50 millivolts per meter
1.6-20 MHz--20 millivolts per meter
20-54 MHz--50 millivolts per meter
54-148 MHz--20 millivolts per meter
above 148 MHz--50 microvolts per meter

NOTE 1

Document Separator

White Sands Missile Range
BRAC 95 R&D Data Call #7
(US Army Electronic Proving Ground)

PART V-5: Data Submission

R&D FACILITY / CAPABILITY TITLE:

EMI/TEMPEST

SECTION 1: GUIDANCE, STANDARDS & ASSUMPTIONS

This section not provided. Please refer to the original guidance and data call for this information.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

2.1 WORKLOAD

2.1.A Historical Workload

2.1.A.1 Use the Historical Workload Form (FORM5-0 and FORM5-1). See enclosure 1.

2.1.B Forecasted Workload

2.1.B.1 Identify all appropriations (by program element) that generated testing or test support requirement, or are expected to generate such a requirement for FY92, FY93, and each year of the FY95 FYDP. See enclosure 2, pages 1 to 14; data are provided as (1) USAEPG rollup and (2) five functional areas.

2.1.B.2 Provide the amount of test work performed at your facility in FY92 and FY93. Break this out by workyears across the functional descriptors. See enclosure 2, page 15.

2.2 UNCONSTRAINED CAPACITY

2.2.A Use the Unconstrained Capacity Form (FORM6). See enclosure 1.

2.2.B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

Capacity is limited by availability of physical facilities.

2.3 TECHNICAL RESOURCES

2.3.A Does the facility have a specified war-time or contingency role established in approved war plans? Yes/no.

No.

2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

USAEPG would lose a major portion of their ability to perform its T&E mission to support materiel acquisition and fielding decisions.

2.3.B.1 On the test mission of any other activity?

USAEPG provides test support to all PMs, PEOs, and independent technical evaluations of electronic system on subsystems. Their mission would be degraded to the extent that test results and analysis would no longer be available to support acquisition and fielding decisions.

2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

As the prime tester of tactical equipment, USAEPG has an impact on the operational effectiveness of the Armed Forces.

SECTION 3: MEASURES OF MERIT

3.1 OVER-ARCHING MEASURES OF MERIT

3.1.A Interconnectivity

3.1.A.1 What percentage of the total test workload of this facility in FY93 involved the real-time or near real-time exchange of data or control with another facility? List the facilities you interconnect to for tests and identify how many are simultaneous activities. Identify these as to whether they are internal or external to the site.

None.

3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected. If yes, explain.

No.

3.1.B Facility Condition

3.1.B.1 Use the Facility Condition Form (FORM4). See enclosure 1.

3.1.C Environmental and Encroachment Carrying Capacity

3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility? If yes, explain.

No. Of the one-thousand, one-hundred and seventy-two (1,172) surveyed test sites that EPG has, only three (3) test sites are declared restricted use for daytime operations due to bat-related restriction periods from July 1 through September 30 of each year. The restricted use test sites are East 1 and 2, and West 1. During this time-frame, the lesser long-nosed (Leptonycteris curasoae yerbaabuenae) bats migrate to these particular sites to feed on the nectar from the flowers of the dense Agave stands. West 1 is restricted because of the proximity to a roosting site. This restriction is considered minor impact to testing.

3.1.C.2 How much could workload be increased before this limit would be reached? Express you answer as a percentage of your current workload.

Workload can be increased to 100 percent local testing in Fort Huachuca. Our estimate is based on communications-electronic, unmanned aerial vehicle (UAV), and laboratory type (e.g. computer simulation, environmental, and reliability) testing. As an example, abatement procedures are in place for night testing/operations of UAVs during July 1 to September 30.

3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire, and describe them.

Yes. There are two voluntary agreements. These are with:

(1) The U.S. Fish and Wildlife Service to protect roost sites and forage habitat for the lessor long-nosed bat. There is no expiration date for this agreement.

(2) The Arizona Archeological Society to perform investigation/archeological studies conducted by surveys, excavations and mitigation of possible historical and/or archeological importance. There is no expiration date for this agreement.

3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

a. State population was considered and not international population. Due to the location of Fort Huachuca, if we take a 50 miles radius, with Fort Huachuca being the center of the circumference, the southern-most portion of the circumference falls into international lines (Republic of Mexico).

b. The total population within a 50 miles radius is 97,624. The 50 miles radius encompasses the counties of Cochise, portions of Pima, and Santa Cruz.

c. The total population within a 100 miles radius is approximately 577,500. The 100 miles radius encompasses the counties of Cochise and portions of Pima, and Santa Cruz.

d. The total population within a 150 miles radius is 820,734. The 150 miles radius encompasses the counties of Cochise and Pima, Graham, and, Pinal.

e. The total population within a 200 miles radius is 2,942,835. The 200 miles radius encompasses the counties of Cochise, Santa Cruz, Pima, Graham, Pinal, Gila, and portions of Maricopa.

f. Cochise County consists of the following populated areas: Benson, Bisbee, Bowie, Cochise, Douglas, Dragoon, Elfrida, Hereford, Huachuca City, McNiel, Naco, Pearce, Pirtleville, Pomerene, Saint David, San Simon, Sierra Vista, Tombstone, and Willcox. Fort Huachuca was annexed by Sierra Vista in 1971.

g. Graham County consists of the following populated areas: Bylas, Central, Fort Thomas, Pima, Safford, Soloman, and Thatcher.

h. Maricopa County (only those that fell into the radius of consideration) consists of the following populated areas: Arlington, Avondale, Buckeye, Cashion, Chandler, El Mirage, Gila Bend, Gilbert, Glendale, Mesa, Phoenix, Scottsdale, and Tempe.

i. Pima County consists of the following populated areas: Ajo, Arivaca, Cortaro, Green Valley, Lukeville, Marana, Mount Lemon, Rillito, Sahuarito, Sasabe, Sells, Topawa, and Tucson.

j. Pinal County consists of Casa Grande, Coolidge, Eloy, Florence, Kearny, Mammoth, Maricopa, Oracle, Picacho, Red Rock,
Sacaton, San Manuel, Stanfield, Superior, and Valley Farms.

k. Santa Cruz County consists of the following populated areas: Elgin, Nogales, Patagonia, Sonoita, and Tumacacori.

3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and the frequency of use for each that affect of could affect mission accomplishment in your air, land, or sea space.

a. Commercial air travel is available from Fort Huachuca to Phoenix.

b. Arizona Highway 90 feeds Fort Huachuca from the north, where it originates from Interstate 10, 30 miles away. This is the major route leading into the reservation.

c. Arizona Highway 92 originates at the Fort Huachuca east gate and proceeds east and then south around the northern and eastern boundaries of the City of Sierra Vista.

SENSITIVE/CLOSE HOLD

Errata Sheet # 4 of 10

1. This Errata Sheet applies to the following EPG R&D Faciilty/Capability Data Submissions:

Range Operations Capabilities
Environmental Test Facility
Instrumented Test Range
Electromagnetic Environmental Test Facility
EMI/TEMPEST Test Capabilities
Intelligence & Electronic Warfare
Avionics/ Global Positioning System
General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.1.d.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

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c. Black Tower Complex. The Black Tower Complex is dedicated for the use of all UAV testing and training on Fort Huachuca. This complex is composed of 3 hangars, parachute tower, hazardous material storage facility, explosive storage bunker, 2 runways (1 *dirt runway 220' x 2000' (as of Jul 94),* and a paved runway, 75' x 3000'). In addition, the following are available to UAV testing: frequency coordination, precision tracking, area surveillance, real-time and post-test digital data, communications and timing, photographic and video support, optical/infrared targets, and radar/communications threat environment.

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several sections skipped

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3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes. explain.

a. Yes. The platform is being completely rebuilt and should increase its capacity. The west turntable will be going through a major rehabilitation.

b. *The UAV dirt runway expansion to 2,000 feet will be complete in July of 1994.*

d. Fry Boulevard, the main street of Sierra Vista, originates at the Fort Huachuca main gate and proceeds due east through the heart of the city.

e. Buffalo Soldier Trail also originates at the Fort Huachuca main gate, proceeds south and then east around the southern boundary of the city.

f. Garden Avenue runs north and south and connects Fort Huachuca's main and east gates.

g. A dirt road originates at Fort Huachuca's west gate and proceeds west into the Coronado National Forest.

h. the commercial use of Restricted Areas R-2303A and R-2303B has negligible impact on the testing that EPG conducts. The ingress/egress of commercial traffic to Sierra Vista Airport is deconflicted by coordination with Libby Tower.

3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

None.

3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

None.

3.1.D Specialized Test Support Facilities and Targets

see prev page

3.1.D.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

The facility is comprised of a remote radio frequency (RF) quiet location, eight shielded chambers, a unique Transverse Electromagnetic Reverberation (TEM/REV) chamber and extensive instrumentation suites. The facility consists of (1) a 44' long x 22' wide x 18' high anechoic chamber with a door size of 14' high x 12' wide and 120 Db of RF isolation; (2) a 26' long x 15' wide x 11.5' high shielded chamber providing 100 Db of RF isolation: (3) a 12' long x 10' wide x 11.5 high shielded room for mission testing of compact military electronic material; (4) a 12' long x 8' wide x 8' high shielded control room; (5) a 20' long x 16' wide x 10' high shielded test room; (6) a 10' long x 8' wide x 8' high shielded control room; (7) a 12' long x 8' wide x 8' high shielded SCIF; (8) a 60' long x 25' wide x 20' high shielded test chamber soon to be completed; (9) a TEM/REV chamber 12.7' long x 7.9' wide x 4.3' high for E-field immersion testing up to 3000 V/M (rms) from 10 KHZ to 40 GHz.

3.1.D.2 Are specialized targets required to support this facility, If yes, explain.

No.

3.1.D.2.A Have the specialized targets been validated? If yes, by whom?

No.

3.1.E **Expandability**

3.1.E.1 Other than the expandability inherent in the unconstrained capacity (FORM 6) discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? If yes, explain.

No.

3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? If yes, identify by T&E functional area and test type.

No.

3.1.E.2 Are the airspace, land, and water areas adjacent to areas under DoD control available and/or suitable for physical expansion to support new missions or increased footprints. If yes, explain.

Generally, surrounding non-DoD properties are either privately owned, National Forest, Park Service, or Bureau of Land Management managed. Use of some of these lands can be negotiated for certain types of tests.

3.1.E.3 Is the facility equipped to support secure operations. If yes, to what level of Classification (Confidential -> Special Access)?

Yes, up to and including SAR.

see page prior 3.1.D.1

3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes, explain.

No.

3.1.F **Uniqueness**

3.1.F.1 Is this a one-of-a-kind facility within the DoD? If yes, explain.

Yes. The EMI & TEMPEST Lab is the only DoD lab we know of with a "blanket" frequency clearance which allows susceptibility testing of systems to be conducted outside through the frequency range of 10 kHz to 40 GHz.

3.1.F.1.A Within the U.S. Government? If yes, explain

Yes. See 3.1.F.1 above.

3.1.F.1.B Within the U.S? If yes, explain.

Yes. See 3.1.F.1 above.

3.1.F.2 Are you currently providing support to DoD users outside your Military Department? If yes, indicate the percentage of total workload in FY92 and FY93 by Military Department.

Yes.	FY92	FY93
NAVY	.7%	.1%
MARINE CORPS	.4%	1.6%
AIR FORCE	1.4%	2.9%
	2.5%	4.6%

3.1.G **Available Air, Land, and Sea Space**

Not applicable.

3.1.H **Geographic/Climatological Features**

3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap of the earth). Identify all of the following that apply: mountains, forest, jungle, cultivated lowland, swamp, riverine, desert, and sea. State the area of each in square miles.

a. The Fort Huachuca military reservation is geographically located in the inter-mountain desert plateau region between the souther most extent of the Rocky mountains and the northern most extent of the Sierra Madres. The area of land is covered by the installation is 115 square miles. The elevation varies from 3,925 feet to 7,709 feet above sea level wit 30 percent of the area located in rugged mountainous terrain. The remaining terrain is typified by rolling hills gradually flattening away from the mountains. Vegetation in the area is lower elevations. Above 5,000 feet Black Oak and Juniper are common and above 6,500 feet yellow pine is predominate.

b. The word "Huachuca" means "Place that Thunders" and from June to September, Fort Huachuca lives up to its name, 85 to 99 percent of the annual lightening activity occurs during this time. Activity can range from isolated mountain thundershowers to powerful Mesoscale Convective Complexes. Thunderstorms are DANGEROUS, due to the potential for lightning strikes, range and forest fires, strong winds, hail, heavy precipitation and flash flooding.

c. Precipitation in the area varies dramatically from season to season and from year to year. The average annual precipitation from 1956 to present is 14.91 inches. Measurable precipitation can occur during every month of the year, but is most likely to occur in July

and August. Fifty to 75 percent of the annual precipitation recorded typically falls during these two months. From November to late April, depending on the temperature, snow showers can occur with accumulations frequent above 5,000 feet.

d. Wind direction and speed are greatly influenced by seasonal, diurnal and orographic effects. Typically winds in the morning are from the southeast at 5 to 10 knots shifting to the southwest at 8 to 16 with occasional gusts to 24 knots. During the fall, winter, and spring strong wind events with winds from the south to southwest at 20 to 30 with gusts in excess of 50 knots and a duration of several hours to several days can occur 10 to 25 percent of the time. During the summer strong down burst winds associated with the thunderstorms with instantaneous gusts in excess of 60 knots can occur with little warning.

e. Temperatures in the local area are moderate with the extremes ranging from a high of 107 to a low of 9 degrees. Average summertime temperatures range from highs in the upper eighties to lows in the mid-sixties. Average wintertime temperatures range from highs in the low sixties to lows in the mid thirties. The average temperature for the year is 62 degrees.

f. Fort Huachuca is an excellent location for a wide variety of test activities with environmental considerations. Most of the moderate to severe weather conditions discussed above are of relatively short duration, and with proper planning, mission delays can be held to a minimum all year round.

3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of test?

No.

3.1.H.3 Do you have to go to other geographical locations to satisfy test requirements? If yes, explain. If yes, provide as a percent of overall workload per year for the last 8 years.

No.

3.1.H.4 Number of days per year with average temperature below 32 degrees F? Between 32 and 95 degrees F? Above 95 degrees F?

All 365 days in an average year have a daily average temperature between 32 and 95 degrees fahrenheit. During the entire 35 year period covered by our climatological database, approximately 10 days had daily averages below 32 degrees which equates to one such day every 3-4 years. The highest daily average temperature during the same period has been 90 degrees which occurs only once or twice each year. The hottest weather at this location is accompanied by low relative humidity which results in good night times cooling after a hot day.

3.1.H.5. Number of days per year with average relative humidity below 30%? Between 30 and 80%? Above 80%

The average number of days per year with an average relative humidity below 30% is 150. Humidity can occasionally fall below 10% during these days. An average of 194 days per year have average relative humidities between 30% and 80%. Finally, 21 days per year, on average, have an average relative humidity above 80%.

3.1.H.6 Number of test missions per year (85 - 93) canceled due to weather?

Not applicable.

3.1.H.7 Number of test days per year (85 - 93) canceled due to weather?

Not applicable.

3.1.H.8 Number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

Based upon the 35 year climatological database, there are no full 24 hour periods during which the visibility drops below 3 miles. Restricted visibility occurs most often during periods of showery types of precipitation which occur primarily during the winter and summer rainy seasons. Occurrences of fog occur primarily during the winter and are of short duration. Based upon climatology, 2.3% or 197.6 hours has visibility below 3 miles in an average year. This equates to a total of 8.2 days. Visibility of 1-3 miles occurs, on average, a total of 109.6 hours while visibility less than one mile occurs a total of 88.1 hours a year or about 1% of the time on average. December is the month with the highest number of occurrences with 29.8 hours with visibility of 1-3 miles and 14.9 hours with visibility below 1 mile on average. Visibility below 3 miles has never been reported in June.

3.1.H.9 What is the average number of flying days available per year for flight tests? Provide historical average from the past eight years.

The average number of flying days available per year based solely upon weather conditions during the period of review is 353. This equates to 96.7% of all days in a year being available. The primary weather condition that may make a day unavailable is strong wind since all other adverse weather conditions are intermittent in nature.

3.1.H.10 What percentage of the time are your test operations restricted due to weather?

Not applilcable.

SENSITIVE/CLOSE HOLD

Errata Sheet # 5 of 10

1. This Errata Sheet applies to the following EPG R&D Facility/Capability Data Submission:

   Range Operations Capabilities
   Environmental Test Facility
   Instrumented Test Range
   Enectromagnetic Environmental Test Facility
   EMI/TEMPEST Test Capabilities
   Intelligence & Electronic Warfare
   Avionics/Global Positioning Systems
   General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.2.A.6 What is the maximum number of simultaneous users?

Number of simultaneous users is limited by USAF or other military department rules on supersonic flight in restricted corridors. No specific limitation on the number of simultaneous users is available to EPG.

3.2.B **Airfield and Facility Characteristics**

3.2.B.1 Provide a brief description of your airfield and support facilities.

Libby Army Airfield is a Joint Use Airfield *owned by Ft. Huachuca (TRADOC)* and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be all concrete when completed (FY95) and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and belongs to Ft. Huachuca.

3.2 AIR VEHICLES

3.2.A Supersonic Airspace see prev page

Not applicable.

3.2.B Airfield and Facility Characteristics

3.2.B.1 Provide a brief description of your airfield and support facilities. see prev page

Libby Army Airfield is a Joint Use Airfield and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be al concrete when completed and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and does not belong to the Proving Ground.

3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

Hubbard assault strip is 5 miles from Libby and could be used for an emergency landing.

3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

Libby Field is situated within R-2303B.

3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

Libby Field is unique because of length, position relative to the restricted airspace and the weather found in southern Arizona.

3.2.B.5 Is there a size, weight, maintenance, or mission limitation that would affect test operations? If yes, describe.

No.

3.2.B.6 Including hangers an ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise Missiles?

Excluding hangars, enough ramp area exists to support approximately 20 fighter size aircraft 10 multi-engine aircraft or 25 rotary wing aircraft.

3.2.C. **Test Operations**

3.2.C.1 What types of air vehicle testing can be supported? Describe?

Unmanned Air Vehicles, Space Shuttle, SR-71, Rotary Wing, and some Fixed Wing.

3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

Yes.

3.2.C.3 What kinds, numbers of aircraft and mix of same can be supported (manned and unmanned)?

Any type of unmanned vehicle can be supported. Currently, only the aircraft listed in 3.2.C.8 below can be supported.

3.2.C.4 Does UAV and or rotary wing operations pose any limitations on other types of missions? If yes, explain.

No.

3.2.C.5 What sorts of missions can be flown within local airspace?

Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

Not applicable.

3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

Not applicable.

3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

Not applicable.

3.3 ELECTRONIC COMBAT

3.3.A Threat Environment

Not applicable.

3.3.B Test Article Support

3.3.B.1 Is there a size, weight, or other limitation on test operations the facility can support? If yes, explain and describe measures needed to remove them.

Yes, we cannot support fixed wing aircraft because the building in which the EMI & TEMPEST Lab is located does not have access to the airfield. There are no immediate plans to remove this restriction.

3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

Not applicable.

3.3.B.3 What range of spectra can be tested and evaluated?

a. For emissions testing 20 Hz to 40 GHz.

b. For radiated/susceptibility testing DC to 40 GHz.

3.3.B.4 What are the available spectra?

See 3.3.B.3 above.

3.3.B.5 Do you have a scene generation capability? If yes, describe.

No.

3.4 ARMAMENTS / WEAPONS

Our tests of armaments and weapons systems generally consist of antenna, performance, environmental, and EM tests of electronic systems. The information requested in this section does not apply.

GENERAL INFORMATION

FACILITY / CAPABILITY TITLE: EMI/Tempest Test Facility

ORIGIN DATE: 16 May 1994

Service: U.S. Army **Organization / Activity:** USA Electronic Proving Ground (USAEPG) **Location:** Ft. Huachuca AZ

T&E Functional Area: Other UIC: WO4YAA

T&E Test Facility Category: DMS

	T&E	S&T	DE	NE	T&D	OTHER	
Percentage Use:	80		10			10	= 100
Breakout by T&E Functional Area (%)							
Air Vehicles	5						
Armament / Weapons							
Electronic Combat	10						
Other	65		10			10	

Note: Total in Breakout must equal "Percentage Use" line entry.

"FORM1" TAB: page:

TECHNICAL INFORMATION

FACILITY / CAPABILITY TITLE: EME/TEMPEST Test Facility

Facility Description; including mission statement: The mission of the EMI/TEMPEST Test Facility mission is to plan, conduct, evaluate, and report on the Electromagnetic Interference (EMI), TEMPEST, and Intrasystem electromagnetic compatibility (IEMC) tests of sophisticated electronic equipment and systems. This includes the responsibility to review and/or monitor tests conducted by contractors of other agencies; and to provide EMI/TEMPEST consultant services to Project Managers. EMI testing is accomplished IAW MIL-STD-461 A,B,C,D & MIL-STD-462 & 463; TEMPEST testing IAW NACSIM 5100A, NACSEM 5112, NTISSAM 1-91, and KAG 30; IEMC testing IAW MIL-E-6051.

The facility is comprised of a remote radio frequency (RF) quiet location, eight shielded chambers, a unique Transverse Electromagnetic Reverberation (TEM/REV) chamber and extensive instrumentation suites. The facility consists of (1) a 44' long x 22' wide x 18' high anechoic chamber with a door size of 14' high x 12' wide and 120 Db of RF isolation; (2) a 26' long x 15' wide x 11.5' high shielded chamber providing 100 Db of RF isolation: (3) a 12' long x 10' wide x 11.5 high shielded room for mission testing of compact military electronic material; (4) a 12' long x 8' wide x 8' high shielded control room; (5) a 20' long x 16' wide x 10' high shielded test room; (6) a 10' long x 8' wide x 8' high shielded control room; (7) a 12' long x 8' wide x 8' high shielded SCIF; (8) a 60' long x 25' wide x 20' high shielded test chamber soon to be completed; (9) a TEM/REV chamber 12.7' long x 7.9' wide x 4.3' high for E-field immersion testing up to 3000 V/M (rms) from 10 KHZ to 40 GHz.

Interconnectivity / Multi-Use of T&E Facility: None

Type of Tests Supported: EMI, TEMPEST, IEMC

Summary of Technical Capabilities:

a. Three Dynamic Sciences, INC. (DSI) TEMPEST test systems providing automated testing IAW NACSIM, NTISSAM, and KAG requirements.

b. One Electro-Metrics, one DSI, two Hewlett Packard automated EMI data collection systems providing automated data collection IAW MIL-STD-461A,B,C,D and MIL-STD-462/463 radiated and conducted emission testing from 20 KHz to >40 GHz.

c. An integrated EMI susceptibility system allowing RF illumination of equipment under test from 10 KHz to 40 GHz at field intensities up to 200V/M (rms).

d. An extensive assortment of parallel element, rod, biconical, log periodic, double ridge guide antennae, associated RF amplifiers and electric field probes providing RF illumination and emanation detection capabilities across the 40 GHz spectrum revellent to EMI and TEMPEST arena

TECHNICAL INFORMATION
CONTINUED

FACILITY / CAPABILITY TITLE: EME/TEMPEST Test Facility

e. TEM/REV chamber instrumentation consist of an HP 8566B spectrum analyzer, HP 5400A digital oscilloscope, HP 8600C signal generator, HP 8350A RF oscillator, Varian TWT suite, HP 438A power meter, and HP QS-20 computer and supporting peripherals which provide fully automated control of the instrumentation

Keywords: EMI, TEMPEST, IEMC

"FORM2" **TAB:** **page:**

ADDITIONAL INFORMATION

FACILITY / CAPABILITY TITLE: EMI TEMPEST Test Facility

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	0	0	0	0	0	0	0
Enlisted	7	5	5	5	5	5	5
Civilian	11	8	7	7	7	7	7
Contractor	1	1	2	2	2	2	2
Total	19	14	14	14	14	14	14

Total Square Footage: 10,800

Test Area Square Footage: 9550

Office Space Square Footage: 1250

Tonnage of Equipment: Unkown

Volume of Equipment (cu.ft.):

Annual Maintenance Cost: 89,141

Estimated Moving Cost: Unknown

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
250K	150K					

"FORM3" **TAB:** **page:**

FACILITY CONDITION

FACILITY / CAPABILITY TITLE: EMI/TEMPEST Test Facility

AGE: 25 Years **REPLACEMENT VALUE:** 8.0M (Replacement value not including the original 150' x 45' building constructed in the 1950's)

MAINTENANCE & REPAIR BACKLOG:

DATE OF LAST UPGRADE: 1994

NATURE OF LAST UPGRADE: Automated EMI test system

MAJOR UPGRADES PROGRAMMED

1. **UPGRADE TITLE:**
   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. **UPGRADE TITLE:**
   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: EMI TEMPEST Test Facility

T&E FUNCT. AREA		FISCAL YEAR 86	87	88	89	90	91
AIR VEHICLES	DIRECT LABOR TEST HOURS MISSIONS	4,082	1,076	469	194	200	2,131
ELECT. COMBAT	DIRECT LABOR TEST HOURS MISSIONS	234	1,650	5,010	1,454	580	2,598
ARMNT/WEAPONS	DIRECT LABOR TEST HOURS MISSIONS						
OTHER T&E	DIRECT LABOR TEST HOURS MISSIONS	19,377	18,446	10,627	12,705	11,355	10,886
OTHER	DIRECT LABOR TEST HOURS MISSIONS	113	1,313	2,077	1,500	2,309	1,094

"FORM5-0" TAB: page:

SENSITIVE/CLOSE HOLD

HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: EMI TEMPEST Test Facility

T&E FUNCT. AREA		FISCAL YEAR 92	93	94	95	96	97
AIR VEHICLES	DIRECT LABOR						
	TEST HOURS	627	417				
	MISSIONS						
ELECT. COMBAT	DIRECT LABOR						
	TEST HOURS	2,339	2,672				
	MISSIONS						
ARMNT/WEAPONS	DIRECT LABOR						
	TEST HOURS	10,947	8,184				
	MISSIONS						
OTHER T&E	DIRECT LABOR						
	TEST HOURS	3,253	1,871				
	MISSIONS						
OTHER	DIRECT LABOR						
	TEST HOURS						
	MISSIONS						

These figures appear to be up 1 line and really belong in OtherT&E other

D Rucklind/ECTm 18 Aug 94

"FORM5-1"

TAB: (ECO11) page:

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DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY / CAPABILITY TITLE: EMI TEMPEST Test Facility

ANNUAL HOURS OF DOWNTIME	1	216
AVERAGE DOWNTIME PER DAY (line 1 / 365)	2	.6
AVERAGE HOURS AVAILABLE PER DAY (24 / line 2)	3	23.4

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST FACILITY HOUR	WORKLOAD PER FACILITY HOUR
4	5	6	7
EMI/TEMPEST	5	~~200~~ 2	100
		Total Sum	

UNCONSTRAINED CAPACITY PER DAY (line 3 * Total Sum)

8 ~~23,400~~ 234

ANNUAL UNCONSTRAINED CAPACITY

9 ~~8,541,000~~ 8540

"FORM6"

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DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY / CAPABILITY TITLE: EMI TEMPEST Test Facility

ANNUAL HOURS OF DOWNTIME	1	216
AVERAGE DOWNTIME PER DAY (line 1 / 365)	2	.6
AVERAGE HOURS AVAILABLE PER DAY (24 / line 2)	3	23.4

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST FACILITY HOUR	WORKLOAD PER FACILITY HOUR
4	5	6	7
EMI/TEMPEST	5	200	1,000
		Total Sum	

see prev page

UNCONSTRAINED CAPACITY PER DAY (line 3 * Total Sum)

8 23,400

ANNUAL UNCONSTRAINED CAPACITY

9 8,541,000

"FORM6"

TAB: page:

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM HAWK	23801	0	86	0	0	90	90	90	90
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
UAV	35889	1883	0	0	0	50	50	50	50
PM RADAR	62120	0	9	0	0	25	25	25	25
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
PM UAV	62303	0	110	37	20	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
BRDEC	62785	0	7	0	5	15	15	15	15
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	73	0	0	0	0	0	0
MINE WARFARE	63619	398	0	0	0	0	0	0	0
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
FLD SPT ACT - FT HOOD	65712	0	3555	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	88	84	31	7
Subtotal RDTE		16397	11145	7557	5992	9340	9377	9304	8242
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
HAWK GSE	C28100	290	0	0	0	263	257	243	235
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PM AAH	112000	0	1	0	0	0	0	0	0
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
PM UAV	523200	0	19	122	322	263	257	243	234
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
OTHER PROCUREMENT	VARIOUS	0	0	9	20	430	569	654	717
Subtotal PROCUREMENT		3027	8862	5966	4996	2625	2827	2792	2833
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
MICOM	OMA	0	0	8	0	0	0	0	0
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
FT POLK	OMA	0	95	0	0	0	0	0	0
OTEA	OMA	0	25	0	0	0	0	0	0
TRADOC	OMA	0	279	443	220	200	200	200	200
Miscellaneous OMA	OMA	0	158	18	16	802	817	799	730
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		3589	3902	1672	1021	1652	1717	1749	1780
TOTAL PARENT SERVICE		23013	23909	15195	12009	13617	13921	13845	12855
2. Other DOD									
a. USAF	USAF	1054	1452	1064	1039	556	564	599	654
b. NAVY/MARINE CORPS	USN/USMC	348	1801	1559	1216	1204	1293	1302	1291
c. Misc DOD	MISC DOD	864	111	158	145	32	37	42	47
TOTAL OTHER DOD		2266	3364	2781	2400	1792	1894	1943	1992
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		25279	27416	29778	23409	22347	20937	20451	19241

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
UAV	35889	1883	0	0	0	50	50	50	50
PM UAV	62303	0	110	37	20	25	25	25	25
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	7	8	9	2
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
FLD SPT ACT - FT HOOD	65712	0	851	0	0		0	0	0
Subtotal RDTE		2219	976	38	20	82	83	84	77
b. PROCUREMENT									
PM AAH	112000	0	1	0	0	0	0	0	0
PM UAV	523200	0	19	122	322	263	257	243	234
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
Subtotal PROCUREMENT		0	136	149	355	263	257	243	234
c. OMA and Other Army									
TRADOC	OMA	0	279	443	220	200	200	200	200
Subtotal OMA and Other Army		0	279	443	220	200	200	200	200
TOTAL PARENT SERVICE		2219	1391	630	595	545	540	527	511
2. Other DOD									
a. USAF	USAF		339		200	134	135	160	184
b. NAVY/MARINE CORPS	USN/USMC		1471	1306	916	750	800	800	800

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P E /SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
c. Misc DOD	MISC DOD	864	62	24	85	12	12	12	12
TOTAL OTHER DOD		864	1872	1330	1201	896	947	972	996
3. Other U.S. Government									
4. TOTAL DIRECT USER FUNDS		3083	3263	1960	1796	1441	1487	1499	1507

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
MICOM	63322	0	49	0	0	0	0	0	0
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
MISCELLANEOUS R&D	Various	0	0	0	0	9	0	8	0
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
Subtotal RDTE		4464	1713	1263	546	1559	1550	1558	1536
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
Subtotal PROCUREMENT		53	721	1758	1434	377	379	342	337
c. OMA and Other Army									
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	58	18	16	300	300	300	300
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
Subtotal OMA and Other Army		52	2257	830	406	550	550	550	550

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
TOTAL PARENT SERVICE		4569	4691	3851	2386	2486	2479	2450	2423
2. Other DOD									
a. USAF	USAF	0	0	147	0	18	19	19	20
b. NAVY/MARINE CORPS	USN/USMC	0	13	15	0	18	19	20	20
TOTAL OTHER DOD		0	13	162	0	36	38	39	40
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		4569	4704	4013	2386	2522	2517	2489	2463

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ARMAMENTS/WEAPONS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
PM HAWK	23801	0	86	0	0	90	90	90	90
MINE WARFARE	63619	398	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	2	8	8	5
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
Subtotal RDTE		574	86	0	0	92	98	98	95
b. PROCUREMENT									
HAWK GSE	C28100	290	0	0	0	263	257	243	235
Subtotal PROCUREMENT		290	0	0	0	263	257	243	235
c. OMA and Other Army									
Subtotal OMA and Other Army		0	0	0	0	0	0	0	0
TOTAL PARENT SERVICE		864	86	0	0	355	355	341	330
2. Other DOD									
TOTAL OTHER DOD		0	0	0	0	0	0	0	0
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		864	86	0	0	355	355	341	330

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
PM RADAR	62120	0	9	0	0	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
BRDEC	62785	0	7	0	5	15	15	15	15
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
MISCELLANEOUS R&D	Various	0	0	0	0	70	68	6	0
FLD SPT ACT - FT HOOD	65712	0	2704	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
Subtotal RDTE		9140	8253	5845	5055	7295	7332	7320	6311

SENSITIVE/CLOSE HOLD

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
b. PROCUREMENT									
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
OTHER PROCUREMENT	VARIOUS	0	0	9	20	20	55	43	34
Subtotal PROCUREMENT		2684	8005	4059	3207	1312	1420	1353	1344
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
OTEA	OMA	0	25	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	100	0	0	302	317	299	230
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		1626	480	287	229	602	667	699	730
TOTAL PARENT SERVICE		13450	16738	10191	8491	9209	9419	9372	8385
2. Other DOD									
a. USAF	USAF	1054	1113	917	839	404	410	420	450
b. NAVY/MARINE CORPS	USN/USMC	348	306	210	300	400	436	444	431
c. Misc DOD	MISC DOD		49	121	60	20	25	30	35
TOTAL OTHER DOD		1402	1468	1248	1199	824	871	894	916
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		14852	18206	11439	9690	10033	10290	10266	9301

SENSITIVE/CLOSE HOLD

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	24	0	0	0	0	0	0
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	0	0	0	0
Subtotal RDTE		0	117	411	371	312	314	244	223
b. PROCUREMENT									
MISCELLANEOUS PROCUREMENT	Various	0	0	0	0	410	514	611	683
Subtotal PROCUREMENT		0	0	0	0	410	514	611	683
c. OMA and Other Army									
MICOM	OMA	0	0	8	0	0	0	0	0
FT POLK	OMA	0	95	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	0	0	0	200	200	200	200
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
Subtotal OMA and Other Army		1911	886	112	166	300	300	300	300
TOTAL PARENT SERVICE		1911	1003	523	537	1022	1128	1155	1206
2. Other DOD									
b. NAVY/MARINE CORPS	USN/USMC		11	41	0	36	38	38	40
TOTAL OTHER DOD		0	11	41	0	36	38	38	40
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		1911	1157	12366	9537	7996	6288	5856	5640

SENSITIVE/CLOSE HOLD

24-May-94

FY92 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	TOTAL WORKYEARS
ENVIRONMENTAL TEST FACILITY	0.4	0.2	0.0	3.8	0.0	4.3
INSTRUMENTED TEST RANGE	59.9	16.5	1.6	50.8	2.2	125.0
RANGE OPERATIONS	3.0	1.1	0.2	2.7	0.1	7.1
EMI/TEMPEST TEST FACILITY	0.4	1.3	0.0	6.3	1.9	9.9
IEW TEST DIVISION	0.0	13.1	0.0	2.7	0.0	15.8
ELECTROMAGNETIC ENVIR TEST FAC	1.7	4.7	0.0	43.5	13.7	63.5
AVIONICS/GPS TEST FACILITY	1.3	0.0	0.0	4.7	0.0	6.0
	66.6	30.9	1.8	114.4	17.8	231.6
EPG CAPABILITY	44.4	47.1	1.2	242.6	15.2	350.4
TOTAL	111.0	78.0	3.0	357.0	33.0	582.0

FY93 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	
ENVIRONMENTAL TEST FACILITY	0.7	1.0	0.0	7.8	0.0	9.5
INSTRUMENTED TEST RANGE	14.3	31.3	0.9	45.6	0.6	92.6
RANGE OPERATIONS	1.8	1.6	0.0	2.7	0.1	6.2
EMI/TEMPEST TEST FACILITY	0.2	1.5	0.0	4.7	1.1	7.6
IEW TEST DIVISION	0.0	9.9	0.0	0.6	0.0	10.5
ELECTROMAGNETIC ENVIR TEST FAC	0.1	8.7	0.0	23.8	25.4	58.0
AVIONICS/GPS TEST FACILITY	0.8	0.0	0.0	7.8	0.0	8.7
	17.9	54.1	0.9	92.9	27.2	193.0
EPG CAPABILITY	3.1	17.9	2.1	302.1	14.8	339.0
TOTAL	21.0	72.0	3.0	395.0	42.0	532.0

SENSITIVE/CLOSE HOLD

Document Separator

White Sands Missile Range
BRAC 95 R&D Data Call #7
(US Army Electronic Proving Ground)

PART V-6: Data Submission

R&D FACILITY / CAPABILITY TITLE:

INTELLIGENCE & ELECTRONIC WARFARE

SECTION 1: GUIDANCE, STANDARDS & ASSUMPTIONS

This section not provided. Please refer to the original guidance and data call for this information.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

2.1 WORKLOAD

2.1.A Historical Workload

2.1.A.1 Use the Historical Workload Form (FORM5-0 and FORM5-1). See enclosure 1.

2.1.B Forecasted Workload

2.1.B.1 Identify all appropriations (by program element) that generated testing or test support requirement, or are expected to generate such a requirement for FY92, FY93, and each year of the FY95 FYDP. See enclosure 2, pages 1 to 14; data are provided as (1) USAEPG rollup and (2) five functional areas.

2.1.B.2 Provide the amount of test work performed at your facility in FY92 and FY93. Break this out by workyears across the functional descriptors. See enclosure 2, page 15.

2.2 UNCONSTRAINED CAPACITY

2.2.A Use the Unconstrained Capacity Form (FORM6). See enclosure 1.

2.2.B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

Capacity is limited by availability of support services.

2.3 TECHNICAL RESOURCES

2.3.A Does the facility have a specified war-time or contingency role established in approved war plans?

No.

2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

USAEPG would lose a major portion of their ability to perform its T&E mission to support materiel acquisition and fielding decisions.

2.3.B.1 On the test mission of any other activity?

USAEPG provides test support to all PMs, PEOs, and independent technical evaluations of electronic system on subsystems. Their mission would be degraded to the extent that test results and analysis would no longer be available to support acquisition and fielding decisions.

2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

As the prime tester of tactical equipment, USAEPG has an impact on the operational effectiveness of the Armed Forces.

SECTION 3: MEASURES OF MERIT

3.1 OVER-ARCHING MEASURES OF MERIT

3.1.A **Interconnectivity**

3.1.A.1 What percentage of the total test workload of this facility in FY93 involved the real-time or near real-time exchange of data or control with another facility? List the facilities you interconnect to for tests and identify how many are simultaneous activities. Identify these as to whether they are internal or external to the site.

None.

3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected. If yes, explain.

None.

3.1.B **Facility Condition**

3.1.B.1 Use the Facility Condition Form (FORM4). See enclosure 1.

3.1.C **Environmental and Encroachment Carrying Capacity**

3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility? If yes, explain.

No. Of the one-thousand, one-hundred and seventy-two (1,172) surveyed test sites that EPG has, only three (3) test sites are declared restricted use for daytime operations due to bat-related restriction periods from July 1 through September 30 of each year. The restricted use test sites are East 1 and 2, and West 1. During this time-frame, the lesser long-nosed (Leptonycteris curasoae yerbaabuenae) bats migrate to these particular sites to feed on the nectar from the flowers of the dense Agave stands. West 1 is restricted because of the proximity to a roosting site. This restriction is considered minor impact to testing.

3.1.C.2 How much could workload be increased before this limit would be reached? Express you answer as a percentage of your current workload.

Workload can be increased to 100 percent local testing in Fort Huachuca. Our estimate is based on communications-electronic, unmanned aerial vehicle (UAV), and laboratory type (e.g. computer simulation, environmental, and reliability) testing. As an example, abatement procedures are in place for night testing/operations of UAVs during July 1 to September 30.

3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire, and describe them.

Yes. There are two voluntary agreements. These are with:

(1) The U.S. Fish and Wildlife Service to protect roost sites and forage habitat for the lessor long-nosed bat. There is no expiration date for this agreement.

(2) The Arizona Archeological Society to perform investigation/archeological studies conducted by surveys, excavations and mitigation of possible historical and/or archeological importance. There is no expiration date for this agreement.

3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

a. State population was considered and not international population. Due to the location of Fort Huachuca, if we take a 50 miles radius, with Fort Huachuca being the center of the circumference, the southern-most portion of the circumference falls into international lines (Republic of Mexico).

b. The total population within a 50 miles radius is 97,624. The 50 miles radius encompasses the counties of Cochise, portions of Pima, and Santa Cruz.

3.1.C **Environmental and Encroachment Carrying Capacity**

3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility? If yes, explain.

No. Of the one-thousand, one-hundred and seventy-two (1,172) surveyed test sites that EPG has, only three (3) test sites are declared restricted use for daytime operations due to bat-related restriction periods from July 1 through September 30 of each year. The restricted use test sites are East 1 and 2, and West 1. During this time-frame, the lesser long-nosed (Leptonycteris curasoae yerbaabuenae) bats migrate to these particular sites to feed on the nectar from the flowers of the dense Agave stands. West 1 is restricted because of the proximity to a roosting site. This restriction is considered minor impact to testing.

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3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

a. State population was considered and not international population. Due to the location of Fort Huachuca, if we take a 50 miles radius, with Fort Huachuca being the center of the circumference, the southern-most portion of the circumference falls into international lines (Republic of Mexico).

b. The total population within a 50 miles radius is 97,624. The 50 miles radius encompasses the counties of Cochise, portions of Pima, and Santa Cruz.

c. The total population within a 100 miles radius is approximately 577,500. The 100 miles radius encompasses the counties of Cochise and portions of Pima, and Santa Cruz.

d. The total population within a 150 miles radius is 820,734. The 150 miles radius encompasses the counties of Cochise and Pima, Graham, and, Pinal.

e. The total population within a 200 miles radius is 2,942,835. The 200 miles radius encompasses the counties of Cochise, Santa Cruz, Pima, Graham, Pinal, Gila, and portions of Maricopa.

f. Cochise County consists of the following populated areas: Benson, Bisbee, Bowie, Cochise, Douglas, Dragoon, Elfrida, Hereford, Huachuca City, McNiel, Naco, Pearce, Pirtleville, Pomerene, Saint David, San Simon, Sierra Vista, Tombstone, and Willcox. Fort Huachuca was annexed by Sierra Vista in 1971.

g. Graham County consists of the following populated areas: Bylas, Central, Fort Thomas, Pima, Safford, Soloman, and Thatcher.

h. Maricopa County (only those that fell into the radius of consideration) consists of the following populated areas: Arlington, Avondale, Buckeye, Cashion, Chandler, El Mirage, Gila Bend, Gilbert, Glendale, Mesa, Phoenix, Scottsdale, and Tempe.

i. Pima County consists of the following populated areas: Ajo, Arivaca, Cortaro, Green Valley, Lukeville, Marana, Mount Lemon, Rillito, Sahuarito, Sasabe, Sells, Topawa, and Tucson.

j. Pinal County consists of Casa Grande, Coolidge, Eloy, Florence, Kearny, Mammoth, Maricopa, Oracle, Picacho, Red Rock,
Sacaton, San Manuel, Stanfield, Superior, and Valley Farms.

k. Santa Cruz County consists of the following populated areas: Elgin, Nogales, Patagonia, Sonoita, and Tumacacori.

3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and the frequency of use for each that affect of could affect mission accomplishment in your air, land, or sea space.

a. Commercial air travel is available from Fort Huachuca to Phoenix.

b. Arizona Highway 90 feeds Fort Huachuca from the north, where it originates from Interstate 10, 30 miles away. This is the major route leading into the reservation.

c. Arizona Highway 92 originates at the Fort Huachuca east gate and proceeds east and then south around the northern and eastern boundaries of the City of Sierra Vista.

SENSITIVE/CLOSE HOLD

Errata Sheet # 4 of 10

1. This Errata Sheet applies to the following EPG R&D Faciilty/Capability Data Submissions:

Range Operations Capabilities
Environmental Test Facility
Instrumented Test Range
Electromagnetic Environmental Test Facility
EMI/TEMPEST Test Capabilities
Intelligence & Electronic Warfare
Avionics/ Global Positioning System
General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.1.d.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

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c. Black Tower Complex. The Black Tower Complex is dedicated for the use of all UAV testing and training on Fort Huachuca. This complex is composed of 3 hangars, parachute tower, hazardous material storage facility, explosive storage bunker, 2 runways (1 *dirt runway 220' x 2000' (as of Jul 94),* and a paved runway, 75' x 3000'). In addition, the following are available to UAV testing: frequency coordination, precision tracking, area surveillance, real-time and post-test digital data, communications and timing, photographic and video support, optical/infrared targets, and radar/communications threat environment.

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.
several sections skipped
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3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes. explain.

a. Yes. The platform is being completely rebuilt and should increase its capacity. The west turntable will be going through a major rehabilitation.

b. *The UAV dirt runway expansion to 2,000 feet will be complete in July of 1994.*

d. Fry Boulevard, the main street of Sierra Vista, originates at the Fort Huachuca main gate and proceeds due east through the heart of the city.

e. Buffalo Soldier Trail also originates at the Fort Huachuca main gate, proceeds south and then east around the southern boundary of the city.

f. Garden Avenue runs north and south and connects Fort Huachuca's main and east gates.

g. A dirt road originates at Fort Huachuca's west gate and proceeds west into the Coronado National Forest.

h. the commercial use of Restricted Areas R-2303A and R-2303B has negligible impact on the testing that EPG conducts. The ingress/egress of commercial traffic to Sierra Vista Airport is deconflicted by coordination with Libby Tower.

3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

None.

3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

None.

3.1.D Specialized Test Support Facilities and Targets

see prev page

3.1.D.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

Our IEW test capabilities are exercized through Range Operations, Instrumented Test Range, Electromagnetic Environmental Test Facility, and the EMI/TEMPEST Facility reported in Part V-1 and V-2 through V-5 of this report.

3.1.D.2 Are specialized targets required to support this facility, If yes, explain.

Specialized targets are reported under our Instrumented Test Range and EMETF capabilities (see Part V-3 and V-4).

3.1.D.2.A Have the specialized targets been validated? If yes, by whom?

Validations are reported in Part V-3 (Instrumented Test Range) and Part V-4 (Electromagnetic Environmental Test Facility) sections of this report.

3.1.E **Expandability**

3.1.E.1 Other than the expandability inherent in the unconstrained capacity (FORM 6) discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? If yes, explain.

No.

3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? If yes, identify by T&E functional area and test type.

No.

3.1.E.2 Are the airspace, land, and water areas adjacent to areas under DoD control available and/or suitable for physical expansion to support new missions or increased footprints. If yes, explain.

Generally, surrounding non-DoD properties are either privately owned, National Forest, Park Service, or Bureau of Land Management managed. Use of some of these lands can be negotiated for certain types of tests.

3.1.E.3 Is the facility equipped to support secure operations. If yes, to what level of Classification (Cofidential -> Special Access)?

Yes, up to and including SAR.

See page prev 3.1.D.1

3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes, explain.

No.

3.1.F **Uniqueness**

3.1.F.1 Is this a one-of-a-kind facility within the DoD? If yes, explain.

Yes. USAEPG is the only U.S. and DoD Test Range with a federally mandated spectrum assignment and operational coordination requirement within a 24 kilometer radius of the post as described in the National Telecommunications & Information Administration manual. In addition the geography/topology around Fort Huachuca provides a natural barrier to electromagnetic contamination from outside sources and confines generated electromagnetic energy. USAEPG is able to utilize the spectrum from 9 KHz to 400 GHz with few emission power restrictions and with contiguous spectrum available for realistic rigorous EMV/EMC/susceptibility testing. The natural geologic shielding mentioned before and shown on the picture allows emissions testing of high output levels; this feature is irreplaceable and can only be partially duplicated through high dollar construction of shielded test facilities. The SLF is the only known T&E DoD HITL facility which can provide a

simultaneous dense environment of communication and non-communication threat emitters to a system under test.

3.1.F.1.A Within the U.S. Government? If yes, explain

Yes. See 3.1.F.1 above.

3.1.F.1.B Within the U.S? If yes, explain.

Yes. See 3.1.F.1 above.

3.1.F.2 Are you currently providing support to DoD users outside your Military Department? If yes, indicate the percentage of total workload in FY92 and FY93 by Military Department.

No.

3.1.G **Available Air, Land, and Sea Space**

3.1.G.1 How many square miles of air, land, and sea space are available to support test operations?

On the reservation, 122 square miles (78,000 acres) of real estate are available to support testing. An additional 45 square miles (29,000 acres) of land are leased from federal, state, and local agencies throughout southern Arizona, from the New Mexico to California state lines. Also available on an as-needed basis are 39,000 square miles (25 million acres) of land obtainable from the Bureau of Land Management (BLM) through negotiation and a Memorandum of Agreement. In addition to the local airspace, 891.5 square miles, Military Operations Areas to the west have been used in the past to support tests. Use of these areas, in excess of 1,800 square miles, require coordination with several other agencies.

3.1.G.2 Who owns or controls the land under the Restricted Airspace yo use?

The Ft. Huachuca military reservation is comprised of 122 square miles (78,000 acres) of real estate. The remaining real estate available to support testing is leased from federal, state, and local agencies.

3.1.G.3 How much of this (total air space available to support operations) is Restricted Airspace, and what altitude limits are associated with the restricted areas?

The restricted area R-2303A, 261.9 square miles, is within the boundaries of R-2303B which is 891.5 square miles. R-2303A altitude limits are surface to 15,000 ft MSL and R-2303B is 15,000 to 45,000 ft MSL.

3.1.G.4 Do you have special use airspace other than supersonic airspace? If yes, for what types of tests? What are its dimensions? Will it support simultaneous users?

Yes. Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.1.G.5 Is the airspace over land or water. List the number of square miles over each.

All over land -- 891.5 square miles.

3.1.G.6 Identify known or projected airspace problems that may prevent accomplishing your mission.

No known or projected problems.

3.1.G.7 What is the maximum straight line segment in your airspace in nautical miles?

52.6 nautical miles.

3.1.G.8 What public airspace have you used for overflight of weapons systems in the past? What was the nature of those tests? Do you anticipate being able to use that same public airspace for similar tests in the future? Yes or no to each.

Two public airspace corridors, V-393 and V-395 between Tucson and Nogales, AZ, have been used in the past. The Unmanned Aerial Vehicle Short Range crossed those corridors and operated in the MOAs to the west during the maximum range test. Yes.

3.1.H **Geographic/Climitalogical Features**

3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap of the earth). Identify all of the following that apply: mountains, forest, jungle, cultivated lowland, swamp, riverine, desert, and sea. State the area of each in square miles.

a. The Fort Huachuca military reservation is geographically located in the inter-mountain desert plateau region between the souther most extent of the Rocky mountains and the northern most extent of the Sierra Madres. The area of land is covered by the installation is 115 square miles. The elevation varies from 3,925 feet to 7,709 feet above sea level wit 30 percent of the area located in rugged mountainous terrain. The remaining terrain is typified by rolling hills gradually flattening away from the mountains. Vegetation in the area is lower elevations. Above 5,000 feet Black Oak and Juniper are common and above 6,500 feet yellow pine is predominate.

b. The word "Huachuca" means "Place that Thunders" and from June to September, Fort Huachuca lives up to its name, 85 to 99 percent of the annual lightening activity occurs during this time. Activity can range from isolated mountain thundershowers to powerful Mesoscale Convective Complexes. Thunderstorms are DANGEROUS, due to the potential

for lightning strikes, range and forest fires, strong winds, hail, heavy precipitation and flash flooding.

c. Precipitation in the area varies dramatically from season to season and from year to year. The average annual precipitation from 1956 to present is 14.91 inches. Measurable precipitation can occur during every month of the year, but is most likely to occur in July and August. Fifty to 75 percent of the annual precipitation recorded typically falls during these two months. From November to late April, depending on the temperature, snow showers can occur with accumulations frequent above 5,000 feet.

d. Wind direction and speed are greatly influenced by seasonal, diurnal and orographic effects. Typically winds in the morning are from the southeast at 5 to 10 knots shifting to the southwest at 8 to 16 with occasional gusts to 24 knots. During the fall, winter, and spring strong wind events with winds from the south to southwest at 20 to 30 with gusts in excess of 50 knots and a duration of several hours to several days can occur 10 to 25 percent of the time. During the summer strong down burst winds associated with the thunderstorms with instantaneous gusts in excess of 60 knots can occur with little warning.

e. Temperatures in the local area are moderate with the extremes ranging from a high of 107 to a low of 9 degrees. Average summertime temperatures range from highs in the upper eighties to lows in the mid-sixties. Average wintertime temperatures range from highs in the low sixties to lows in the mid thirties. The average temperature for the year is 62 degrees.

f. Fort Huachuca is an excellent location for a wide variety of test activities with environmental considerations. Most of the moderate to severe weather conditions discussed above are of relatively short duration, and with proper planning, mission delays can be held to a minimum all year round.

3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of tests?

No.

3.1.H.3 Do you have to go to other geographical locations to satisfy test requirements? If yes, explain. If yes, provide as a percent of overall workload per year for the last 8 years.

No.

3.1.H.4 Number of days per year with average temperature below 32 degrees F? Between 32 and 95 degrees F? Above 95 degrees F?

All 365 days in an average year have a daily average temperature between 32 and 95 degrees fahrenheit. During the entire 35 year period covered by our climatological database, approximately 10 days had daily averages below 32 degrees which equates to one such day every 3-4 years. The highest daily average temperature during the same period has been 90

degrees which occurs only once or twice each year. The hottest weather at this location is accompanied by low relative humidity which results in good night times cooling after a hot day.

3.1.H.5. Number of days per year with average relative humidity below 30%? Between 30 and 80%? Above 80%

The average number of days per year with an average relative humidity below 30% is 150. Humidity can occasionally fall below 10% during these days. An average of 194 days per year have average relative humidities between 30% and 80%. Finally, 21 days per year, on average, have an average relative humidity above 80%.

3.1.H.6 Number of test missions per year (85 - 93) canceled due to weather?

Not applicable.

3.1.H.7 Number of test days per year (85 - 93) canceled due to weather?

Not applicable.

3.1.H.8 Number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

Based upon the 35 year climatological database, there are no full 24 hour periods during which the visibility drops below 3 miles. Restricted visibility occurs most often during periods of showery types of precipitation which occur primarily during the winter and summer rainy seasons. Occurrences of fog occur primarily during the winter and are of short duration. Based upon climatology, 2.3% or 197.6 hours has visibility below 3 miles in an average year. This equates to a total of 8.2 days. Visibility of 1-3 miles occurs, on average, a total of 109.6 hours while visibility less than one mile occurs a total of 88.1 hours a year or about 1% of the time on average. December is the month with the highest number of occurrences with 29.8 hours with visibility of 1-3 miles and 14.9 hours with visibility below 1 mile on average. Visibility below 3 miles has never been reported in June.

3.1.H.9 What is the average number of flying days available per year for flight tests? Provide historical average from the past eight years.

The average number of flying days available per year based solely upon weather conditions during the period of review is 353. This equates to 96.7% of all days in a year being available. The primary weather condition that may make a day unavailable is strong wind since all other adverse weather conditions are intermittent in nature.

3.1.H.10 What percentage of the time are your test operations restricted due to weather?

Not applicable.

SENSITIVE/CLOSE HOLD

Errata Sheet # 5 of 10

1. This Errata Sheet applies to the following EPG R&D Facility/Capability Data Submission:

   Range Operations Capabilities
   Environmental Test Facility
   Instrumented Test Range
   Enectromagnetic Environmental Test Facility
   EMI/TEMPEST Test Capabilities
   Intelligence & Electronic Warfare
   Avionics/Global Positioning Systems
   General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.2.A.6 What is the maximum number of simultaneous users?

Number of simultaneous users is limited by USAF or other military department rules on supersonic flight in restricted corridors. No specific limitation on the number of simultaneous users is available to EPG.

3.2.B **Airfield and Facility Characteristics**

3.2.B.1 Provide a brief description of your airfield and support facilities.

Libby Army Airfield is a Joint Use Airfield *owned by Ft. Huachuca (TRADOC)* and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be all concrete when completed (FY95) and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and belongs to Ft. Huachuca.

3.2 AIR VEHICLES

3.2.A Supersonic Airspace see prev page

Not applicable.

3.2.B Airfield and Facility Characteristics

3.2.B.1 Provide a brief description of your airfield and support facilities. see prev page

Libby Army Airfield is a Joint Use Airfield and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be al concrete when completed and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and does not belong to the Proving Ground.

3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

Hubbard assault strip is 5 miles from Libby and could be used for an emergency landing.

3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

Libby Field is situated within R-2303B.

3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

Libby Field is unique because of length, position relative to the restricted airspace and the weather found in southern Arizona.

3.2.B.5 Is there a size, weight, maintenance, or mission limitation that would affect test operations? If yes, describe.

No.

3.2.B.6 Including hangers an ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise Missiles?

Excluding hangars, enough ramp area exists to support approximately 20 fighter size aircraft 10 multi-engine aircraft or 25 rotary wing aircraft.

3.2.C. **Test Operations**

3.2.C.1 What types of air vehicle testing can be supported? Describe?

Unmanned Air Vehicles, Space Shuttle, SR-71, Rotary Wing, and some Fixed Wing.

3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

Yes.

3.2.C.3 What kinds, numbers of aircraft and mix of same can be supported (manned and unmanned)?

Any type of unmanned vehicle can be supported. Currently, only the aircraft listed in 3.2.C.8 below can be supported.

3.2.C.4 Does UAV and or rotary wing operations pose any limitations on other types of missions? If yes, explain.

No.

3.2.C.5 What sorts of missions can be flown within local airspace?

Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

Not applicable.

3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

Not applicable.

3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

Five each OV-1D, two each UH-1, three each EH-60, four each C-12 aircraft are owned by the Intelligence Center and Fort Huachuca, two each UH-1 and two O-2A aircraft are owned by USAEPG. Four each C-12 aircraft are owned by CASSO.

3.3 ELECTRONIC COMBAT

3.3.A Threat Environment

3.3.A.1 What is the number of threats simulated?

3.3.A.1 What is the number of threats simulated?

a. USAEPG's in-house capabilities include both simulated and actual threat equipments. In addition, we employ both actual threat equipment and simulators from outside resources to conduct our test programs. The outside test activities will provide detailed responses on their threat capabilities and we expect them to list USAEPG as a customer of their resources. Following are the numbers of threats simulated by in-house and external resources; as well as the numbers of actual threat equipments employed both from in-house and other test activities.

b. Number of simulated threats: 197.

(1) EMETF: 159.

(a) MODELING & SIMULATION CAPABILITY: At present, the Modeling & Simulation Capability has two simulated threat forces modeled. These threat models are contained in a Simulated Tactical Deployment (STD). A STD is a computerized representation of the C-E operators and equipment of a tactically deployed military force (usually a corps) and is based on a US Army Training and Doctrine Command (TRADOC) combat scenario. The STD is a primary element in conducting assessments of the anticipated performance of US Army Communications-Electronic (C-E) equipment in their intended operational environments. To accomplish its electromagnetic compatibility and electromagnetic vulnerability (EMC/EMV) performance evaluation mission in a cost-effective manner, USAEPG builds large-scale STD's of US Army tactical battlefields, and has various STD's on hand. An STD contains:

1 Detailed geographical locations and technical descriptions for all C-E equipment supporting the tactical combat force described in the scenario.

2 The total tactical laydown of both friendly and enemy forces.

3 The equipment technical performance characteristics, netting, frequency assignments, and unit combat postures defined by the scenario.

4 Enemy signals intelligence/electronic warfare (SIGINT/EW) assets are specifically located and targeted in accordance with an Army-approved threat for the time frame being simulated.

(b) HARDWARE-IN-THE-LOOP CAPABILITY: The SLF currently has a library of 113 non-communications emitters and 40 communications emitters.

(c) MEASUREMENT CAPABILITY: We presently have 6 palletized jammers that can be operated in ground or airborne modes.

(2) Emitter Vans (ITR): 19. The emitter vans are normally equipped with RF-280 radios which are surrogate threat equipments for a number of threat communications radios. They can also be used with signal generators, power amplifiers, and other source equipments to provide additional signal sources.

(3) IR false target - 1 IR simulators.

(4) Outside simulated threat resources employed in USAEPG testing - 25.

(a) Eglin AFB - 4 IR & 1 Radar simulators.

(b) China Lake - 10 Radar simulators.

(c) Operational Test Support Activity (OTSA) - 3 Radar simulators.

c. Number of actual threat emitters: 155.

(1) Threat radios (ITR) - 115 total in inventory (operational condition of some remains unknown at this time).

(2) Outside threat resources employed in USAEPG testing - 34.

(a) OTSA - 4 Radar.

(b) WSMR - 10 IR.

(c) Elgin AFB - 2 IR.

(4) Holloman AFB - 20 IR.

(5) China Lake - 4 Radar.

3.3.A.2 How many simultaneous threats can be simulated? What type? What is the maximum signal density? Average density? Power level? What band? Radiated or injected?

a. MODELING & SIMULATION CAPABILITY:

(1) We have the capability to model any number of simultaneous threats in our STD's and computer models. The current STD's used for operational tasks are the Europe VI STD and Southwest Asia 4 (SWA-4) STD.

(2) The Europe VI STD is based on a TRADOC scenario depicting mid-intensity conflict in Central Europe in 1992. The Europe VI STD contains the tactical disposition of C-E systems of a US Army corps organized as an element of the southern Army Group (SOUTHAG) in Western Europe. A US tactical air force is included in the STD. The enemy forces opposing the US corps are two armies and an appropriate slice from two Fronts.

(3) The Southwest Asia 4 STD is based on a TRADOC scenario depicting midintensity conflict in southwest Asia in 1994. The STD contains the tactical disposition of C-E systems of a US Army corps organized in three divisions, without Air Force support. The enemy forces opposing the US corps are a provisional Iraqi army organized into two corps. SWA-4 was finished in 1993 and is currently used for operational tasks.

b. HARDWARE-IN-THE-LOOP CAPABILITY:

Type: Up to 1023 simultaneous non-communications threat emitters and 32 simultaneous communications threat emitters.

c. MEASUREMENT CAPABILITY: We can simulate up to 6 simultaneous jamming threats with the equipment we have at present. The types of jamming signals we generate are usually associated with communications networks. The maximum signal density is six distinct jamming signals, one each from each of our 6 jamming platforms.

d. OPEN AIR RANGE: Testing can theoretically accommodate an infinite number of simultaneous threat signals. Practically it is limited by: the total number of appropriate type threat simulator/emitter that can be obtained for the test window; restrictions, if any, on free space transmission of the threat signals; and specific deployment/sitting requirements for the test program. The number of simultaneous threats employed depends on many variables, including: the specific range area, deployment, or facility used; the system capabilities being assessed; and the objectives of the testing program. In technical testing, each threat is normally tested individually first, to ensure that the item under test recognizes the threat and responds properly. The second step is generally to assess the items performance capabilities in increasingly dense threat environments. This approach is employed in both ground based and airborne IEW equipment, as well as with Aviation Electronic Combat equipment. The preferred methodology is to employ the SLF to assess response to individual threats in a closed loop or short range proximity configuration. After

establishing the baseline, the item is then subjected to specific sets of threats under progressively increasing signal densities. A final step can also be included. It consists of conducting simulated tactical missions under near realistic conditions (pseudo operational testing) for further confirmation of the test results.

What type (e.g. AI, AAA, SAM)?

a. EMETF: The types of threats simulated are mostly threats to communications systems, i.e., both ground and air based jamming platforms, although there are some enemy Direction Finding (DF) and intelligence gathering sensors modeled as well.
The hardware in the loop produces both non-communications threats and communications threats.

b. Open Air Range: Threats simulated include a wide range of tactical ground radio and radar, as well as, AAA, and SAM.

What is the maximum signal density?

a. EMETF:

(1) Non-communications emitters: 4 Megapulses/sec.

(2) Communications Emitters: 32 Emitters/sec.

b. Open Air range testing signal density is usually a function of the availability of appropriate assets for each specific application and generally is determined as a result of cost-value trade off. Theoretically there is no maximum that can be accommodated.

Average density?

a. EMETF: The density of enemy jamming, DF, and intelligence gathering assets is determined by the US Army Training and Doctrine Command (TRADOC) combat scenario for a tactically deployed military force. The average density is normally a function of the scenario or testing procedure for each specific task and is adjustable to meet testing needs.

b. Open Air Range testing is capable of virtually any average density needed for each specific test program.

What power level? What band?

a. EMETF:

(1) The power levels and frequency parameters associated with enemy jamming assets is determined by the US Army Training and Doctrine Command (TRADOC) combat scenario for a tactically deployed military force.

(a) Non-communications emitters:

Injected:	-80 to +10 dBm
Radiated:	-70 to +20 dBm

(b) Communications emitters: -130 to +13 dBm

(2) We can simulate RF communications emitters in the 500 kHz to 500 MHz frequency band and non-communications emitters in the 500 MHz to 18 GHz frequency band.

(3) Power levels for our jammers range from effective radiated powers of about 250 watts to over 15,000 watts. The frequency bands into which we can inject jamming signals range from about 30 MHz to about 15 GHz.

b. Open Air Range testing can accommodate threat signal of almost any frequency and power. We coordinate closely with the area frequency coordinator and develop alternatives for sitting, hours of operation, and other factors to achieve non-interference testing. The only exception is when the frequency or power requirements are inflexible and are incompatible with another authorized user, such as air traffic control.

Radiated or injected?

a. EMETF:

(1) In the computer models, all simulated threats are assumed to be radiated.

(2) Hardware in the loop normal mode of operation is to inject the RF signals into the system under test's antenna.

b. Open Air Range: All signals are radiated.

3.3.A.3 Are the threat software models and simulators validated? If yes, by whom?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY:

(a) Yes. The primary source of data is the Initial Network (INNET) working group. This group was established to assist FSTC in identifying and assessing the accuracy of data to be inserted into the data base. This working group is composed of the following organizations: FSTC, DIA, DCSINT, MSIC ITAC, and FTD.

(b) The enemy deployment is developed by using a task organization derived from the INNET Handbook which was written and published by USAEPG for the FSTC. The types and numbers of radio frequency (RF) equipment are obtained from the

DIA and Army-validated INNET data base which is maintained at the USAEPG for FSTC.

(c) The INNET data base is developed from organizational drawings reflecting vehicles, RF components, and communications netting schematics provided by FSTC. The INNET data are converted to formats necessary for automatic computer processing at USAEPG and then are returned to FSTC for review to ensure that the resulting product accurately reflects the INNET working group intent and input. After FSTC validation, the material is forwarded to DA for approval and then to DIA for final validation.

(d) Because of the importance of producing credible vulnerability assessments of systems, special preparation and validation procedures are used for the SIGINT/EW portion of the STD. Initially, the System Threat Assessment Report (STAR) is reviewed for details of the specific threat to a system and/or to determine whether special targeting is required. The US Army Signal Center publishes the STAR for all communications systems. For non-communications systems (e.g., radars), the proponent center provides the STAR. To ensure proper representation of the SIGINT/EW forces in the STD, a complete and separate threat data base of threat SIGINT/ EW capabilities is maintained at USAEPG. Further, a special staff of EW analysts prepares that portion of the STD. All threat intercept, direction finding (DF), and jamming equipment is deployed in accordance with the STAR and threat doctrine, in the correct numbers, and with the proper technical characteristics.

(e) After initial deployment, and before use for any evaluations, approval of the threat laydown for intercept, DF, and jamming systems is obtained from appropriate authorities such as DCSINT DA, TRADOC, AMC, FSTC, and the US Army Signal Center. This process can take several forms, such as onsite visits, offsite briefings, teleconferencing, etc. This review and validation process culminates in a letter of validation from DCSINT validating the STD for use by USAEPG to conduct the required EMV/EMV analyses.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: The SLF threat emitters use software simulations to control the output of hardware.(i.e. signal generators) Our simulations are not validated; however, we are in the process of having our threat signals validated by TEMA.

b. Validation of outside simulator/threat resources employed is the responsibility of the owning activities who will report separately the details of their validations.

3.3.A.4 Do you conduct open loop testing? Reactive? Closed loop?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: No

(2) HARDWARE-IN-THE-LOOP CAPABILITY: Most of our tests are closed link (i.e. non-radiating) open loop tests. Our scenarios are scripted events and are

non-reactive. We do not have a closed loop capability.
MEASUREMENT CAPABILITY: Yes, we can conduct open loop testing, but not reactive or closed loop testing.

b. Open Air Range testing is virtually all open loop and may be reactive depending on the type of test and the threat or countermeasure being employed.

3.3.A.5 What is the threat representation (fidelity) and density?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY:

(a) We take special care to ensure that it has maximum validity and that it is based on the best and latest intelligence estimates. The types and numbers of radio frequency (RF) equipment are obtained from the DIA and Army-validated INNET data base which is maintained at the USAEPG for FSTC. The INNET data are converted to formats necessary for automatic computer processing at USAEPG and then are returned to FSTC for review to ensure that the resulting product accurately reflects the INNET working group intent and input. After FSTC validation, the material is forwarded to DA for approval and then to DIA for final validation. Because of the importance of producing credible vulnerability assessments of systems, special preparation and validation procedures are used for the SIGINT/EW portion of the STD. To ensure proper representation of the SIGINT/ EW forces in the STD, a complete and separate threat data base of threat SIGINT/ EW capabilities is maintained at USAEPG. Further, a special staff of EW analysts prepares that portion of the STD. All threat intercept, direction finding (DF), and jamming equipment is deployed in accordance with threat doctrine, in the correct numbers, and with the proper technical characteristics.

(b) After initial deployment, and before use for any evaluations, approval of the threat laydown for intercept, DF, and jamming systems is obtained from appropriate authorities such as DA/DCSINT, TRADOC, AMC, FSTC, and the US Army Signal Center. This review and validation process culminates in a letter of validation from DCSINT validating the STD for use by USAEPG to conduct the required EMV/EMV analyses.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: The SLF represents the RF signature of each threat emitter based on data in various intelligence data bases. The Non-communications Threat Simulator generates high fidelity threats with complex pri structures, intra and interpulse frequency, amplitude and modulations. Complex transmit and receive antenna patterns are also simulated. The Communications threat Simulator generates high fidelity signals with demodulatable baseband voice and data. We construct each signal to the fidelity desired by the customer.

(3) MEASUREMENT CAPABILITY: We are able to replicate both ground-based and heliborne enemy jamming assets.

b. Open air range threat representation varies depending upon the specific simulators and actual threat equipment employed in each test program. The simulators/treat hardware are mobile/transportable and not set-up in fixed configurations. When a test program employees only validated simulators and actual treat equipment, the threat representation closely approaches 100%. At times, surrogate emitters are also employed which can have less fidelity. How well they represent the threat is a function of both the threat and the surrogate emitters. The fidelity of their threat representation can only be determined on a case by case application basis. Likewise, the density of threat replication varies for individual test program since the requirements change and the emitters are moveable rather than fixed sites.

3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? If yes, describe.

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY:

(a) Land Threats: Yes. At present, the Modeling & Simulation Capability has two simulated threat forces modeled. These threat models are contained in a Simulated Tactical Deployment (STD). A STD is a computerized representation of the C-E operators and equipment of a tactically deployed military force (usually a corps) and is based on a US Army Training and Doctrine Command (TRADOC) combat scenario. The STD is a primary element in conducting assessments of the anticipated performance of US Army Communications-Electronic (C-E) equipment in their intended operational environments. To accomplish its electromagnetic compatibility and electromagnetic vulnerability (EMC/EMV) performance evaluation mission in a cost-effective manner, USAEPG builds large-scale STD's of US Army tactical battlefields, and has various STD's on hand.

(b) An STD contains:

1 Detailed geographical locations and technical descriptions for all C-E equipment supporting the tactical combat force described in the scenario.

2 The total tactical laydown of both friendly and enemy forces.

3 The equipment technical performance characteristics, netting, frequency assignments, and unit combat postures defined by the scenario.

4 Enemy signals intelligence/electronic warfare (SIGINT/EW) assets are specifically located and targeted in accordance with an Army-approved threat for the time frame being simulated.

Sea Threats: No

a. HARDWARE-IN-THE-LOOP CAPABILITY: Yes. The SLF represents the RF

signature of each threat emitter based on data in various intelligence data bases. We construct the signal to the fidelity desired by the customer.

b. MEASUREMENT CAPABILITY: We are capable of simulating land threats by using our ground-based jammer assets. Ideally, we could emulate some sea-based jammers if our jamming platforms were placed on ships, but we have never done this in the past.

c. Open Air Range testing can simulate land and airborne threats, but not sea threats or combined land and sea threats.

3.3.A.7 What geographic dispersion can be simulated?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: Usually our models and STD's are limited to an Army corps deployment, which is about 100 km wide by 150 km deep, and a corresponding threat forces deployment, which is also about 100 km wide by 150 km. deep. The total land area encompassed by a typical STD is about 100 km wide by 300 km deep.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: None.

(3) MEASUREMENT CAPABILITY: Our jamming platforms are usually deployed over a division area, which is about 50 km wide by 50 km deep. Above those distances, our jammers don't radiate enough power to maintain adequate levels of jamming signal in the test area.

b. Open air range testing geographic dispersion is actual physical deployment rather than simulation. Depending upon the type equipment and test scenario, the geographic dispersion can be determined by terrain, line-of-sight, and similar factors. USAEPG has more than 1200 surveyed sites available for use, both within the confines of Ft. Huachuca and in the surrounding southern Arizona area. USAEPG has access to other locations or facilities through out Arizona and the southwest, which can be employed for test programs.

3.3.A.7.A Threat lay down?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: The threat laydown is typically about one-half of the overall STD area. The threat laydown is therefore about 100 km wide by 150 km deep.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: Threat laydowns are scenario dependent. We develop test scenarios based on customer's requirements.

(3) MEASUREMENT CAPABILITY: Our jamming platforms are usually

deployed over a division area, which is about 50 km wide by 50 km deep. Above those distances, our jammers don't radiate enough power to maintain adequate levels of jamming signal in the test area.

b. Open air range deployments have been performed that replicate adjacent Brigades and a full Division front. USAEPG has a large number of available surveyed sites both on and off post. Ground deployment of the threat and the test items can be adjusted to obtain representative configurations of numerous different deployments. In the case of airborne equipments, tests have been conducted representing threats as deep as opposing CORPS/Army areas.

3.3.A.7.B Representative distance?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: Representative distances are determined by the particular type of threat equipment under consideration; however, all distances are contained in the threat area, which is about 100 km wide by 150 km deep.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: Range is limited by terrain blockage and over-the-horizon limits based on transmit and receive antenna heights.

(3) MEASUREMENT CAPABILITY: Our jamming platforms are usually deployed over a division area, which is about 50 km wide by 50 km deep. Above those distances, our jammers don't radiate enough power to maintain adequate levels of jamming signal in the test area.

b. Open air ranges deployments have been achieved for ground configurations of at least 30 Km in width with the threats ranging out to 30 Km in depth. In the case of airborne test items employed against ground threats, distances have been achieved in excess of 70 miles (115Km).

3.3.A.8 Are the threats moveable within a test scenario? Relocatable to a new scenario?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: Yes. We can simulate platform movement of emitters during scenario execution.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: Yes. We can simulate independent three dimensional movement of each platform containing emitters during scenario execution.

(3) MEASUREMENT CAPABILITY: Yes, our jamming platforms are designed to be carried by ground vehicles and helicopters.

b. Open air range tests can employ some threats in a mobile operating condition but generally do not do so. Most of the threats; however, are readily moveable and can easily be relocated physically. Their operation (transmit times, durations, modes, ets) are controllable and subject to change both during and between scenarios.

3.3.A.9 Is the facility interlinked with off-site threats? If yes, how are you linked?

No.

3.3.A.10 Is there a limit on simultaneous users? If no, explain.

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: No. Theoretically, the number of simultaneous users who could execute our computer models is infinite; however, practical limitations on computer resources (e.g., workstations, software licenses, etc.) impose a limit on the process.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: Yes. Depending on the test scenario, the SLF could conduct two simultaneous tests. One on the Non-communications threat simulator and one on the communications threat simulator. If both simulators were required to support the same test scenario, then only one test could be conducted.

(3) MEASUREMENT CAPABILITY: Yes, the limit on simultaneous users is 6.

b. Open Air Range testing theoretically has no limit on the number of simultaneous users since the threat signals are radiated and could be picked up and responded to by many users. Practically, each test scenario is tailored to a specific application and is not likely to be very useful to more than one test item/program.

3.3.B **Test Article Support**

3.3.B.1 Is there a size, weight, or other limitation on test operations the facility can support? If yes, explain and describe measures needed to remove them.

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: No. Computer simulations can accommodate any size threat platform.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: Yes. We can not support large fixed wing aircraft because the building in which the SLF is located does not have access to the airfield. There are no immediate plans to remove this restriction.

(3) MEASUREMENT CAPABILITY: Yes, the jamming platforms weigh about a ton and require a vehicle or airborne platform capable of carrying that much additional weight. We have miniaturized the jamming platforms to the maximum extent possible. To get them any more compact would require extraordinary amounts of very expensive, custom electronics components and an impractically large amount of funding.

b. EMI/TEMPEST Facility: Yes. We can not support fixed wing aircraft because the building in which the lab is located does not have access to the airfield. There is no immediate plans to remove this limitation.

c. Open air range has no specific limitations which can be applied all inclusively. A unique limitation can be encountered in special cases based on specific sitting or project requirements. Since each case is unique (e.g. 60 ton track vehicle transported to site on lowboy because it can not be driven) and accommodated in the best manner possible, there are no absolute limits. Measures are applied to remove any limitation on a case-by-case basis.

3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: Theoretically, the number of simultaneous countermeasures we could evaluate is infinite; however, practical limitations on computer execution speed and ability to analyze and interpret output data impose a limit on the process.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: We do not have the capability to evaluate interactive countermeasures.

(3) MEASUREMENT CAPABILITY: The number of simultaneous countermeasures possible for evaluation is six.

b. EMI/TEMPEST FACILITY: NA

c. Open air range testing is capable of accommodating the use of simultaneous countermeasures, depending on the types of countermeasures, environmental limitations, or other hazards involved. As with virtually all other open range testing, the ability to conduct such an evaluation is determined on a case by case basis and there is no absolute number which can be performed simultaneously. Instrumentation and the accuracy of the data required to properly assess effectiveness of multiple types of simultaneous countermeasures is extremely difficult to achieve. As a general rule, technical testing evaluates each countermeasure individually for it's effectiveness against a specific threat.

3.3.B.3 What range of spectra can be tested and evaluated?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: We can simulate, with varying degrees of accuracy inherent in different engineering models, any frequency from LF to optical.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: We can simulate RF communications emitters in the 500 kHz to 500 MHz frequency band and non-communications emitters in the 500 MHz to 18 GHz frequency band.

(3) MEASUREMENT CAPABILITY: We can simulate frequency ranges from 30 MHz to 15 GHz.

b. EMI/TEMPEST FACILITY:

(1) Emissions testing 20 Hz to 40 GHz.

(2) Radiated/susceptibility testing DC to 40 GHz.

c. Open air range testing can support testing of the complete electromagnetic spectrum. Limitations do exist in the range of currently available off-the-shelf instrumentation and with authorization for transmission of specific frequencies/bands which are designated for other applications. We are generally able to accommodate (via work arounds such as sitting, time of use, or power reductions) cases where test operations could cause interference with other users.

3.3.B.4 What are the available spectra?

a. EMETF:

(1) MODELING & SIMULATION Capability: We can simulate, with varying degrees of accuracy inherent in different engineering models, any frequency from LF to optical.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: We have unlimited spectrum availability with our operating frequency bands.

(3) MEASUREMENT CAPABILITY: Through close coordination with the DoD Area Frequency Coordinator located here at Fort Huachuca, we can usually obtain adequate frequency clearances in our jammer's range of operation to satisfy any test requirements.

b. EMI/TEMPEST FACILITY: Same as 3.3.B.3 above.

c. Open air range testing can support testing across the complete spectra, as discussed in 3.3.B.3.b above with the limitations and accommodations described.

3.3.B.5 Do you have a scene generation capability? If yes, describe.

No.

3.4 ARMAMENTS / WEAPONS

Our tests of armaments and weapons systems generally consist of antenna, performance, environmental, and EM tests of electronic systems. The information requested in this section does not apply.

GENERAL INFORMATION

FACILITY / CAPABILITY TITLE: Intelligence Electronic Warfare **ORIGIN DATE:** 23 May 1994

Service: A **Organization / Activity:** USA Electronic Proving Ground (USAEPG) **Location:** USAEPG, Ft Huachuca

T&E Functional Area: Electronic Combat UIC: WO4YAA

T&E Test Facility Category: N/A

	T&E	S&T	DE	NE	T&D	OTHER	
Percentage Use:	100%						= 100
Breakout by T&E Functional Area (%)							
Air Vehicles							
Armament / Weapons							
Electronic Combat	89.8%						
Other	10.2%						
	100.0%						

Note: Total in Breakout must equal "Percentage Use" line entry.

"FORM1" TAB: page:

TECHNICAL INFORMATION

FACILITY / CAPABILITY TITLE:

Facility Description; including mission statement: IEW Test Div is an organization of personnel (engineer, technicians, and support) experienced in technical testing procedures, technology, and methodology for evaluating IEW equipment & systems. It's mission is to plan, conduct, and report test of military intelligence collection, analysis, display, and distribution equipment/system: aviation electronic combat equipment/systems; electronic countermeasures-systems; and other electronic systems supporting the IEW mission area.

Interconnectivity / Multi-Use of T&E Facility: IEW Div has no specific or unique facility of it's own, but employs facilities of the EMETF Div, Range Support Div, and other locally available assets, as described herein. It also employs the resources/assets of outside test activities who will report their capabilities.

Type of Tests Supported: Technical tests of Battlefield air & ground sensors, intelligence analysis/processing systems, Aviation Electronic Combat, Electronic Countermeasures, and IEW support equipment.

Summary of Technical Capabilities: IEW Div has test & evaluation personnel with a wide range of IEW testing experience. They are abreast of new technologies, the latest test methodology, and recent changes in the intelligence doctrine. Their knowledge & experience makes them ideally suited to plan, conduct, and report testing of IEW systems.

Keywords:

"FORM2" **TAB:** **page:**

ADDITIONAL INFORMATION

FACILITY / CAPABILITY TITLE:

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	1	1	1	1	1	1	1
Enlisted	0	0	0	0	0	0	0
Civilian	0	14	14	13	12	12	11
Contractor	15	0	0	0	0	0	0
Total	16	15	15	14	13	13	12

Total Square Footage: N/A

Test Area Square Footage: N/A

Office Space Square Footage N/A

Tonnage of Equipment: Unkown

Volume of Equipment (cu.ft.): N/A

Annual Maintenance Cost: N/A

Estimated Moving Cost: Unknown

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99

"FORM3" TAB: page:

FACILITY CONDITION

FACILITY / CAPABILITY TITLE: IEW Test Div

AGE: N/A **REPLACEMENT VALUE:** Indeterminate

MAINTENANCE & REPAIR BACKLOG: N/A

DATE OF LAST UPGRADE: N/A

NATURE OF LAST UPGRADE: N/A

MAJOR UPGRADES PROGRAMMED

1. **UPGRADE TITLE:** N/A
   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. **UPGRADE TITLE:** N/A
   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

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HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE:

T&E FUNCT. AREA		FISCAL YEAR 86	87	88	89	90	91
AIR VEHICLES	DIRECT LABOR TEST HOURS MISSIONS						
ELECT. COMBAT	DIRECT LABOR TEST HOURS MISSIONS	33,762	32,396	27,156	43,089	14,233	22,111
ARMNT/WEAPONS	DIRECT LABOR TEST HOURS MISSIONS						
OTHER T&E	DIRECT LABOR TEST HOURS MISSIONS	4,551	6,405	8,101	757	329	3,438
OTHER	DIRECT LABOR TEST HOURS MISSIONS						

"FORM5-0" TAB: page:

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: IEW Test Div

T&E FUNCT. AREA		FISCAL YEAR 92	93	94	95	96	97
AIR VEHICLES	DIRECT LABOR						
	TEST HOURS						
	MISSIONS						
ELECT. COMBAT	DIRECT LABOR	22,818	17,218				
	TEST HOURS						
	MISSIONS						
ARMNT/WEAPONS	DIRECT LABOR	4,667	965	?	Other T&E	?	
	TEST HOURS						
	MISSIONS						
OTHER T&E	DIRECT LABOR						
	TEST HOURS						
	MISSIONS						
OTHER	DIRECT LABOR						
	TEST HOURS						
	MISSIONS						

"FORM5-1" TAB: page:

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

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DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY / CAPABILITY TITLE: IEW Test Div

ANNUAL HOURS OF DOWNTIME	1	N/A
AVERAGE DOWNTIME PER DAY (line 1 / 365)	2	N/A
AVERAGE HOURS AVAILABLE PER DAY (24 / line 2)	3	N/A

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7
		Total Sum	

UNCONSTRAINED CAPACITY PER DAY (line 3 * Total Sum)

8 _____

ANNUAL UNCONSTRAINED CAPACITY

9 N/A

"FORM6"

TAB: page:

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM HAWK	23801	0	86	0	0	90	90	90	90
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
UAV	35889	1883	0	0	0	50	50	50	50
PM RADAR	62120	0	9	0	0	25	25	25	25
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
PM UAV	62303	0	110	37	20	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
BRDEC	62785	0	7	0	5	15	15	15	15
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	73	0	0	0	0	0	0
MINE WARFARE	63619	398	0	0	0	0	0	0	0
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
FLD SPT ACT - FT HOOD	65712	0	3555	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	88	84	31	7
Subtotal RDTE		16397	11145	7557	5992	9340	9377	9304	8242
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8500	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
HAWK GSE	C28100	290	0	0	0	263	257	243	235
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PM AAH	112000	0	1	0	0	0	0	0	0
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
PM UAV	523200	0	19	122	322	263	257	243	234
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
OTHER PROCUREMENT	VARIOUS	0	0	9	20	430	569	654	717
Subtotal PROCUREMENT		3027	8862	5966	4996	2625	2827	2792	2833
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
MICOM	OMA	0	0	8	0	0	0	0	0
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
FT POLK	OMA	0	95	0	0	0	0	0	0
OTEA	OMA	0	25	0	0	0	0	0	0
TRADOC	OMA	0	279	443	220	200	200	200	200
Miscellaneous OMA	OMA	0	158	18	16	802	817	799	730
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		3589	3902	1672	1021	1652	1717	1749	1780
TOTAL PARENT SERVICE		23013	23909	15195	12009	13617	13921	13845	12855
2. Other DOD									
a. USAF	USAF	1054	1452	1064	1039	556	564	599	654
b. NAVY/MARINE CORPS	USN/USMC	348	1801	1559	1216	1204	1293	1302	1291
c. Misc DOD	MISC DOD	864	111	158	145	32	37	42	47
TOTAL OTHER DOD		2266	3364	2781	2400	1792	1894	1943	1992
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		25279	27416	29778	23409	22347	20937	20451	19241

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
UAV	35889	1883	0	0	0	50	50	50	50
PM UAV	62303	0	110	37	20	25	25	25	25
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	7	8	9	2
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
FLD SPT ACT - FT HOOD	65712	0	851	0	0		0	0	0
Subtotal RDTE		2219	976	38	20	82	83	84	77
b. PROCUREMENT									
PM AAH	112000	0	1	0	0	0	0	0	0
PM UAV	523200	0	19	122	322	263	257	243	234
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
Subtotal PROCUREMENT		0	136	149	355	263	257	243	234
c. OMA and Other Army									
TRADOC	OMA	0	279	443	220	200	200	200	200
Subtotal OMA and Other Army		0	279	443	220	200	200	200	200
TOTAL PARENT SERVICE		2219	1391	630	595	545	540	527	511
2. Other DOD									
a. USAF	USAF		339		200	134	135	160	184
b. NAVY/MARINE CORPS	USN/USMC		1471	1306	916	750	800	800	800

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
c. Misc DOD	MISC DOD	864	62	24	85	12	12	12	12
TOTAL OTHER DOD		864	1872	1330	1201	896	947	972	996
3. Other U.S. Government									
4. TOTAL DIRECT USER FUNDS		3083	3263	1960	1796	1441	1487	1499	1507

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
MICOM	63322	0	49	0	0	0	0	0	0
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
MISCELLANEOUS R&D	Various	0	0	0	0	9	0	8	0
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
Subtotal RDTE		4464	1713	1263	546	1559	1550	1558	1536
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
Subtotal PROCUREMENT		53	721	1758	1434	377	379	342	337
c. OMA and Other Army									
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	58	18	16	300	300	300	300
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
Subtotal OMA and Other Army		52	2257	830	406	550	550	550	550

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
TOTAL PARENT SERVICE		4569	4691	3851	2386	2486	2479	2450	2423
2. Other DOD									
a. USAF	USAF	0	0	147	0	18	19	19	20
b. NAVY/MARINE CORPS	USN/USMC	0	13	15	0	18	19	20	20
TOTAL OTHER DOD		0	13	162	0	36	38	39	40
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		4569	4704	4013	2386	2522	2517	2489	2463

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ARMAMENTS/WEAPONS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
PM HAWK	23801	0	86	0	0	90	90	90	90
MINE WARFARE	63619	398	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	2	8	8	5
MISSILE FIPS	63801	176	0	0	0	0	0	0	0
Subtotal RDTE		574	86	0	0	92	98	98	95
b. PROCUREMENT									
HAWK GSE	C28100	290	0	0	0	263	257	243	235
Subtotal PROCUREMENT		290	0	0	0	263	257	243	235
c. OMA and Other Army									
Subtotal OMA and Other Army		0	0	0	0	0	0	0	0
TOTAL PARENT SERVICE		864	86	0	0	355	355	341	330
2. Other DOD									
TOTAL OTHER DOD		0	0	0	0	0	0	0	0
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		864	86	0	0	355	355	341	330

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
I. PARENT SERVICE									
a. RDTE									
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
PM RADAR	62120	0	9	0	0	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
BRDEC	62785	0	7	0	5	15	15	15	15
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
MISCELLANEOUS R&D	Various	0	0	0	0	70	68	6	0
FLD SPT ACT - FT HOOD	65712	0	2704	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
Subtotal RDTE		9140	8253	5845	5055	7295	7332	7320	6311

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
b. PROCUREMENT									
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
OTHER PROCUREMENT	VARIOUS	0	0	9	20	20	55	43	34
Subtotal PROCUREMENT		2684	8005	4059	3207	1312	1420	1353	1344
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
OTEA	OMA	0	25	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	100	0	0	302	317	299	230
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		1626	480	287	229	602	667	699	730
TOTAL PARENT SERVICE		13450	16738	10191	8491	9209	9419	9372	8385
2. Other DOD									
a. USAF	USAF	1054	1113	917	839	404	410	420	450
b. NAVY/MARINE CORPS	USN/USMC	348	306	210	300	400	436	444	431
c. Misc DOD	MISC DOD		49	121	60	20	25	30	35
TOTAL OTHER DOD		1402	1468	1248	1199	824	871	894	916
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		14852	18206	11439	9690	10033	10290	10266	9301

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	24	0	0	0	0	0	0
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	0	0	0	0
Subtotal RDTE		0	117	411	371	312	314	244	223
b. PROCUREMENT									
MISCELLANEOUS PROCUREMENT	Various	0	0	0	0	410	514	611	683
Subtotal PROCUREMENT		0	0	0	0	410	514	611	683
c. OMA and Other Army									
MICOM	OMA	0	0	8	0	0	0	0	0
FT POLK	OMA	0	95	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	0	0	0	200	200	200	200
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
Subtotal OMA and Other Army		1911	886	112	166	300	300	300	300
TOTAL PARENT SERVICE		1911	1003	523	537	1022	1128	1155	1206
2. Other DOD									
b. NAVY/MARINE CORPS	USN/USMC		11	41	0	36	38	38	40
TOTAL OTHER DOD		0	11	41	0	36	38	38	40
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		1911	1157	12366	9537	7996	6288	5856	5640

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24-May-94

FY92 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	TOTAL WORKYEARS
ENVIRONMENTAL TEST FACILITY	0.4	0.2	0.0	3.8	0.0	4.3
INSTRUMENTED TEST RANGE	59.9	10.5	1.6	50.8	2.2	125.0
RANGE OPERATIONS	3.0	1.1	0.2	2.7	0.1	7.1
EMI/TEMPEST TEST FACILITY	0.4	1.3	0.0	6.3	1.9	9.9
IEW TEST DIVISION	0.0	13.1	0.0	2.7	0.0	15.8
ELECTROMAGNETIC ENVIR TEST FAC	1.7	4.7	0.0	43.5	13.7	63.5
AVIONICS/GPS TEST FACILITY	1.3	0.0	0.0	4.7	0.0	6.0
	66.6	30.9	1.8	114.4	17.8	231.6
EPG CAPABILITY	44.4	47.1	1.2	242.6	15.2	350.4
TOTAL	111.0	78.0	3.0	357.0	33.0	582.0

FY93 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	
ENVIRONMENTAL TEST FACILITY	0.7	1.0	0.0	7.8	0.0	9.5
INSTRUMENTED TEST RANGE	14.3	31.3	0.9	45.6	0.6	92.6
RANGE OPERATIONS	1.8	1.6	0.0	2.7	0.1	6.2
EMI/TEMPEST TEST FACILITY	0.2	1.5	0.0	4.7	1.1	7.6
IEW TEST DIVISION	0.0	9.9	0.0	0.6	0.0	10.5
ELECTROMAGNETIC ENVIR TEST FAC	0.1	8.7	0.0	23.8	25.4	58.0
AVIONICS/GPS TEST FACILITY	0.8	0.0	0.0	7.8	0.0	8.7
	17.9	54.1	0.9	92.9	27.2	193.0
EPG CAPABILITY	3.1	17.9	2.1	302.1	14.8	339.0
TOTAL	21.0	72.0	3.0	395.0	42.0	532.0

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Document Separator

White Sands Missile Range
BRAC 95 R&D Data Call #7
(US Army Electronic Proving Ground)

PART V-7: Data Submission

R&D FACILITY / CAPABILITY TITLE:

AVIONICS/GLOBAL POSITION SYSTEMS

SECTION 1: GUIDANCE, STANDARDS & ASSUMPTIONS

This section not provided. Please refer to the original guidance and data call for this information.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

2.1 WORKLOAD

2.1.A Historical Workload

2.1.A.1 Use the Historical Workload Form (FORM5-0 and FORM5-1). See enclosure 1.

2.1.B Forecasted Workload

2.1.B.1 Identify all appropriations (by program element) that generated testing or test support requirement, or are expected to generate such a requirement for FY92, FY93, and each year of the FY95 FYDP. See enclosure 2, pages 1 to 14; data are provided as (1) USAEPG rollup and (2) five functional areas.

2.1.B.2 Provide the amount of test work performed at your facility in FY92 and FY93. Break this out by workyears across the functional descriptors. See enclosure 2, page 15.

2.2 UNCONSTRAINED CAPACITY

2.2.A Use the Unconstrained Capacity Form (FORM6). See enclosure 1.

2.2.B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

Capacity is limited by availability of physical facilities.

2.3 TECHNICAL RESOURCES

2.3.A Does the facility have a specified war-time or contingency role established in approved war plans?

No.

2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

USAEPG would lose a major portion of their ability to perform its T&E mission to support materiel acquisition and fielding decisions.

2.3.B.1 On the test mission of any other activity?

USAEPG provides test support to all PMs, PEOs, and independent technical evaluations of electronic system on subsystems. Their mission would be degraded to the extent that test results and analysis would no longer be available to support acquisition and fielding decisions.

2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

As the prime tester of tactical equipment, USAEPG has an impact on the operational effectiveness of the Armed Forces.

SECTION 3: MEASURES OF MERIT

3.1 OVER-ARCHING MEASURES OF MERIT

3.1.A **Interconnectivity**

3.1.A.1 What percentage of the total test workload of this facility in FY93 involved the real-time or near real-time exchange of data or control with another facility? List the facilities you interconnect to for tests and identify how many are simultaneous activities. Identify these as to whether they are internal or external to the site.

None.

3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected. If yes, explain.

No.

3.1.B **Facility Condition**

3.1.B.1 Use the Facility Condition Form (FORM4). See enclosure 1.

3.1.C Environmental and Encroachment Carrying Capacity

3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility? If yes, explain.

No. Of the one-thousand, one-hundred and seventy-two (1,172) surveyed test sites that EPG has, only three (3) test sites are declared restricted use for daytime operations due to bat-related restriction periods from July 1 through September 30 of each year. The restricted use test sites are East 1 and 2, and West 1. During this time-frame, the lesser long-nosed (Leptonycteris curasoae yerbaabuenae) bats migrate to these particular sites to feed on the nectar from the flowers of the dense Agave stands. West 1 is restricted because of the proximity to a roosting site. This restriction is considered minor impact to testing.

3.1.C.2 How much could workload be increased before this limit would be reached? Express you answer as a percentage of your current workload.

Workload can be increased to 100 percent local testing in Fort Huachuca. Our estimate is based on communications-electronic, unmanned aerial vehicle (UAV), and laboratory type (e.g. computer simulation, environmental, and reliability) testing. As an example, abatement procedures are in place for night testing/operations of UAVs during July 1 to September 30.

3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire, and describe them.

Yes. There are two voluntary agreements. These are with:

(1) The U.S. Fish and Wildlife Service to protect roost sites and forage habitat for the lessor long-nosed bat. There is no expiration date for this agreement.

(2) The Arizona Archeological Society to perform investigation/archeological studies conducted by surveys, excavations and mitigation of possible historical and/or archeological importance. There is no expiration date for this agreement.

3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

a. State population was considered and not international population. Due to the location of Fort Huachuca, if we take a 50 miles radius, with Fort Huachuca being the center of the circumference, the southern-most portion of the circumference falls into international lines (Republic of Mexico).

b. The total population within a 50 miles radius is 97,624. The 50 miles radius encompasses the counties of Cochise, portions of Pima, and Santa Cruz.

c. The total population within a 100 miles radius is approximately 577,500. The 100 miles radius encompasses the counties of Cochise and portions of Pima, and Santa Cruz.

d. The total population within a 150 miles radius is 820,734. The 150 miles radius encompasses the counties of Cochise and Pima, Graham, and, Pinal.

e. The total population within a 200 miles radius is 2,942,835. The 200 miles radius encompasses the counties of Cochise, Santa Cruz, Pima, Graham, Pinal, Gila, and portions of Maricopa.

f. Cochise County consists of the following populated areas: Benson, Bisbee, Bowie, Cochise, Douglas, Dragoon, Elfrida, Hereford, Huachuca City, McNiel, Naco, Pearce, Pirtleville, Pomerene, Saint David, San Simon, Sierra Vista, Tombstone, and Willcox. Fort Huachuca was annexed by Sierra Vista in 1971.

g. Graham County consists of the following populated areas: Bylas, Central, Fort Thomas, Pima, Safford, Soloman, and Thatcher.

h. Maricopa County (only those that fell into the radius of consideration) consists of the following populated areas: Arlington, Avondale, Buckeye, Cashion, Chandler, El Mirage, Gila Bend, Gilbert, Glendale, Mesa, Phoenix, Scottsdale, and Tempe.

i. Pima County consists of the following populated areas: Ajo, Arivaca, Cortaro, Green Valley, Lukeville, Marana, Mount Lemon, Rillito, Sahuarito, Sasabe, Sells, Topawa, and Tucson.

j. Pinal County consists of Casa Grande, Coolidge, Eloy, Florence, Kearny, Mammoth, Maricopa, Oracle, Picacho, Red Rock,
Sacaton, San Manuel, Stanfield, Superior, and Valley Farms.

k. Santa Cruz County consists of the following populated areas: Elgin, Nogales, Patagonia, Sonoita, and Tumacacori.

3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and the frequency of use for each that affect of could affect mission accomplishment in your air, land, or sea space.

a. Commercial air travel is available from Fort Huachuca to Phoenix.

b. Arizona Highway 90 feeds Fort Huachuca from the north, where it originates from Interstate 10, 30 miles away. This is the major route leading into the reservation.

c. Arizona Highway 92 originates at the Fort Huachuca east gate and proceeds east and then south around the northern and eastern boundaries of the City of Sierra Vista.

SENSITIVE/CLOSE HOLD

Errata Sheet # 4 of 10

1. This Errata Sheet applies to the following EPG R&D Faciilty/Capability Data Submissions:

Range Operations Capabilities
Environmental Test Facility
Instrumented Test Range
Electromagnetic Environmental Test Facility
EMI/TEMPEST Test Capabilities
Intelligence & Electronic Warfare
Avionics/ Global Positioning System
General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.1.d.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

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c. Black Tower Complex. The Black Tower Complex is dedicated for the use of all UAV testing and training on Fort Huachuca. This complex is composed of 3 hangars, parachute tower, hazardous material storage facility, explosive storage bunker, 2 runways (1 *dirt runway 220' x 2000' (as of Jul 94)*, and a paved runway, 75' x 3000'). In addition, the following are available to UAV testing: frequency coordination, precision tracking, area surveillance, real-time and post-test digital data, communications and timing, photographic and video support, optical/infrared targets, and radar/communications threat environment.

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several sections skipped

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3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes, explain.

a. Yes. The platform is being completely rebuilt and should increase its capacity. The west turntable will be going through a major rehabilitation.

b. *The UAV dirt runway expansion to 2,000 feet will be complete in July of 1994.*

d. Fry Boulevard, the main street of Sierra Vista, originates at the Fort Huachuca main gate and proceeds due east through the heart of the city.

e. Buffalo Soldier Trail also originates at the Fort Huachuca main gate, proceeds south and then east around the southern boundary of the city.

f. Garden Avenue runs north and south and connects Fort Huachuca's main and east gates.

g. A dirt road originates at Fort Huachuca's west gate and proceeds west into the Coronado National Forest.

h. the commercial use of Restricted Areas R-2303A and R-2303B has negligible impact on the testing that EPG conducts. The ingress/egress of commercial traffic to Sierra Vista Airport is deconflicted by coordination with Libby Tower.

3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

None.

3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

None.

3.1.D **Specialized Test Support Facilities and Targets**

see prev page

3.1.D.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

Yes. Range Operations, Environmental Test Facility, Instrumented Test Range, Electromagnetic Environmental Test Facility, EMI/TEMPEST, and the Avionics/Global Positioning Systems are all used in support on our general electronic test capability. All are reported separately in Part V-1 through V-5 and V-7.

3.1.D.2 Are specialized targets required to support this facility, If yes, explain.

No.

3.1.D.2.A Have the specialized targets been validated? If yes, by whom?

No.

3.1.E **Expandability**

3.1.E.1 Other than the expandability inherent in the unconstrained capacity (FORM 6) discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? If yes, explain.

No.

3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? If yes, identify by T&E functional area and test type.

No.

3.1.E.2 Are the airspace, land, and water areas adjacent to areas under DoD control available and/or suitable for physical expansion to support new missions or increased footprints. If yes, explain.

Generally, surrounding non-DoD properties are either privately owned, National Forest, Park Service, or Bureau of Land Management managed. Use of some of these lands can be negotiated for certain types of tests.

3.1.E.3 Is the facility equipped to support secure operations. If yes, to what level of Classification (Confidential -> Special Access)?

Yes, up to and including SAR.

see page prev 3.1.D.1

3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes, explain.

No.

3.1.F **Uniqueness**

3.1.F.1 Is this a one-of-a-kind facility within the DoD? If yes, explain.

No.

3.1.F.1.A Within the U.S. Government? If yes, explain

No.

3.1.F.1.B Within the U.S? If yes, explain.

No.

3.1.F.2 Are you currently providing support to DoD users outside your Military Department? If yes, indicate the percentage of total workload in FY92 and FY93 by Military Department.

Yes.	FY92	FY93
NAVY	.7%	.1%
MARINE CORPS	.4%	1.6%
AIR FORCE	1.4%	2.9%
	2.5%	4.6%

3.1.G **Available Air, Land, and Sea Space**

3.1.G.1 How many square miles of air, land, and sea space are available to support test operations?

On the reservation, 122 square miles (78,000 acres) of real estate are available to support testing. An additional 45 square miles (29,000 acres) of land are leased from federal, state, and local agencies throughout southern Arizona, from the New Mexico to California state lines. Also available on an as-needed basis are 39,000 square miles (25 million acres) of land obtainable from the Bureau of Land Management (BLM) through negotiation and a Memorandum of Agreement. In addition to the local airspace, 891.5 square miles, Military Operations Areas to the west have been used in the past to support tests. Use of these areas, in excess of 1,800 square miles, require coordination with several other agencies.

3.1.G.2 Who owns or controls the land under the Restricted Airspace yo use?

The Ft. Huachuca military reservation is comprised of 122 square miles (78,000 acres) of real estate. The remaining real estate available to support testing is leased from federal, state, and local agencies.

3.1.G.3 How much of this (total air space available to support operations) is Restricted Airspace, and what altitude limits are associated with the restricted areas?

The restricted area R-2303A, 261.9 square miles, is within the boundaries of R-2303B which is 891.5 square miles. R-2303A altitude limits are surface to 15,000 ft MSL and R-2303B is 15,000 to 45,000 ft MSL.

3.1.G.4 Do you have special use airspace other than supersonic airspace? If yes, for what types of tests? What are its dimensions? Will it support simultaneous users?

Yes. Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.1.G.5 Is the airspace over land or water. List the number of square miles over each.

All over land -- 891.5 square miles.

3.1.G.6 Identify known or projected airspace problems that may prevent accomplishing your mission.

No known or projected problems.

3.1.G.7 What is the maximum straight line segment in your airspace in nautical miles?

52.6 nautical miles.

3.1.G.8 What public airspace have you used for overflight of weapons systems in the past? What was the nature of those tests? Do you anticipate being able to use that same public airspace for similar tests in the future? Yes or no to each.

Two public airspace corridors, V-393 and V-395 between Tucson and Nogales, AZ, have been used in the past. The Unmanned Aerial Vehicle Short Range crossed those corridors and operated in the MOAs to the west during the maximum range test. Yes.

3.1.H **Geographic/Climatological Features**

3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap of the earth). Identify all of the following that apply: mountains, forest, jungle, cultivated lowland, swamp, riverine, desert, and sea. State the area of each in square miles.

a. The Fort Huachuca military reservation is geographically located in the inter-mountain desert plateau region between the souther most extent of the Rocky mountains and the northern most extent of the Sierra Madres. The area of land is covered by the installation is 115 square miles. The elevation varies from 3,925 feet to 7,709 feet above sea level wit 30 percent of the area located in rugged mountainous terrain. The remaining terrain is typified by rolling hills gradually flattening away from the mountains. Vegetation in the area is lower elevations. Above 5,000 feet Black Oak and Juniper are common and above 6,500 feet yellow pine is predominate.

b. The word "Huachuca" means "Place that Thunders" and from June to September, Fort Huachuca lives up to its name, 85 to 99 percent of the annual lightening activity occurs during this time. Activity can range from isolated mountain thundershowers to powerful Mesoscale Convective Complexes. Thunderstorms are DANGEROUS, due to the potential for lightning strikes, range and forest fires, strong winds, hail, heavy precipitation and flash flooding.

c. Precipitation in the area varies dramatically from season to season and from year to year. The average annual precipitation from 1956 to present is 14.91 inches. Measurable precipitation can occur during every month of the year, but is most likely to occur in July

and August. Fifty to 75 percent of the annual precipitation recorded typically falls during these two months. From November to late April, depending on the temperature, snow showers can occur with accumulations frequent above 5,000 feet.

d. Wind direction and speed are greatly influenced by seasonal, diurnal and orographic effects. Typically winds in the morning are from the southeast at 5 to 10 knots shifting to the southwest at 8 to 16 with occasional gusts to 24 knots. During the fall, winter, and spring strong wind events with winds from the south to southwest at 20 to 30 with gusts in excess of 50 knots and a duration of several hours to several days can occur 10 to 25 percent of the time. During the summer strong down burst winds associated with the thunderstorms with instantaneous gusts in excess of 60 knots can occur with little warning.

e. Temperatures in the local area are moderate with the extremes ranging from a high of 107 to a low of 9 degrees. Average summertime temperatures range from highs in the upper eighties to lows in the mid-sixties. Average wintertime temperatures range from highs in the low sixties to lows in the mid thirties. The average temperature for the year is 62 degrees.

f. Fort Huachuca is an excellent location for a wide variety of test activities with environmental considerations. Most of the moderate to severe weather conditions discussed above are of relatively short duration, and with proper planning, mission delays can be held to a minimum all year round.

3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of tests?

No.

3.1.H.3 Do you have to go to other geographical locations to satisfy test requirements? If yes, explain. If yes, provide as a percent of overall workload per year for the last 8 years.

No.

3.1.H.4 Number of days per year with average temperature below 32 degrees F? Between 32 and 95 degrees F? Above 95 degrees F?

All 365 days in an average year have a daily average temperature between 32 and 95 degrees fahrenheit. During the entire 35 year period covered by our climatological database, approximately 10 days had daily averages below 32 degrees which equates to one such day every 3-4 years. The highest daily average temperature during the same period has been 90 degrees which occurs only once or twice each year. The hottest weather at this location is accompanied by low relative humidity which results in good night times cooling after a hot day.

3.1.H.5. Number of days per year with average relative humidity below 30%? Between 30 and 80%? Above 80%

The average number of days per year with an average relative humidity below 30% is 150. Humidity can occasionally fall below 10% during these days. An average of 194 days per year have average relative humidities between 30% and 80%. Finally, 21 days per year, on average, have an average relative humidity above 80%.

3.1.H.6 Number of test missions per year (85 - 93) canceled due to weather?

Not applicable.

3.1.H.7 Number of test days per year (85 - 93) canceled due to weather?

Not applicable.

3.1.H.8 Number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

Based upon the 35 year climatological database, there are no full 24 hour periods during which the visibility drops below 3 miles. Restricted visibility occurs most often during periods of showery types of precipitation which occur primarily during the winter and summer rainy seasons. Occurrences of fog occur primarily during the winter and are of short duration. Based upon climatology, 2.3% or 197.6 hours has visibility below 3 miles in an average year. This equates to a total of 8.2 days. Visibility of 1-3 miles occurs, on average, a total of 109.6 hours while visibility less than one mile occurs a total of 88.1 hours a year or about 1% of the time on average. December is the month with the highest number of occurrences with 29.8 hours with visibility of 1-3 miles and 14.9 hours with visibility below 1 mile on average. Visibility below 3 miles has never been reported in June.

3.1.H.9 What is the average number of flying days available per year for flight tests? Provide historical average from the past eight years.

The average number of flying days available per year based solely upon weather conditions during the period of review is 353. This equates to 96.7% of all days in a year being available. The primary weather condition that may make a day unavailable is strong wind since all other adverse weather conditions are intermittent in nature.

3.1.H.10 What percentage of the time are your test operations restricted due to weather?

Not applicable.

SENSITIVE/CLOSE HOLD

Errata Sheet # 5 of 10

1. This Errata Sheet applies to the following EPG R&D Facility/Capability Data Submission:

   Range Operations Capabilities
   Environmental Test Facility
   Instrumented Test Range
   Enectromagnetic Environmental Test Facility
   EMI/TEMPEST Test Capabilities
   Intelligence & Electronic Warfare
   Avionics/Global Positioning Systems
   General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.2.A.6 What is the maximum number of simultaneous users?

Number of simultaneous users is limited by USAF or other military department rules on supersonic flight in restricted corridors. No specific limitation on the number of simultaneous users is available to EPG.

3.2.B **Airfield and Facility Characteristics**

3.2.B.1 Provide a brief description of your airfield and support facilities.

Libby Army Airfield is a Joint Use Airfield *owned by Ft. Huachuca (TRADOC)* and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be all concrete when completed (FY95) and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and belongs to Ft. Huachuca.

3.2 AIR VEHICLES

3.2.A Supersonic Airspace see prev page

Not applicable.

3.2.B Airfield and Facility Characteristics

see prev page

3.2.B.1 Provide a brief description of your airfield and support facilities.

Libby Army Airfield is a Joint Use Airfield and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be al concrete when completed and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and does not belong to the Proving Ground.

3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

Hubbard assault strip is 5 miles from Libby and could be used for an emergency landing.

3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

Libby Field is situated within R-2303B.

3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

Libby Field is unique because of length, position relative to the restricted airspace and the weather found in southern Arizona.

3.2.B.5 Is there a size, weight, maintenance, or mission limitation that would affect test operations? If yes, describe.

No.

3.2.B.6 Including hangers an ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise Missiles?

Excluding hangars, enough ramp area exists to support approximately 20 fighter size aircraft 10 multi-engine aircraft or 25 rotary wing aircraft.

3.2.C. **Test Operations**

3.2.C.1 What types of air vehicle testing can be supported? Describe?

We can physically handle rotary wing, fixed wing and UAV aircraft, providing simulated flight patterns to test the Global Positioning System (GPS) and systems that may have it integrated or embedded. These test simulations can be performed on the flight apron, or inside the Avionics/GPS compound.

3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

Yes, the Global Positioning System Instrumentation Suite (GPSIS) will allow for full pre-flight checkout of GPS, integrated GPS, or embedded GPS receivers on the flight apron.

3.2.C.3 What kinds, numbers of aircraft and mix of same can be supported (manned and unmanned)?

It is possible to provide simulation to any mix and quantity of rotary wing, fixed wing, or UAV aircraft as long as the flight profile to be simulated is the same. However, if the flight profile must be different, then we can provide simulation to only two vehicles, and the mix can be rotary wing, fixed wing and UAV.

3.2.C.4 Does UAV and or rotary wing operations pose any limitations on other types of missions? If yes, explain.

No.

3.2.C.5 What sorts of missions can be flown within local airspace?

Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

Not applicable.

3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

Not applicable.

3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

3.3 ELECTRONIC COMBAT

This subject is addressed in Part V-6, Intelligence & Electronic Warfare, of this report.

3.4 ARMAMENTS / WEAPONS

Our tests of armaments and weapons systems generally consist of antenna, performance, environmental, and EM tests of electronic systems. The information requested in this section does not apply.

GENERAL INFORMATION

FACILITY / CAPABILITY TITLE: Avionics/GPS Test Facility

ORIGIN DATE: 16 May 1994

Service: U.S. Army **Organization / Activity:** USA Electronic Proving Ground (USAEPG) **Location:** Ft. Huachuca AZ

T&E Functional Area: Other UIC: WO4YAA

T&E Test Facility Category:

	T&E	S&T	DE	NE	T&D	OTHER	
Percentage Use:	85		15				= 100
Breakout by T&E Functional Area (%)							
Air Vehicles	10		5				
Armament / Weapons							
Electronic Combat							
Other	75		10				

Note: Total in Breakout must equal "Percentage Use" line entry.

TECHNICAL INFORMATION

FACILITY / CAPABILITY TITLE: Avionics/GPS Test Facility

Facility Description; including mission statement: The Avionics/GPS Test Facility, with 7200 sq ft of laboratory and office space, has available 28 volts direct current (Vdc), 115 volts alternating current (Vac) 60 Hz and 400 Hz for avionic testing. This building and its immediate area are fenced and conveniently located on the edge of Libby Army Airfield. In the laboratory area contains two SteL 7200 Satellite Signal Simulators used to test airborne, vehicular and manpack Global Positioning System receivers.

MISSION: The mission is to plan, conduct, collect and analyze data, and write test reports on avionic, and position and navigation equipment.

Interconnectivity / Multi-Use of T&E Facility:

Type of Tests Supported: Ground and air vehicular simulation of navigation and positing systems.

Summary of Technical Capabilities: 2 each - eight channel SteL 7200 Satellite Signal Simulators (SSS) with Motion Generators. Both SteL 7200s have been modified to provide short term Selective Availability/Anti-Spoof capabilities. These SSS have the ability to replicate a limited GPS constellation, with a maximum of 8 satellites being viewed at any one time. Utilizing the motion generator the SSS can make the Global Positioning System (GPS) receiver to appear to be in motion. The simulation provides the ability to provide a complete flight profile (scenario) to a GPS receiver sitting on a bench.

Keywords: SATELLITE SIGNAL SIMULATOR (SSS), GLOBAL POSITIONING SYSTEM INSTRUMENTATION SUITE (GPSIS), AVIONICS, SteL 7200

"FORM2"

ADDITIONAL INFORMATION

FACILITY / CAPABILITY TITLE: Avionics/GPS Test Facility

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	2	1	1	1	1	1	1
Enlisted	24	8	8	8	8	8	8
Civilian	4	4	4	4	4	4	4
Contractor	8	8	8	8	8	8	8
Total	38	21	21	21	21	21	21

Total Square Footage: 7200sq. ft

Test Area Square Footage: 4668sq. ft

Office Space Square Footage: 1016sq. ft

Tonnage of Equipment: 5 tons

Volume of Equipment (cu.ft.): 6720 cubic ft

Annual Maintenance Cost: Unknown

Estimated Moving Cost: $30 K

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$50 K	$2 K		$330 K		$2 M	

"FORM3" TAB: page:

FACILITY CONDITION

FACILITY / CAPABILITY TITLE: Avionics/GPS Test Facility

AGE: 17 Years (1977) **REPLACEMENT VALUE:** $720,000

MAINTENANCE & REPAIR BACKLOG:

DATE OF LAST UPGRADE: Feb 94

NATURE OF LAST UPGRADE: Build Training Area

MAJOR UPGRADES PROGRAMMED

1. **UPGRADE TITLE:** TDAP project upgrade for the Global Positioning System Instrumentation Suite (GPSIS)

   TOTAL PROGRAMMED AMOUNT: $330 K

   SUMMARY DESCRIPTION: Upgrade the GPSIS to be fully capable of Selective Availability/Anti-Spoof (SA/AS), and to provide interface capability for testing MIL-STD-1553 Equipment, and to provide and upgrade/expanded data collection/processing capability.

2. **UPGRADE TITLE:** Expansion of the Avionics/GPS Test Facility

   TOTAL PROGRAMMED AMOUNT: $2 M

   SUMMARY DESCRIPTION: Build a 7800 sq ft Hanger and expand the office space by 3600 sq ft.

HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: Avionics/GPS Test Facility

T&E FUNCT. AREA		FISCAL YEAR 86	87	88	89	90	91
AIR VEHICLES	DIRECT LABOR	80	3,340	4,814	6,941	7,501	1,829
	TEST HOURS						
	MISSIONS						
ELECT. COMBAT	DIRECT LABOR						
	TEST HOURS						
	MISSIONS						
ARMNT/WEAPONS	DIRECT LABOR						
	TEST HOURS						
	MISSIONS						
OTHER T&E	DIRECT LABOR	16,232	15,010	25,750	40,160	17,971	9,847
	TEST HOURS						
	MISSIONS						
OTHER	DIRECT LABOR						
	TEST HOURS						
	MISSIONS						

"FORM5-0" TAB: page:

HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: Avionics/GPS Test Facility

T&E FUNCT. AREA		FISCAL YEAR 92	93	94	95	96	97
AIR VEHICLES	DIRECT LABOR	2,254	1,466				
	TEST HOURS						
	MISSIONS						
ELECT. COMBAT	DIRECT LABOR						
	TEST HOURS						
	MISSIONS						
ARMNT/WEAPONS	DIRECT LABOR						
	TEST HOURS						
	MISSIONS						
OTHER T&E	DIRECT LABOR	10,517	9,729				
	TEST HOURS						
	MISSIONS						
OTHER	DIRECT LABOR						
	TEST HOURS						
	MISSIONS						

"FORM5-1" TAB: page:

SENSITIVE/CLOSE HOLD

SENSITIVE/CLOSE HOLD

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY / CAPABILITY TITLE: Avionics/GPS Test Facility

ANNUAL HOURS OF DOWNTIME	1	168
AVERAGE DOWNTIME PER DAY (line 1 / 365)	2	0.46
AVERAGE HOURS AVAILABLE PER DAY (24 / line 2)	3	23.54

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST FACILITY HOUR	WORKLOAD PER FACILITY HOUR
4	5	6	7
"TYPICAL	14.4	0.5	7.012
		Total Sum	7.012

UNCONSTRAINED CAPACITY PER DAY (line 3 * Total Sum)

8 165.34

ANNUAL UNCONSTRAINED CAPACITY

9 60,350

"FORM6"

TAB: page:

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
I. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM HAWK	23801	0	86	0	0	90	90	90	90
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
UAV	35889	1883	0	0	0	50	50	50	50
PM RADAR	62120	0	9	0	0	25	25	25	25
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
PM UAV	62303	0	110	37	20	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
BRDEC	62785	0	7	0	5	15	15	15	15
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	73	0	0	0	0	0	0
MINE WARFARE	63619	398	0	0	0	0	0	0	0
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
FLD SPT ACT - FT HOOD	65712	0	3555	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	88	84	31	7
Subtotal RDTE		16397	11145	7557	5992	9340	9377	9304	8242
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
HAWK GSE	C28100	290	0	0	0	263	257	243	235
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PM AAH	112000	0	1	0	0	0	0	0	0
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
PM UAV	523200	0	19	122	322	263	257	243	234
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
OTHER PROCUREMENT	VARIOUS	0	0	9	20	430	569	654	717
Subtotal PROCUREMENT		3027	8862	5966	4996	2625	2827	2792	2833
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
MICOM	OMA	0	0	8	0	0	0	0	0
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
FT POLK	OMA	0	95	0	0	0	0	0	0
OTEA	OMA	0	25	0	0	0	0	0	0
TRADOC	OMA	0	279	443	220	200	200	200	200
Miscellaneous OMA	OMA	0	158	18	16	802	817	799	730
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		3589	3902	1672	1021	1652	1717	1749	1780
TOTAL PARENT SERVICE		23013	23909	15195	12009	13617	13921	13845	12855
2. Other DOD									
a. USAF	USAF	1054	1452	1064	1039	556	564	599	654
b. NAVY/MARINE CORPS	USN/USMC	348	1801	1559	1216	1204	1293	1302	1291
c. Misc DOD	MISC DOD	864	111	158	145	32	37	42	47
TOTAL OTHER DOD		2266	3364	2781	2400	1792	1894	1943	1992
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		25279	27416	29778	23409	22347	20937	20451	19241

SENSITIVE/CLOSE HOLD

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
UAV	35889	1883	0	0	0	50	50	50	50
PM UAV	62303	0	110	37	20	25	25	25	25
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	7	8	9	2
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
FLD SPT ACT - FT HOOD	65712	0	851	0	0		0	0	0
Subtotal RDTE		2219	976	38	20	82	83	84	77
b. PROCUREMENT									
PM AAH	112000	0	1	0	0	0	0	0	0
PM UAV	523200	0	19	122	322	263	257	243	234
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
Subtotal PROCUREMENT		0	136	149	355	263	257	243	234
c. OMA and Other Army									
TRADOC	OMA	0	279	443	220	200	200	200	200
Subtotal OMA and Other Army		0	279	443	220	200	200	200	200
TOTAL PARENT SERVICE		2219	1391	630	595	545	540	527	511
2. Other DOD									
a. USAF	USAF		339		200	134	135	160	184
b. NAVY/MARINE CORPS	USN/USMC		1471	1306	916	750	800	800	800

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
c. Misc DOD	MISC DOD	864	62	24	85	12	12	12	12
TOTAL OTHER DOD		864	1872	1330	1201	896	947	972	996
3. Other U.S. Government									
4. TOTAL DIRECT USER FUNDS		3083	3263	1960	1796	1441	1487	1499	1507

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
MICOM	63322	0	49	0	0	0	0	0	0
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
MISCELLANEOUS R&D	Various	0	0	0	0	9	0	8	0
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
Subtotal RDTE		4464	1713	1263	546	1559	1550	1558	1536
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
Subtotal PROCUREMENT		53	721	1758	1434	377	379	342	337
c. OMA and Other Army									
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	58	18	16	300	300	300	300
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
Subtotal OMA and Other Army		52	2257	830	406	550	550	550	550

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
TOTAL PARENT SERVICE		4569	4691	3851	2386	2486	2479	2450	2423
2. Other DOD									
a. USAF	USAF	0	0	147	0	18	19	19	20
b. NAVY/MARINE CORPS	USN/USMC	0	13	15	0	18	19	20	20
TOTAL OTHER DOD		0	13	162	0	36	38	39	40
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		4569	4704	4013	2386	2522	2517	2489	2463

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ARMAMENTS/WEAPONS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
PM HAWK	23801	0	86	0	0	90	90	90	90
MINE WARFARE	63619	398	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	2	8	8	5
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
Subtotal RDTE		574	86	0	0	92	98	98	95
b. PROCUREMENT									
HAWK GSE	C28100	290	0	0	0	263	257	243	235
Subtotal PROCUREMENT		290	0	0	0	263	257	243	235
c. OMA and Other Army									
Subtotal OMA and Other Army		0	0	0	0	0	0	0	0
TOTAL PARENT SERVICE		864	86	0	0	355	355	341	330
2. Other DOD									
TOTAL OTHER DOD		0	0	0	0	0	0	0	0
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		864	86	0	0	355	355	341	330

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
PM RADAR	62120	0	9	0	0	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
BRDEC	62785	0	7	0	5	15	15	15	15
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
MISCELLANEOUS R&D	Various	0	0	0	0	70	68	6	0
FLD SPT ACT - FT HOOD	65712	0	2704	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
Subtotal RDTE		9140	8253	5845	5055	7295	7332	7320	6311

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
b. PROCUREMENT									
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
OTHER PROCUREMENT	VARIOUS	0	0	9	20	20	55	43	34
Subtotal PROCUREMENT		2684	8005	4059	3207	1312	1420	1353	1344
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
OTEA	OMA	0	25	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	100	0	0	302	317	299	230
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		1626	480	287	229	602	667	699	730
TOTAL PARENT SERVICE		13450	16738	10191	8491	9209	9419	9372	8385
2. Other DOD									
a. USAF	USAF	1054	1113	917	839	404	410	420	450
b. NAVY/MARINE CORPS	USN/USMC	348	306	210	300	400	436	444	431
c. Misc DOD	MISC DOD		49	121	60	20	25	30	35
TOTAL OTHER DOD		1402	1468	1248	1199	824	871	894	916
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		14852	18206	11439	9690	10033	10290	10266	9301

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	24	0	0	0	0	0	0
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	0	0	0	0
Subtotal RDTE		0	117	411	371	312	314	244	223
b. PROCUREMENT									
MISCELLANEOUS PROCUREMENT	Various	0	0	0	0	410	514	611	683
Subtotal PROCUREMENT		0	0	0	0	410	514	611	683
c. OMA and Other Army									
MICOM	OMA	0	0	8	0	0	0	0	0
FT POLK	OMA	0	95	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	0	0	0	200	200	200	200
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
Subtotal OMA and Other Army		1911	886	112	166	300	300	300	300
TOTAL PARENT SERVICE		1911	1003	523	537	1022	1128	1155	1206
2. Other DOD									
b. NAVY/MARINE CORPS	USN/USMC		11	41	0	36	38	38	40
TOTAL OTHER DOD		0	11	41	0	36	38	38	40
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		1911	1157	12366	9537	7996	6288	5856	5640

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24-May-94

FY92 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	TOTAL WORKYEARS
ENVIRONMENTAL TEST FACILITY	0.4	0.2	0.0	3.8	0.0	4.3
INSTRUMENTED TEST RANGE	59.9	10.5	1.6	50.8	2.2	125.0
RANGE OPERATIONS	3.0	1.1	0.2	2.7	0.1	7.1
EMI/TEMPEST TEST FACILITY	0.4	1.3	0.0	6.3	1.9	9.9
IEW TEST DIVISION	0.0	13.1	0.0	2.7	0.0	15.8
ELECTROMAGNETIC ENVIR TEST FAC	1.7	4.7	0.0	43.5	13.7	63.5
AVIONICS/GPS TEST FACILITY	1.3	0.0	0.0	4.7	0.0	6.0
	66.6	30.9	1.8	114.4	17.8	231.6
EPG CAPABILITY	44.4	47.1	1.2	242.6	15.2	350.4
TOTAL	111.0	78.0	3.0	357.0	33.0	582.0

FY93 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	
ENVIRONMENTAL TEST FACILITY	0.7	1.0	0.0	7.8	0.0	9.5
INSTRUMENTED TEST RANGE	14.3	31.3	0.9	45.6	0.6	92.6
RANGE OPERATIONS	1.8	1.6	0.0	2.7	0.1	6.2
EMI/TEMPEST TEST FACILITY	0.2	1.5	0.0	4.7	1.1	7.6
IEW TEST DIVISION	0.0	9.9	0.0	0.6	0.0	10.5
ELECTROMAGNETIC ENVIR TEST FAC	0.1	8.7	0.0	23.8	25.4	58.0
AVIONICS/GPS TEST FACILITY	0.8	0.0	0.0	7.8	0.0	8.7
	17.9	54.1	0.9	92.9	27.2	193.0
EPG CAPABILITY	3.1	17.9	2.1	302.1	14.8	339.0
TOTAL	21.0	72.0	3.0	395.0	42.0	532.0

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Document Separator

White Sands Missile Range
BRAC 95 R&D Data Call #7
(US Army Electronic Proving Ground)

PART V-8: Data Submission

R&D FACILITY / CAPABILITY TITLE:

GENERAL ELECTRONIC TEST CAPABILITY

SECTION 1: GUIDANCE, STANDARDS & ASSUMPTIONS

This section not provided. Please refer to the original guidance and data call for this information.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

2.1 WORKLOAD

2.1.A Historical Workload

2.1.A.1 Use the Historical Workload Form (FORM5-0 and FORM5-1). See enclosure 1.

2.1.B Forecasted Workload

2.1.B.1 Identify all appropriations (by program element) that generated testing or test support requirement, or are expected to generate such a requirement for FY92, FY93, and each year of the FY95 FYDP.

See enclosure 2, pages 1 to 14. Data are provided as (1) USAEPG rollup and (2) five functional areas.

2.1.B.2 Provide the amount of test work performed at your facility in FY92 and FY93. Break this out by workyears across the functional descriptors.

See enclosure 2, page 15.

2.2 UNCONSTRAINED CAPACITY

2.2.A Use the Unconstrained Capacity Form (FORM6). See enclosure 1.

2.2.B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?

Capacity is limited by availability of physical facilities.

2.3 TECHNICAL RESOURCES

2.3.A Does the facility have a specified war-time or contingency role established in approved war plans?

No.

2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

USAEPG would lose a major portion of their ability to perform its T&E mission to support materiel acquisition and fielding decisions.

2.3.B.1 On the test mission of any other activity?

USAEPG provides test support to all PMs, PEOs, and independent technical evaluations of electronic system on subsystems. Their mission would be degraded to the extent that test results and analysis would no longer be available to support acquisition and fielding decisions.

2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

As the prime tester of tactical equipment, USAEPG has an impact on the operational effectiveness of the Armed Forces.

SECTION 3: MEASURES OF MERIT

3.1 OVER-ARCHING MEASURES OF MERIT

3.1.A **Interconnectivity**

3.1.A.1 What percentage of the total test workload of this facility in FY93 involved the real-time or near real-time exchange of data or control with another facility? List the facilities you interconnect to for tests and identify how many are simultaneous activities. Identify these as to whether they are internal or external to the site.

None.

3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected. If yes, explain.

No.

3.1.B **Facility Condition**

3.1.B.1 Use the Facility Condition Form (FORM4). See enclosure 1.

3.1.C **Environmental and Encroachment Carrying Capacity**

3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility? If yes, explain.

No. Of the one-thousand, one-hundred and seventy-two (1,172) surveyed test sites that EPG has, only three (3) test sites are declared restricted use for daytime operations due to bat-related restriction periods from July 1 through September 30 of each year. The restricted use test sites are East 1 and 2, and West 1. During this time-frame, the lesser long-nosed (Leptonycteris curasoae yerbaabuenae) bats migrate to these particular sites to feed on the nectar from the flowers of the dense Agave stands. West 1 is restricted because of the proximity to a roosting site. This restriction is considered minor impact to testing.

3.1.C.2 How much could workload be increased before this limit would be reached? Express you answer as a percentage of your current workload.

Workload can be increased to 100 percent local testing in Fort Huachuca. Our estimate is based on communications-electronic, unmanned aerial vehicle (UAV), and laboratory type (e.g. computer simulation, environmental, and reliability) testing. As an example, abatement procedures are in place for night testing/operations of UAVs during July 1 to September 30.

3.1.C.3 Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire, and describe them.

Yes. There are two voluntary agreements. These are with:

(1) The U.S. Fish and Wildlife Service to protect roost sites and forage habitat for the lessor long-nosed bat. There is no expiration date for this agreement.

(2) The Arizona Archeological Society to perform investigation/archeological studies conducted by surveys, excavations and mitigation of possible historical and/or archeological importance. There is no expiration date for this agreement.

3.1.C.4 What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

a. State population was considered and not international population. Due to the location of Fort Huachuca, if we take a 50 miles radius, with Fort Huachuca being the center of the circumference, the southern-most portion of the circumference falls into international lines (Republic of Mexico).

b. The total population within a 50 miles radius is 97,624. The 50 miles radius encompasses the counties of Cochise, portions of Pima, and Santa Cruz.

c. The total population within a 100 miles radius is approximately 577,500. The 100 miles radius encompasses the counties of Cochise and portions of Pima, and Santa Cruz.

d. The total population within a 150 miles radius is 820,734. The 150 miles radius encompasses the counties of Cochise and Pima, Graham, and, Pinal.

e. The total population within a 200 miles radius is 2,942,835. The 200 miles radius encompasses the counties of Cochise, Santa Cruz, Pima, Graham, Pinal, Gila, and portions of Maricopa.

f. Cochise County consists of the following populated areas: Benson, Bisbee, Bowie, Cochise, Douglas, Dragoon, Elfrida, Hereford, Huachuca City, McNiel, Naco, Pearce, Pirtleville, Pomerene, Saint David, San Simon, Sierra Vista, Tombstone, and Willcox. Fort Huachuca was annexed by Sierra Vista in 1971.

g. Graham County consists of the following populated areas: Bylas, Central, Fort Thomas, Pima, Safford, Soloman, and Thatcher.

h. Maricopa County (only those that fell into the radius of consideration) consists of the following populated areas: Arlington, Avondale, Buckeye, Cashion, Chandler, El Mirage, Gila Bend, Gilbert, Glendale, Mesa, Phoenix, Scottsdale, and Tempe.

i. Pima County consists of the following populated areas: Ajo, Arivaca, Cortaro, Green Valley, Lukeville, Marana, Mount Lemon, Rillito, Sahuarito, Sasabe, Sells, Topawa, and Tucson.

j. Pinal County consists of Casa Grande, Coolidge, Eloy, Florence, Kearny, Mammoth, Maricopa, Oracle, Picacho, Red Rock,
Sacaton, San Manuel, Stanfield, Superior, and Valley Farms.

k. Santa Cruz County consists of the following populated areas: Elgin, Nogales, Patagonia, Sonoita, and Tumacacori.

3.1.C.5 Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and the frequency of use for each that affect of could affect mission accomplishment in your air, land, or sea space.

a. Commercial air travel is available from Fort Huachuca to Phoenix.

b. Arizona Highway 90 feeds Fort Huachuca from the north, where it originates from Interstate 10, 30 miles away. This is the major route leading into the reservation.

c. Arizona Highway 92 originates at the Fort Huachuca east gate and proceeds east and then south around the northern and eastern boundaries of the City of Sierra Vista.

SENSITIVE/CLOSE HOLD

Errata Sheet # 4 of 10

1. This Errata Sheet applies to the following EPG R&D Faciilty/Capability Data Submissions:

Range Operations Capabilities
Environmental Test Facility
Instrumented Test Range
Electromagnetic Environmental Test Facility
EMI/TEMPEST Test Capabilities
Intelligence & Electronic Warfare
Avionics/ Global Positioning System
General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.1.d.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

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c. Black Tower Complex. The Black Tower Complex is dedicated for the use of all UAV testing and training on Fort Huachuca. This complex is composed of 3 hangars, parachute tower, hazardous material storage facility, explosive storage bunker, 2 runways (1 *dirt runway 220' x 2000' (as of Jul 94)*, and a paved runway, 75' x 3000'). In addition, the following are available to UAV testing: frequency coordination, precision tracking, area surveillance, real-time and post-test digital data, communications and timing, photographic and video support, optical/infrared targets, and radar/communications threat environment.

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several sections skipped
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3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes, explain.

a. Yes. The platform is being completely rebuilt and should increase its capacity. The west turntable will be going through a major rehabilitation.

b. *The UAV dirt runway expansion to 2,000 feet will be complete in July of 1994.*

d. Fry Boulevard, the main street of Sierra Vista, originates at the Fort Huachuca main gate and proceeds due east through the heart of the city.

e. Buffalo Soldier Trail also originates at the Fort Huachuca main gate, proceeds south and then east around the southern boundary of the city.

f. Garden Avenue runs north and south and connects Fort Huachuca's main and east gates.

g. A dirt road originates at Fort Huachuca's west gate and proceeds west into the Coronado National Forest.

h. the commercial use of Restricted Areas R-2303A and R-2303B has negligible impact on the testing that EPG conducts. The ingress/egress of commercial traffic to Sierra Vista Airport is deconflicted by coordination with Libby Tower.

3.1.C.5.A How many test missions per year are canceled due to commercial or public use?

None.

3.1.C.6 What is the number of test missions that have been canceled due to encroachment in each of the last two years?

None.

3.1.D **Specialized Test Support Facilities and Targets**

see prev page

3.1.D.1 Do you have specialized facilities which are required to support you in conducting your test operations at your facility? If yes, describe.

Yes. Range Operations, Environmental Test Facility, Instrumented Test Range, Electromagnetic Environmental Test Facility, EMI/TEMPEST, and the Avionics/Global Positioning Systems are all used in support on our general electronic test capability. All are reported separately in Part V-1 through V-5 and V-7.

3.1.D.2 Are specialized targets required to support this facility, If yes, explain.

Specialized targets are reported under our Instrumented Test Range and EMETF capabilities (see Part V-3 and V-4).

3.1.D.2.A Have the specialized targets been validated? If yes, by whom?

Validations are reported in Part V-3 (Instrumented Test Range) and Part V-4 (Electromagnetic Environmental Test Facility) sections of this report.

3.1.E **Expandability**

3.1.E.1 Other than the expandability inherent in the unconstrained capacity (FORM 6) discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? If yes, explain.

No.

3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? If yes, identify by T&E functional area and test type.

No.

3.1.E.2 Are the airspace, land, and water areas adjacent to areas under DoD control available and/or suitable for physical expansion to support new missions or increased footprints. If yes, explain.

Generally, surrounding non-DoD properties are either privately owned, National Forest, Park Service, or Bureau of Land Management managed. Use of some of these lands can be negotiated for certain types of tests.

3.1.E.3 Is the facility equipped to support secure operations. If yes, to what level of Classification (Confidential -> Special Access)?

Yes, up to and including SAR.

see page prev 3.1.D.1

3.1.E.4 Are there any capital improvements underway or programmed in the FY95 FYDP that would change your capacity/capability. If yes, explain.

No.

3.1.F **Uniqueness**

3.1.F.1 Is this a one-of-a-kind facility within the DoD? If yes, explain.

Yes. USAEPG is the only U.S. and DoD Test Range with a federally mandated spectrum assignment and operational coordination requirement within a 24 kilometer radius of the post as described in the National Telecommunications & Information Administration manual. In addition the geography/topology around Fort Huachuca provides a natural barrier to electromagnetic contamination from outside sources and confines generated electromagnetic energy. USAEPG is able to utilize the spectrum from 9 KHz to 400 GHz with few emission power restrictions and with contiguous spectrum available for realistic rigorous EMV/EMC/susceptibility testing. The natural geologic shielding mentioned before and shown on the picture allows emissions testing of high output levels; this feature is irreplaceable and can only be partially duplicated through high dollar construction of shielded test facilities. The SLF is the only known T&E DoD HITL facility which can provide a

simultaneous dense environment of communication and non-communication threat emitters to a system under test.

3.1.F.1.A Within the U.S. Government? If yes, explain

Yes. See 3.1.F.1 above.

3.1.F.1.B Within the U.S? If yes, explain.

Yes. See 3.1.F.1 above.

3.1.F.2 Are you currently providing support to DoD users outside your Military Department? If yes, indicate the percentage of total workload in FY92 and FY93 by Military Department.

Yes.	FY92	FY93
NAVY	.7%	.1%
MARINE CORPS	.4%	1.6%
AIR FORCE	1.4%	2.9%
	2.5%	**4.6%**

3.1.G **Available Air, Land, and Sea Space**

3.1.G.1 How many square miles of air, land, and sea space are available to support test operations?

On the reservation, 122 square miles (78,000 acres) of real estate are available to support testing. An additional 45 square miles (29,000 acres) of land are leased from federal, state, and local agencies throughout southern Arizona, from the New Mexico to California state lines. Also available on an as-needed basis are 39,000 square miles (25 million acres) of land obtainable from the Bureau of Land Management (BLM) through negotiation and a Memorandum of Agreement. In addition to the local airspace, 891.5 square miles, Military Operations Areas to the west have been used in the past to support tests. Use of these areas, in excess of 1,800 square miles, require coordination with several other agencies.

3.1.G.2 Who owns or controls the land under the Restricted Airspace you use?

The Ft. Huachuca military reservation is comprised of 122 square miles (78,000 acres) of real estate. The remaining real estate available to support testing is leased from federal, state, and local agencies.

3.1.G.3 How much of this (total air space available to support operations) is Restricted Airspace, and what altitude limits are associated with the restricted areas?

The restricted area R-2303A, 261.9 square miles, is within the boundaries of R-2303B which is 891.5 square miles. R-2303A altitude limits are surface to 15,000 ft MSL and R-2303B is 15,000 to 45,000 ft MSL.

3.1.G.4 Do you have special use airspace other than supersonic airspace? If yes, for what types of tests? What are its dimensions? Will it support simultaneous users?

Yes. Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.1.G.5 Is the airspace over land or water. List the number of square miles over each.

All over land -- 891.5 square miles.

3.1.G.6 Identify known or projected airspace problems that may prevent accomplishing your mission.

No known or projected problems.

3.1.G.7 What is the maximum straight line segment in your airspace in nautical miles?

52.6 nautical miles.

3.1.G.8 What public airspace have you used for overflight of weapons systems in the past? What was the nature of those tests? Do you anticipate being able to use that same public airspace for similar tests in the future? Yes or no to each.

Two public airspace corridors, V-393 and V-395 between Tucson and Nogales, AZ, have been used in the past. The Unmanned Aerial Vehicle Short Range crossed those corridors and operated in the MOAs to the west during the maximum range test. Yes.

3.1.H **Geographic/Climatological Features**

3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap of the earth). Identify all of the following that apply: mountains, forest, jungle, cultivated lowland, swamp, riverine, desert, and sea. State the area of each in square miles.

a. The Fort Huachuca military reservation is geographically located in the inter-mountain desert plateau region between the souther most extent of the Rocky mountains and the northern most extent of the Sierra Madres. The area of land is covered by the installation is 115 square miles. The elevation varies from 3,925 feet to 7,709 feet above sea level wit 30 percent of the area located in rugged mountainous terrain. The remaining terrain is typified by rolling hills gradually flattening away from the mountains. Vegetation

in the area is lower elevations. Above 5,000 feet Black Oak and Juniper are common and above 6,500 feet yellow pine is predominate.

b. The word "Huachuca" means "Place that Thunders" and from June to September, Fort Huachuca lives up to its name, 85 to 99 percent of the annual lightening activity occurs during this time. Activity can range from isolated mountain thundershowers to powerful Mesoscale Convective Complexes. Thunderstorms are DANGEROUS, due to the potential for lightning strikes, range and forest fires, strong winds, hail, heavy precipitation and flash flooding.

c. Precipitation in the area varies dramatically from season to season and from year to year. The average annual precipitation from 1956 to present is 14.91 inches. Measurable precipitation can occur during every month of the year, but is most likely to occur in July and August. Fifty to 75 percent of the annual precipitation recorded typically falls during these two months. From November to late April, depending on the temperature, snow showers can occur with accumulations frequent above 5,000 feet.

d. Wind direction and speed are greatly influenced by seasonal, diurnal and orographic effects. Typically winds in the morning are from the southeast at 5 to 10 knots shifting to the southwest at 8 to 16 with occasional gusts to 24 knots. During the fall, winter, and spring strong wind events with winds from the south to southwest at 20 to 30 with gusts in excess of 50 knots and a duration of several hours to several days can occur 10 to 25 percent of the time. During the summer strong down burst winds associated with the thunderstorms with instantaneous gusts in excess of 60 knots can occur with little warning.

e. Temperatures in the local area are moderate with the extremes ranging from a high of 107 to a low of 9 degrees. Average summertime temperatures range from highs in the upper eighties to lows in the mid-sixties. Average wintertime temperatures range from highs in the low sixties to lows in the mid thirties. The average temperature for the year is 62 degrees.

f. Fort Huachuca is an excellent location for a wide variety of test activities with environmental considerations. Most of the moderate to severe weather conditions discussed above are of relatively short duration, and with proper planning, mission delays can be held to a minimum all year round.

3.1.H.2 Are there features of the local geology or soil conditions that enhance or inhibit any types of tests?

Yes, refer to para 3.1.H.2, Part V-4.

3.1.H.3 Do you have to go to other geographical locations to satisfy test requirements? If yes, explain. If yes, provide as a percent of overall workload per year for the last 8 years.

No.

3.1.H.4 Number of days per year with average temperature below 32 degrees F? Between 32 and 95 degrees F? Above 95 degrees F?

All 365 days in an average year have a daily average temperature between 32 and 95 degrees fahrenheit. During the entire 35 year period covered by our climatological database, approximately 10 days had daily averages below 32 degrees which equates to one such day every 3-4 years. The highest daily average temperature during the same period has been 90 degrees which occurs only once or twice each year. The hottest weather at this location is accompanied by low relative humidity which results in good night times cooling after a hot day.

3.1.H.5. Number of days per year with average relative humidity below 30%? Between 30 and 80%? Above 80%

The average number of days per year with an average relative humidity below 30% is 150. Humidity can occasionally fall below 10% during these days. An average of 194 days per year have average relative humidities between 30% and 80%. Finally, 21 days per year, on average, have an average relative humidity above 80%.

3.1.H.6 Number of test missions per year (85 - 93) canceled due to weather?

Most weather related test mission cancellations are the result of weather conditions at locations other than Fort Huachuca. During the period of review, 24 missions (mostly UAV missions) were canceled due to adverse weather conditions. Generally, most projects will go into a hold until the adverse conditions subside or they can be scheduled around expected adverse weather conditions without having to cancel.

3.1.H.7 Number of test days per year (85 - 93) canceled due to weather?

During the period of review, there have been no full 24 hour days during which testing could not be conducted due to adverse weather conditions. Local forecasting capability exists that allows weather sensitive test operations to be scheduled around periods of expected adverse weather conditions.

3.1.H.8 Number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

Based upon the 35 year climatological database, there are no full 24 hour periods during which the visibility drops below 3 miles. Restricted visibility occurs most often during periods of showery types of precipitation which occur primarily during the winter and summer rainy seasons. Occurrences of fog occur primarily during the winter and are of short duration. Based upon climatology, 2.3% or 197.6 hours has visibility below 3 miles in an average year. This equates to a total of 8.2 days. Visibility of 1-3 miles occurs, on average, a total of 109.6 hours while visibility less than one mile occurs a total of 88.1 hours a year or about 1% of the time on average. December is the month with the highest number of occurrences with 29.8 hours with visibility of 1-3 miles and 14.9 hours with visibility

below 1 mile on average. Visibility below 3 miles has never been reported in June.

3.1.H.9 What is the average number of flying days available per year for flight tests? Provide historical average from the past eight years.

The average number of flying days available per year based solely upon weather conditions during the period of review is 353. This equates to 96.7% of all days in a year being available. The primary weather condition that may make a day unavailable is strong wind since all other adverse weather conditions are intermittent in nature.

3.1.H.10 What percentage of the time are your test operations restricted due to weather?

Weather conditions that restrict test operations are high winds, thunderstorms, and low visibility. High winds occur, on average, 10% of all days of the year and last about 8 hours per day for 3.3% of the total number of hours in a year. Thunderstorms occur on 60 days a year with an average duration of 2 hours for 1.4% of the hours in a year. Low visibility, as indicated above, occur 2.3% of the total number of hours in a year. This gives a total of 7% of all hours in a year where test operations would be restricted by weather. Heavy show is very rare occurring much less the time in a given year.

3.2 AIR VEHICLES

3.2.A Supersonic Airspace

3.2.A.1 Do Supersonic Corridors or areas exist?

Yes. Two low level, high speed jet visual route VR-260 and VR-263.

3.2.A.2 Where are they located relative to the airfield?

VR-260 is located to the north and cuts across the north west corner of R-2303B below the airspace floor. VR-263 is located to the south and cuts across the south east and south west corners of R-2303B below the airspace floor.

3.2.A.3 At what altitude (upper and lower altitude)?

VR-260 is 100 ft AGL to 7000 ft AGL and VR-263 is 100 ft AGL to 8500 ft MSL.

3.2.A.4 Are they over land or water? What size and shape (length and width)?

All over land. Visual flight routes only.

3.2.A.5 Are there restrictions you must observe to use this space? If yes, explain.

No known current or projected need exists to use these areas as they are below our local airspace.

SENSITIVE/CLOSE HOLD

Errata Sheet # 5 of 10

1. This Errata Sheet applies to the following EPG R&D Facility/Capability Data Submission:

   Range Operations Capabilities
   Environmental Test Facility
   Instrumented Test Range
   Enectromagnetic Environmental Test Facility
   EMI/TEMPEST Test Capabilities
   Intelligence & Electronic Warfare
   Avionics/Global Positioning Systems
   General Electronic Test Capability

2. Changes to original submission are shown in italics.

3.2.A.6 What is the maximum number of simultaneous users?

Number of simultaneous users is limited by USAF or other military department rules on supersonic flight in restricted corridors. No specific limitation on the number of simultaneous users is available to EPG.

3.2.B **Airfield and Facility Characteristics**

3.2.B.1 Provide a brief description of your airfield and support facilities.

Libby Army Airfield is a Joint Use Airfield *owned by Ft. Huachuca (TRADOC)* and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be all concrete when completed (FY95) and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and belongs to Ft. Huachuca.

3.2.A.6 What is the maximum number of simultaneous users? see prev page

Unknown.

3.2.B **Airfield and Facility Characteristics**

3.2.B.1 Provide a brief description of your airfield and support facilities. see prev page

Libby Army Airfield is a Joint Use Airfield and is not a TECOM asset. Libby Field has the following: Three runways, 02/20 4300 feet, 29/11 5365 feet, and 26/08 12,001 feet; field elevation 4665 feet MSL; overrun lengths 02/20 200 feet, 29/11 200 feet, 26/08 1000 feet; landing aids are a NDB, TACAN, VOR and a PAR; 26/08 has an arresting cable at both ends; ramp area is approximately 460,000 square feet; ramp construction is a combination of concrete/asphalt; 02/20 and 29/11 is asphalt; 26/08 will be al concrete when completed and will accommodate any aircraft; hangar space is limited to about 30,000 square feet and does not belong to the Proving Ground.

3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

Hubbard assault strip is 5 miles from Libby and could be used for an emergency landing.

3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

Libby Field is situated within R-2303B.

3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

Libby Field is unique because of length, position relative to the restricted airspace and the weather found in southern Arizona.

3.2.B.5 Is there a size, weight, maintenance, or mission limitation that would affect test operations? If yes, describe.

No.

3.2.B.6 Including hangers an ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise Missiles?

Excluding hangars, enough ramp area exists to support approximately 20 fighter size aircraft 10 multi-engine aircraft or 25 rotary wing aircraft.

3.2.C. **Test Operations**

3.2.C.1 What types of air vehicle testing can be supported? Describe?

Unmanned Air Vehicles, Space Shuttle, SR-71, Rotary Wing, and some Fixed Wing.

3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

Yes.

3.2.C.3 What kinds, numbers of aircraft and mix of same can be supported (manned and unmanned)?

Any type of unmanned vehicle can be supported. Currently, only the aircraft listed in 3.2.C.8 below can be supported.

3.2.C.4 Does UAV and or rotary wing operations pose any limitations on other types of missions? If yes, explain.

No.

3.2.C.5 What sorts of missions can be flown within local airspace?

Unmanned Aerial Vehicles, Heavy Artillery, Eye Hazard Laser and other Airborne Operations. The local airspace has, in the past, supported concurrent users.

3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

Three.

3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

Three.

3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

Five each OV-1D, two each UH-1, three each EH-60, four each C-12 aircraft are owned by the Intelligence Center and Fort Huachuca, two each UH-1 and two O-2A aircraft are owned by USAEPG. Four each C-12 aircraft are owned by CASSO.

3.3 ELECTRONIC COMBAT

3.3.A Threat Environment

3.3.A.1 What is the number of threats simulated?

a. USAEPG's in-house capabilities include both simulated and actual threat equipments. In addition, we employ both actual threat equipment and simulators from outside resources to conduct our test programs. The outside test activities will provide detailed responses on their threat capabilities and we expect them to list USAEPG as a customer of their resources. Following are the numbers of threats simulated by in-house and external resources; as well as the numbers of actual threat equipments employed both from in-house and other test activities.

b. Number of simulated threats: 197.

(1) EMETF: 159.

(a) MODELING & SIMULATION CAPABILITY: At present, the Modeling & Simulation Capability has two simulated threat forces modeled. These threat models are contained in a Simulated Tactical Deployment (STD). A STD is a computerized representation of the C-E operators and equipment of a tactically deployed military force (usually a corps) and is based on a US Army Training and Doctrine Command (TRADOC) combat scenario. The STD is a primary element in conducting assessments of the anticipated performance of US Army Communications-Electronic (C-E) equipment in their intended operational environments. To accomplish its electromagnetic compatibility and electromagnetic vulnerability (EMC/EMV) performance evaluation mission in a cost-effective manner, USAEPG builds large-scale STD's of US Army tactical battlefields, and has various STD's on hand. An STD contains:

1 Detailed geographical locations and technical descriptions for all C-E equipment supporting the tactical combat force described in the scenario.

2 The total tactical laydown of both friendly and enemy forces.

3 The equipment technical performance characteristics, netting, frequency assignments, and unit combat postures defined by the scenario.

4 Enemy signals intelligence/electronic warfare (SIGINT/EW) assets are specifically located and targeted in accordance with an Army-approved threat for the time frame being simulated.

(b) HARDWARE-IN-THE-LOOP CAPABILITY: The SLF currently has a library of 113 non-communications emitters and 40 communications emitters.

(c) MEASUREMENT CAPABILITY: We presently have 6 palletized jammers that can be operated in ground or airborne modes.

(2) Emitter Vans (ITR): 19. The emitter vans are normally equipped with RF-280 radios which are surrogate threat equipments for a number of threat communications radios. They can also be used with signal generators, power amplifiers, and other source equipments to provide additional signal sources.

(3) IR false target - 1 IR simulators.

(4) Outside simulated threat resources employed in USAEPG testing - 25.

(a) Eglin AFB - 4 IR & 1 Radar simulators.

(b) China Lake - 10 Radar simulators.

(c) Operational Test Support Activity (OTSA) - 3 Radar simulators.

c. Number of actual threat emitters: 155.

(1) Threat radios (ITR) - 115 total in inventory (operational condition of some remains unknown at this time).

(2) Outside threat resources employed in USAEPG testing - 34.

(a) OTSA - 4 Radar.

(b) WSMR - 10 IR.

(c) Elgin AFB - 2 IR.

(4) Holloman AFB - 20 IR.

(5) China Lake - 4 Radar.

3.3.A.2 How many simultaneous threats can be simulated? What type? What is the maximum signal density? Average density? Power level? What band? Radiated or injected?

a. MODELING & SIMULATION CAPABILITY:

(1) We have the capability to model any number of simultaneous threats in our STD's and computer models. The current STD's used for operational tasks are the Europe VI STD and Southwest Asia 4 (SWA-4) STD.

(2) The Europe VI STD is based on a TRADOC scenario depicting mid-intensity conflict in Central Europe in 1992. The Europe VI STD contains the tactical disposition of C-E systems of a US Army corps organized as an element of the southern Army Group (SOUTHAG) in Western Europe. A US tactical air force is included in the STD. The enemy forces opposing the US corps are two armies and an appropriate slice from two Fronts.

(3) The Southwest Asia 4 STD is based on a TRADOC scenario depicting midintensity conflict in southwest Asia in 1994. The STD contains the tactical disposition of C-E systems of a US Army corps organized in three divisions, without Air Force support. The enemy forces opposing the US corps are a provisional Iraqi army organized into two corps. SWA-4 was finished in 1993 and is currently used for operational tasks.

b. HARDWARE-IN-THE-LOOP CAPABILITY:

Type: Up to 1023 simultaneous non-communications threat emitters and 32 simultaneous communications threat emitters.

c. MEASUREMENT CAPABILITY: We can simulate up to 6 simultaneous jamming threats with the equipment we have at present. The types of jamming signals we generate are usually associated with communications networks. The maximum signal density is six distinct jamming signals, one each from each of our 6 jamming platforms.

d. OPEN AIR RANGE: Testing can theoretically accommodate an infinite number of simultaneous threat signals. Practically it is limited by: the total number of appropriate type threat simulator/emitter that can be obtained for the test window; restrictions, if any, on free space transmission of the threat signals; and specific deployment/sitting requirements for the test program. The number of simultaneous threats employed depends on many variables, including: the specific range area, deployment, or facility used; the system capabilities being assessed; and the objectives of the testing program. In technical testing, each threat is normally tested individually first, to ensure that the item under test recognizes the threat and responds properly. The second step is generally to assess the items performance capabilities in increasingly dense threat environments. This approach is employed in both ground based and airborne IEW equipment, as well as with Aviation Electronic Combat equipment. The preferred methodology is to employ the SLF to assess response to individual threats in a closed loop or short range proximity configuration. After establishing the baseline, the item is then subjected to specific sets of threats under progressively increasing signal densities. A final step can also be included. It consists of conducting simulated tactical missions under near realistic conditions (pseudo operational testing) for further confirmation of the test results.

What type (e.g. AI, AAA, SAM)?

a. EMETF: The types of threats simulated are mostly threats to communications systems, i.e., both ground and air based jamming platforms, although there are some enemy Direction Finding (DF) and intelligence gathering sensors modeled as well.
The hardware in the loop produces both non-communications threats and communications threats.

b. Open Air Range: Threats simulated include a wide range of tactical ground radio and radar, as well as, AAA, and SAM.

What is the maximum signal density?

a. EMETF:

(1) Non-communications emitters: 4 Megapulses/sec.

(2) Communications Emitters: 32 Emitters/sec.

b. Open Air range testing signal density is usually a function of the availability of appropriate assets for each specific application and generally is determined as a result of cost-value trade off. Theoretically there is no maximum that can be accommodated.

Average density?

a. EMETF: The density of enemy jamming, DF, and intelligence gathering assets is determined by the US Army Training and Doctrine Command (TRADOC) combat scenario for a tactically deployed military force. The average density is normally a function of the scenario or testing procedure for each specific task and is adjustable to meet testing needs.

b. Open Air Range testing is capable of virtually any average density needed for each specific test program.

What power level? What band?

a. EMETF:

(1) The power levels and frequency parameters associated with enemy jamming assets is determined by the US Army Training and Doctrine Command (TRADOC) combat scenario for a tactically deployed military force.

(a) Non-communications emitters:

Injected:	-80 to +10 dBm
Radiated:	-70 to +20 dBm

(b) Communications emitters: -130 to +13 dBm

(2) We can simulate RF communications emitters in the 500 kHz to 500 MHz frequency band and non-communications emitters in the 500 MHz to 18 GHz frequency band.

(3) Power levels for our jammers range from effective radiated powers of about 250 watts to over 15,000 watts. The frequency bands into which we can inject jamming signals range from about 30 MHz to about 15 GHz.

b. Open Air Range testing can accommodate threat signal of almost any frequency and power. We coordinate closely with the area frequency coordinator and develop alternatives for sitting, hours of operation, and other factors to achieve non-interference testing. The only exception is when the frequency or power requirements are inflexible and are incompatible with another authorized user, such as air traffic control.

Radiated or injected?

a. EMETF:

(1) In the computer models, all simulated threats are assumed to be radiated.

(2) Hardware in the loop normal mode of operation is to inject the RF signals into the system under test's antenna.

b. Open Air Range: All signals are radiated.

3.3.A.3 Are the threat software models and simulators validated? If yes, by whom?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY:

(a) Yes. The primary source of data is the Initial Network (INNET) working group. This group was established to assist FSTC in identifying and assessing the accuracy of data to be inserted into the data base. This working group is composed of the following organizations: FSTC, DIA, DCSINT, MSIC ITAC, and FTD.

(b) The enemy deployment is developed by using a task organization derived from the INNET Handbook which was written and published by USAEPG for the FSTC. The types and numbers of radio frequency (RF) equipment are obtained from the DIA and Army-validated INNET data base which is maintained at the USAEPG for FSTC.

(c) The INNET data base is developed from organizational drawings reflecting vehicles, RF components, and communications netting schematics provided by FSTC. The INNET data are converted to formats necessary for automatic computer

processing at USAEPG and then are returned to FSTC for review to ensure that the resulting product accurately reflects the INNET working group intent and input. After FSTC validation, the material is forwarded to DA for approval and then to DIA for final validation.

(d) Because of the importance of producing credible vulnerability assessments of systems, special preparation and validation procedures are used for the SIGINT/EW portion of the STD. Initially, the System Threat Assessment Report (STAR) is reviewed for details of the specific threat to a system and/or to determine whether special targeting is required. The US Army Signal Center publishes the STAR for all communications systems. For non-communications systems (e.g., radars), the proponent center provides the STAR. To ensure proper representation of the SIGINT/EW forces in the STD, a complete and separate threat data base of threat SIGINT/ EW capabilities is maintained at USAEPG. Further, a special staff of EW analysts prepares that portion of the STD. All threat intercept, direction finding (DF), and jamming equipment is deployed in accordance with the STAR and threat doctrine, in the correct numbers, and with the proper technical characteristics.

(e) After initial deployment, and before use for any evaluations, approval of the threat laydown for intercept, DF, and jamming systems is obtained from appropriate authorities such as DCSINT DA, TRADOC, AMC, FSTC, and the US Army Signal Center. This process can take several forms, such as onsite visits, offsite briefings, teleconferencing, etc. This review and validation process culminates in a letter of validation from DCSINT validating the STD for use by USAEPG to conduct the required EMV/EMV analyses.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: The SLF threat emitters use software simulations to control the output of hardware.(i.e. signal generators) Our simulations are not validated; however, we are in the process of having our threat signals validated by TEMA.

b. Validation of outside simulator/threat resources employed is the responsibility of the owning activities who will report separately the details of their validations.

3.3.A.4 Do you conduct open loop testing? Reactive? Closed loop?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: No

(2) HARDWARE-IN-THE-LOOP CAPABILITY: Most of our tests are closed link (i.e. non-radiating) open loop tests. Our scenarios are scripted events and are non-reactive. We do not have a closed loop capability.
MEASUREMENT CAPABILITY: Yes, we can conduct open loop testing, but not reactive or closed loop testing.

b. Open Air Range testing is virtually all open loop and may be reactive depending on the type of test and the threat or countermeasure being employed.

3.3.A.5 What is the threat representation (fidelity) and density?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY:

(a) We take special care to ensure that it has maximum validity and that it is based on the best and latest intelligence estimates. The types and numbers of radio frequency (RF) equipment are obtained from the DIA and Army-validated INNET data base which is maintained at the USAEPG for FSTC. The INNET data are converted to formats necessary for automatic computer processing at USAEPG and then are returned to FSTC for review to ensure that the resulting product accurately reflects the INNET working group intent and input. After FSTC validation, the material is forwarded to DA for approval and then to DIA for final validation. Because of the importance of producing credible vulnerability assessments of systems, special preparation and validation procedures are used for the SIGINT/EW portion of the STD. To ensure proper representation of the SIGINT/ EW forces in the STD, a complete and separate threat data base of threat SIGINT/ EW capabilities is maintained at USAEPG. Further, a special staff of EW analysts prepares that portion of the STD. All threat intercept, direction finding (DF), and jamming equipment is deployed in accordance with threat doctrine, in the correct numbers, and with the proper technical characteristics.

(b) After initial deployment, and before use for any evaluations, approval of the threat laydown for intercept, DF, and jamming systems is obtained from appropriate authorities such as DA/DCSINT, TRADOC, AMC, FSTC, and the US Army Signal Center. This review and validation process culminates in a letter of validation from DCSINT validating the STD for use by USAEPG to conduct the required EMV/EMV analyses.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: The SLF represents the RF signature of each threat emitter based on data in various intelligence data bases. The Non-communications Threat Simulator generates high fidelity threats with complex pri structures, intra and interpulse frequency, amplitude and modulations. Complex transmit and receive antenna patterns are also simulated. The Communications threat Simulator generates high fidelity signals with demodulatable baseband voice and data. We construct each signal to the fidelity desired by the customer.

(3) MEASUREMENT CAPABILITY: We are able to replicate both ground-based and heliborne enemy jamming assets.

b. Open air range threat representation varies depending upon the specific simulators and actual threat equipment employed in each test program. The simulators/treat hardware are mobile/transportable and not set-up in fixed configurations. When a test program

employees only validated simulators and actual treat equipment, the threat representation closely approaches 100%. At times, surrogate emitters are also employed which can have less fidelity. How well they represent the threat is a function of both the threat and the surrogate emitters. The fidelity of their threat representation can only be determined on a case by case application basis. Likewise, the density of threat replication varies for individual test program since the requirements change and the emitters are moveable rather than fixed sites.

3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? If yes, describe.

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY:

(a) Land Threats: Yes. At present, the Modeling & Simulation Capability has two simulated threat forces modeled. These threat models are contained in a Simulated Tactical Deployment (STD). A STD is a computerized representation of the C-E operators and equipment of a tactically deployed military force (usually a corps) and is based on a US Army Training and Doctrine Command (TRADOC) combat scenario. The STD is a primary element in conducting assessments of the anticipated performance of US Army Communications-Electronic (C-E) equipment in their intended operational environments. To accomplish its electromagnetic compatibility and electromagnetic vulnerability (EMC/EMV) performance evaluation mission in a cost-effective manner, USAEPG builds large-scale STD's of US Army tactical battlefields, and has various STD's on hand.

(b) An STD contains:

1 Detailed geographical locations and technical descriptions for all C-E equipment supporting the tactical combat force described in the scenario.

2 The total tactical laydown of both friendly and enemy forces.

3 The equipment technical performance characteristics, netting, frequency assignments, and unit combat postures defined by the scenario.

4 Enemy signals intelligence/electronic warfare (SIGINT/EW) assets are specifically located and targeted in accordance with an Army-approved threat for the time frame being simulated.

Sea Threats: No

a. HARDWARE-IN-THE-LOOP CAPABILITY: Yes. The SLF represents the RF signature of each threat emitter based on data in various intelligence data bases. We construct the signal to the fidelity desired by the customer.

b. MEASUREMENT CAPABILITY: We are capable of simulating land threats by using our ground-based jammer assets. Ideally, we could emulate some sea-based jammers if our jamming platforms were placed on ships, but we have never done this in the past.

c. Open Air Range testing can simulate land and airborne threats, but not sea threats or combined land and sea threats.

3.3.A.7 What geographic dispersion can be simulated?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: Usually our models and STD's are limited to an Army corps deployment, which is about 100 km wide by 150 km deep, and a corresponding threat forces deployment, which is also about 100 km wide by 150 km. deep. The total land area encompassed by a typical STD is about 100 km wide by 300 km deep.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: None.

(3) MEASUREMENT CAPABILITY: Our jamming platforms are usually deployed over a division area, which is about 50 km wide by 50 km deep. Above those distances, our jammers don't radiate enough power to maintain adequate levels of jamming signal in the test area.

b. Open air range testing geographic dispersion is actual physical deployment rather than simulation. Depending upon the type equipment and test scenario, the geographic dispersion can be determined by terrain, line-of-sight, and similar factors. USAEPG has more than 1200 surveyed sites available for use, both within the confines of Ft. Huachuca and in the surrounding southern Arizona area. USAEPG has access to other locations or facilities through out Arizona and the southwest, which can be employed for test programs.

3.3.A.7.A Threat lay down?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: The threat laydown is typically about one-half of the overall STD area. The threat laydown is therefore about 100 km wide by 150 km deep.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: Threat laydowns are scenario dependent. We develop test scenarios based on customer's requirements.

(3) MEASUREMENT CAPABILITY: Our jamming platforms are usually deployed over a division area, which is about 50 km wide by 50 km deep. Above those distances, our jammers don't radiate enough power to maintain adequate levels of jamming signal in the test area.

b. Open air range deployments have been performed that replicate adjacent Brigades and a full Division front. USAEPG has a large number of available surveyed sites both on and off post. Ground deployment of the threat and the test items can be adjusted to obtain representative configurations of numerous different deployments. In the case of airborne equipments, tests have been conducted representing threats as deep as opposing CORPS/Army areas.

3.3.A.7.B Representative distance?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: Representative distances are determined by the particular type of threat equipment under consideration; however, all distances are contained in the threat area, which is about 100 km wide by 150 km deep.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: Range is limited by terrain blockage and over-the-horizon limits based on transmit and receive antenna heights.

(3) MEASUREMENT CAPABILITY: Our jamming platforms are usually deployed over a division area, which is about 50 km wide by 50 km deep. Above those distances, our jammers don't radiate enough power to maintain adequate levels of jamming signal in the test area.

b. Open air ranges deployments have been achieved for ground configurations of at least 30 Km in width with the threats ranging out to 30 Km in depth. In the case of airborne test items employed against ground threats, distances have been achieved in excess of 70 miles (115Km).

3.3.A.8 Are the threats moveable within a test scenario? Relocateable to a new scenario?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: Yes. We can simulate platform movement of emitters during scenario execution.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: Yes. We can simulate independent three dimensional movement of each platform containing emitters during scenario execution.

(3) MEASUREMENT CAPABILITY: Yes, our jamming platforms are designed to be carried by ground vehicles and helicopters.

b. Open air range tests can employ some threats in a mobile operating condition but generally do not do so. Most of the threats; however, are readily moveable and can easily be relocated physically. Their operation (transmit times, durations, modes, ets) are controllable and subject to change both during and between scenarios.

3.3.A.9 Is the facility interlinked with off-site threats? If yes, how are you linked?

No.

3.3.A.10 Is there a limit on simultaneous users? If no, explain.

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: No. Theoretically, the number of simultaneous users who could execute our computer models is infinite; however, practical limitations on computer resources (e.g., workstations, software licenses, etc.) impose a limit on the process.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: Yes. Depending on the test scenario, the SLF could conduct two simultaneous tests. One on the Non-communications threat simulator and one on the communications threat simulator. If both simulators were required to support the same test scenario, then only one test could be conducted.

(3) MEASUREMENT CAPABILITY: Yes, the limit on simultaneous users is 6.

b. Open Air Range testing theoretically has no limit on the number of simultaneous users since the threat signals are radiated and could be picked up and responded to by many users. Practically, each test scenario is tailored to a specific application and is not likely to be very useful to more than one test item/program.

3.3.B **Test Article Support**

3.3.B.1 Is there a size, weight, or other limitation on test operations the facility can support? If yes, explain and describe measures needed to remove them.

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: No. Computer simulations can accommodate any size threat platform.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: Yes. We can not support large fixed wing aircraft because the building in which the SLF is located does not have access to the airfield. There are no immediate plans to remove this restriction.

(3) MEASUREMENT CAPABILITY: Yes, the jamming platforms weigh about a ton and require a vehicle or airborne platform capable of carrying that much additional weight. We have miniaturized the jamming platforms to the maximum extent possible. To get them any more compact would require extraordinary amounts of very expensive, custom electronics components and an impractically large amount of funding.

b. EMI/TEMPEST Facility: Yes. We can not support fixed wing aircraft because the building in which the lab is located does not have access to the airfield. There is no immediate plans to remove this limitation.

c. Open air range has no specific limitations which can be applied all inclusively. A unique limitation can be encountered in special cases based on specific sitting or project requirements. Since each case is unique (e.g. 60 ton track vehicle transported to site on lowboy because it can not be driven) and accommodated in the best manner possible, there are no absolute limits. Measures are applied to remove any limitation on a case-by-case basis.

3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: Theoretically, the number of simultaneous countermeasures we could evaluate is infinite; however, practical limitations on computer execution speed and ability to analyze and interpret output data impose a limit on the process.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: We do not have the capability to evaluate interactive countermeasures.

(3) MEASUREMENT CAPABILITY: The number of simultaneous countermeasures possible for evaluation is six.

b. EMI/TEMPEST FACILITY: NA

c. Open air range testing is capable of accommodating the use of simultaneous countermeasures, depending on the types of countermeasures, environmental limitations, or other hazards involved. As with virtually all other open range testing, the ability to conduct such an evaluation is determined on a case by case basis and there is no absolute number which can be performed simultaneously. Instrumentation and the accuracy of the data required to properly assess effectiveness of multiple types of simultaneous countermeasures is extremely difficult to achieve. As a general rule, technical testing evaluates each countermeasure individually for it's effectiveness against a specific threat.

3.3.B.3 What range of spectra can be tested and evaluated?

a. EMETF:

(1) MODELING & SIMULATION CAPABILITY: We can simulate, with varying degrees of accuracy inherent in different engineering models, any frequency from LF to optical.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: We can simulate RF communications emitters in the 500 kHz to 500 MHz frequency band and non-communications emitters in the 500 MHz to 18 GHz frequency band.

(3) MEASUREMENT CAPABILITY: We can simulate frequency ranges from 30 MHz to 15 GHz.

b. EMI/TEMPEST FACILITY:

(1) Emissions testing 20 Hz to 40 GHz.

(2) Radiated/susceptibility testing DC to 40 GHz.

c. Open air range testing can support testing of the complete electromagnetic spectrum. Limitations do exist in the range of currently available off-the-shelf instrumentation and with authorization for transmission of specific frequencies/bands which are designated for other applications. We are generally able to accommodate (via work arounds such as sitting, time of use, or power reductions) cases where test operations could cause interference with other users.

3.3.B.4 What are the available spectra?

a. EMETF:

(1) MODELING & SIMULATION Capability: We can simulate, with varying degrees of accuracy inherent in different engineering models, any frequency from LF to optical.

(2) HARDWARE-IN-THE-LOOP CAPABILITY: We have unlimited spectrum availability with our operating frequency bands.

(3) MEASUREMENT CAPABILITY: Through close coordination with the DoD Area Frequency Coordinator located here at Fort Huachuca, we can usually obtain adequate frequency clearances in our jammer's range of operation to satisfy any test requirements.

b. EMI/TEMPEST FACILITY: Same as 3.3.B.3 above.

c. Open air range testing can support testing across the complete spectra, as discussed in 3.3.B.3.b above with the limitations and accommodations described.

3.3.B.5 Do you have a scene generation capability? If yes, describe.

No.

3.4 ARMAMENTS / WEAPONS

Our tests of armaments and weapons systems generally consist of antenna, performance, environmental, and EM tests of electronic systems. The information requested in this section does not apply.

GENERAL INFORMATION

FACILITY / CAPABILITY TITLE: General Electronic Test Capability

ORIGIN DATE: 25 May 1994

Service: U.S. Army **Organization / Activity:** USA Electronic Proving Ground **Location:** Ft. Huachuca, AZ

T&E Functional Area: Other

UIC: W04YAA

T&E Test Facility Category: DMS/MF/HITL/ISTF/OAR

	T&E	S&T	DE	NE	T&D	OTHER
Percentage Use:	_100_	____	____	____	____	_100_ = 100
Breakout by T&E Functional Area (%)						
Air Vehicles	__1__	____	____	____	____	____
Armament / Weapons	__1__	____	____	____	____	____
Electronic Combat	__5__	____	____	____	____	____
Other	_93__	____	____	____	____	____

Note: Total in Breakout must equal "Percentage Use" line entry.

TECHNICAL INFORMATION

FACILITY / CAPABILITY TITLE: General Electronic Test Capability

Facility Description; including mission statement: As the Army's principal center for testing tactical electronics systems, USAEPG plans,conducts and reports technical testing of assigned systems while maintaining extensive, state-of-the-art instrumentation, and test facilities at Fort Huachuca, AZ. As members of supported PEO/PM acquisition teams, USAEPG test officers maintain a customer focus while assuring objective and responsible testing. Specific mission areas include:

A. To plan, conduct, analyze, and report the results of developmental-type tests of communications, command, and control; optical/electro-optical, intelligence, electronic warfare, avionics systems and other tests and studies as directed by the Commanding General, USATECOM.

B. To establish, operate and maintain the capability to perform electromagnetic compatibility and vulnerability analyses of electronic equipment and systems of the tactical forces; and to test functional performance and intraoperability/interoperability of tactical automated communications, command and control, and intelligence equipment and systems; to include associated processors, programs, and documentation.

C. To provide position, location, and tracking data on aerial vehicles including telemetry as required. To test optical and electro-optical equipment and systems and generate realistic friendly/enemy electromagnetic battlefield environments.

D. To conduct TEMPEST tests, electronic security, electronic countermeasures, and electronic counter-countermeasures testing of equipment/systems and procedures. To evaluate for exploitation comparable foreign equipment/systems and test other types of equipment/systems as directed.

E. To develop and maintain test instrumentation, test facilities, test methodology, and test expertise necessary to support Army materiel development.

F. To plan, conduct, analyze, and report the results of tests on foreign weapons and materiel in support of DoD, Department of the Army (DA), and USAMC.

G. To provide military personnel to install, operate, and maintain test and test support equipment in the conduct and support of developmental and operational testing in accordance with customer requirements.

Interconnectivity / Multi-Use of T&E Facility: Subfacilities are not interconnected; however, most are shared by various test/projects.

Type of Tests Supported: Technical, operational, investigative, developmental, customer support, and others as required.

Summary of Technical Capabilities: Subfacilities are equipped and staffed with qualified test and evaluation personnel and support personnel with specialized skills. These personnel are capable of planning, conducting, reporting, and supporting all types of tests and evaluation equipment.

Keywords:

"FORM2" **TAB:** **page:**

ADDITIONAL INFORMATION

FACILITY / CAPABILITY TITLE: General Electronic Test Capability

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	26	27	14	14	14	14	14
Enlisted	299	302	250	250	250	250	250
Civilian	132	111.5	95	90	86	81	77
Contractor	116	72	21	1	3	2	3
Total	573	512.5	380	355	353	347	344

Total Square Footage: 173,321

Test Area Square Footage: 69,903

Office Space Square Footage: 35,500

Tonnage of Equipment: Unkown

Volume of Equipment (cu.ft.): Unknown

Annual Maintenance Cost: $30,000

Estimated Moving Cost: Unknown

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
	293k	650k	350k	250k		
	110k	150k		200k		
	35k					

"FORM3" TAB: page:

FACILITY CONDITION

FACILITY / CAPABILITY TITLE: General Electronic Test Capability

---

AGE: 5-78 yrs **REPLACEMENT VALUE:** $17,332,100

MAINTENANCE & REPAIR BACKLOG: None

DATE OF LAST UPGRADE: 27 January 1994

NATURE OF LAST UPGRADE: Construction of a 4,000 sq ft facility to house heavy equipment for maintenance and to combine contract and government motor pools in one location at a cost of $157.021

MAJOR UPGRADES PROGRAMMED

1. **UPGRADE TITLE:** A 30,000 sq ft addition to the CETEC facility.
   TOTAL PROGRAMMED AMOUNT: Cost estimate 4.6 million
   SUMMARY DESCRIPTION:

2. **UPGRADE TITLE:**
   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

SENSITIVE/CLOSE HOLD
V-8-1-5
SENSITIVE/CLOSE HOLD

HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: General Electronic Test Capability

T&E FUNCT. AREA		FISCAL YEAR 86	87	88	89	90	91
AIR VEHICLES	DIRECT LABOR	142,080	43,280	13,210	31,933	47,642	86,078
	TEST HOURS						
	MISSIONS						
ELECT. COMBAT	DIRECT LABOR	63,422	67,735	79,650	25,999	97,680	102,169
	TEST HOURS						
	MISSIONS						
ARMNT/WEAPONS	DIRECT LABOR	488	---	---	1,393	296	6,066
	TEST HOURS						
	MISSIONS						
OTHER T&E	DIRECT LABOR	352935	433437	708885	584595	488794	400546
	TEST HOURS						
	MISSIONS						
OTHER	DIRECT LABOR	195096	280613	130002	79934	39118	42146
	TEST HOURS						
	MISSIONS						

"FORM5-0" TAB: page:

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HISTORICAL WORKLOAD

FACILITY / CAPABILITY TITLE: General Electronic Test Capability

T&E FUNCT. AREA		FISCAL YEAR 92	93	94	95	96	97
AIR VEHICLES	DIRECT LABOR						
	TEST HOURS	76,796	4,912				
	MISSIONS						
ELECT. COMBAT	DIRECT LABOR						
	TEST HOURS	81,934	30,370				
	MISSIONS						
ARMNT/WEAPONS	DIRECT LABOR						
	TEST HOURS	2,499	3,147				
	MISSIONS						
OTHER T&E	DIRECT LABOR						
	TEST HOURS	421699	529813				
	MISSIONS						
OTHER	DIRECT LABOR						
	TEST HOURS	26101	26108				
	MISSIONS						

"FORM5-1"

TAB: page:

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DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY / CAPABILITY TITLE: General Electronic Test Capability

ANNUAL HOURS OF DOWNTIME	1	242
AVERAGE DOWNTIME PER DAY (line 1 / 365)	2	.66
AVERAGE HOURS AVAILABLE PER DAY (24 / line 2)	3	23.34

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST FACILITY HOUR	WORKLOAD PER FACILITY HOUR
4	5	6	7
Typical	69	24.9	1,719
		Total Sum	

UNCONSTRAINED CAPACITY PER DAY (line 3 * Total Sum)

8 40,121

ANNUAL UNCONSTRAINED CAPACITY

9 14,644,333

"FORM6" TAB: page:

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM HAWK	23801	0	86	0	0	90	90	90	90
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
UAV	35889	1883	0	0	0	50	50	50	50
PM RADAR	62120	0	9	0	0	25	25	25	25
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
PM UAV	62303	0	110	37	20	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
BRDEC	62785	0	7	0	5	15	15	15	15
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	73	0	0	0	0	0	0
MINE WARFARE	63619	398	0	0	0	0	0	0	0
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
FLD SPT ACT - FT HOOD	65712	0	3555	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	88	84	31	7
Subtotal RDTE		16397	11145	7557	5992	9340	9377	9304	8242
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
HAWK GSE	C28100	290	0	0	0	263	257	243	235
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PM AAH	112000	0	1	0	0	0	0	0	0
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
PM UAV	523200	0	19	122	322	263	257	243	234
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
OTHER PROCUREMENT	VARIOUS	0	0	9	20	430	569	654	717
Subtotal PROCUREMENT		3027	8862	5966	4996	2625	2827	2792	2833
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
MICOM	OMA	0	0	8	0	0	0	0	0
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
FT POLK	OMA	0	95	0	0	0	0	0	0
OTEA	OMA	0	25	0	0	0	0	0	0
TRADOC	OMA	0	279	443	220	200	200	200	200
Miscellaneous OMA	OMA	0	158	18	16	802	817	799	730
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		3589	3902	1672	1021	1652	1717	1749	1780
TOTAL PARENT SERVICE		23013	23909	15195	12009	13617	13921	13845	12855
2. Other DOD									
a. USAF	USAF	1054	1452	1064	1039	556	564	599	654
b. NAVY/MARINE CORPS	USN/USMC	348	1801	1559	1216	1204	1293	1302	1291
c. Misc DOD	MISC DOD	864	111	158	145	32	37	42	47
TOTAL OTHER DOD		2266	3364	2781	2400	1792	1894	1943	1992
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		25279	27416	29778	23409	22347	20937	20451	19241

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
UAV	35889	1883	0	0	0	50	50	50	50
PM UAV	62303	0	110	37	20	25	25	25	25
AVIATION LIFE SPT EQUIP	63801	205	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	7	8	9	2
COMANCHE - PM LHX	64223	131	15	1	0	0	0	0	0
FLD SPT ACT - FT HOOD	65712	0	851	0	0		0	0	0
Subtotal RDTE		2219	976	38	20	82	83	84	77
b. PROCUREMENT									
PM AAH	112000	0	1	0	0	0	0	0	0
PM UAV	523200	0	19	122	322	263	257	243	234
PM ADV SCOUT HELICOPTER/ASE	120000	0	116	27	33	0	0	0	0
Subtotal PROCUREMENT		0	136	149	355	263	257	243	234
c. OMA and Other Army									
TRADOC	OMA	0	279	443	220	200	200	200	200
Subtotal OMA and Other Army		0	279	443	220	200	200	200	200
TOTAL PARENT SERVICE		2219	1391	630	595	545	540	527	511
2. Other DOD									
a. USAF	USAF		339		200	134	135	160	184
b. NAVY/MARINE CORPS	USN/USMC		1471	1306	916	750	800	800	800

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

AIR VEHICLES

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
c. Misc DOD	MISC DOD	864	62	24	85	12	12	12	12
TOTAL OTHER DOD		864	1872	1330	1201	896	947	972	996
3. Other U.S. Government									
4. TOTAL DIRECT USER FUNDS		3083	3263	1960	1796	1441	1487	1499	1507

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
SPECIAL OPERATIONS FORCES	VARIOUS	327	0	0	0	0	0	0	0
PM EW/RSTA	62270	0	38	0	100	400	400	400	400
MICOM	63322	0	49	0	0	0	0	0	0
AIRCRAFT AVIONICS	64201	72	0	13	0	0	0	0	0
PM ASE	64270	323	930	618	33	100	100	100	100
PROTECTIVE EW SYSTEMS	64270	1829	278	550	0	550	550	550	550
MISCELLANEOUS R&D	Various	0	0	0	0	9	0	8	0
PEO CMD & CTL	64321	1913	418	82	413	500	500	500	486
Subtotal RDTE		4464	1713	1263	546	1559	1550	1558	1536
b. PROCUREMENT									
GUARDRAIL	A02005	53	0	0	200	50	50	50	50
PM EW/RSTA	111000	0	721	1400	1015	212	214	177	172
PEO CMD & CTL	528093	0	0	330	194	75	75	75	75
SIG WARFARE CENTER	623322	0	0	28	25	40	40	40	40
Subtotal PROCUREMENT		53	721	1758	1434	377	379	342	337
c. OMA and Other Army									
C3 SYSTEMS	OMA	52	54	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	58	18	16	300	300	300	300
AMC DEP CoS FOR AMMO	OTHARMY	0	116	0	0	0	0	0	0
USA Strategic Defense Cmd	OTHARMY	0	385	200	190	100	100	100	100
PM EW/RSTA	OTHARMY	0	1644	612	200	150	150	150	150
Subtotal OMA and Other Army		52	2257	830	406	550	550	550	550

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ELECTRONIC COMBAT SYSTEMS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
TOTAL PARENT SERVICE		4569	4691	3851	2386	2486	2479	2450	2423
2. Other DOD									
a. USAF	USAF	0	0	147	0	18	19	19	20
b. NAVY/MARINE CORPS	USN/USMC	0	13	15	0	18	19	20	20
TOTAL OTHER DOD		0	13	162	0	36	38	39	40
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		4569	4704	4013	2386	2522	2517	2489	2463

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23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

ARMAMENTS/WEAPONS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
PM HAWK	23801	0	86	0	0	90	90	90	90
MINE WARFARE	63619	398	0	0	0	0	0	0	0
MISCELLANEOUS R&D	Various	0	0	0	0	2	8	8	5
MISSILE PIPS	63801	176	0	0	0	0	0	0	0
Subtotal RDTE		574	86	0	0	92	98	98	95
b. PROCUREMENT									
HAWK GSE	C28100	290	0	0	0	263	257	243	235
Subtotal PROCUREMENT		290	0	0	0	263	257	243	235
c. OMA and Other Army									
Subtotal OMA and Other Army		0	0	0	0	0	0	0	0
TOTAL PARENT SERVICE		864	86	0	0	355	355	341	330
2. Other DOD									
TOTAL OTHER DOD		0	0	0	0	0	0	0	0
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		864	86	0	0	355	355	341	330

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SENSITIVE/CLOSE HOLD

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
PM FATDS	23726	0	11	1224	300	1500	1500	1500	491
STACCS - PM OPTADS	23740	184	39	0	0	0	0	0	0
PM MSCS	28010	0	17	15	25	25	25	25	25
SCAMP/SMART-T - PM MILSTAR (ARM	33142	429	86	196	368	350	350	350	350
PM RADAR	62120	0	9	0	0	25	25	25	25
NIGHT VISION & ELEC SENSOR DIV	62709	0	0	5	5	15	15	15	15
COMM/AUTO DPC	62782	0	0	135	0	0	0	0	0
BRDEC	62785	0	7	0	5	15	15	15	15
PJH-PLRS/JTIDS HYBRID	63713	717	780	806	150	200	200	200	200
SINCGARS	63746	1095	0	0	0	200	200	200	200
PM CSSCS	63805	27	104	347	100	150	150	150	150
NBC CONTAM AVOIDANCE	63806	50	82	0	0	200	200	250	250
NIGHT VISION	64710	41	0	0	0	10	10	10	10
NATICK RD&E CENTER	64713	0	19	0	0	10	10	10	10
PM TRADE	64715	1002	255	16	39	55	55	55	55
HQ AMC	64740	0	841	0	0	0	0	0	0
USA STRICOM	64759	0	0	403	200	300	300	300	300
JOINT TACTICAL GROUND STATION	64766	710	0	0	0	0	0	0	0
JSTARS	64770	551	220	150	150	200	200	200	200
NAVSTAR GPS	64778	961	0	100	0	300	300	300	300
NBC CONTAM AVOIDANCE	64806	37	221	3	0	30	71	83	120
GROUND CID	64817	62	5	10	0	0	0	0	0
TECOM	65602	3274	2675	40	1625	1540	1538	1526	1495
PM ITTS	65603	0	148	281	500	500	500	500	500
MISCELLANEOUS R&D	Various	0	0	0	0	70	68	6	0
FLD SPT ACT - FT HOOD	65712	0	2704	2070	1383	1400	1400	1400	1400
TACOM	68100	0	30	44	205	200	200	200	200
Subtotal RDTE		9140	8253	5845	5055	7295	7332	7320	6311

23-May-94

ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
b. PROCUREMENT									
SINCGARS	B00500	631	533	531	810	325	350	325	325
TACTICAL C-E EQUIPMENT	BA5210	1700	0	0	0	0	0	0	0
ADDS	BA9712	0	5949	991	520	312	325	320	320
MSCS EQUIPMENT	BB8509	123	95	337	392	205	215	215	215
DSCS	BB8509	127	0	0	0	0	0	0	0
NAVSTAR	K47800	22	348	0	0	0	0	0	0
CAM	S02200	81	0	0	0	0	0	0	0
HQ SPACE SYS DIV	521800	0	485	920	435	200	200	200	200
COMM/AUTO DPC	523283	0	53	0	0	0	0	0	0
CECOM	528000	0	322	309	543	100	125	100	100
CRDEC	531000	0	7	87	75	75	75	75	75
USA STRICOM	537000	0	213	875	412	75	75	75	75
OTHER PROCUREMENT	VARIOUS	0	0	9	20	20	55	43	34
Subtotal PROCUREMENT		2684	8005	4059	3207	1312	1420	1353	1344
c. OMA and Other Army									
USATSC	OMA	100	0	0	0	0	0	0	0
PM ADDS	OMA	0	1	0	0	0	0	0	0
STRICOM	OMA	21	52	0	0	50	75	100	150
TECOM	OMA	48	0	0	0	0	0	0	0
BRDEC	OMA	143	181	114	80	100	125	150	200
OTEA	OMA	0	25	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	100	0	0	302	317	299	230
Special Op Forces Office	OTHARMY	0	100	129	100	100	100	100	100
PM RADAR	OTHARMY	0	21	44	20	50	50	50	50
TEXCOM	OTHARMY	258	0	0	0	0	0	0	0

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER TESTS

PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
IEW TEST DIR	OTHARMY	1056	0	0	29	0	0	0	0
Subtotal OMA and Other Army		1626	480	287	229	602	667	699	730
TOTAL PARENT SERVICE		13450	16738	10191	8491	9209	9419	9372	8385
2. Other DOD									
a. USAF	USAF	1054	1113	917	839	404	410	420	450
b. NAVY/MARINE CORPS	USN/USMC	348	306	210	300	400	436	444	431
c. Misc DOD	MISC DOD		49	121	60	20	25	30	35
TOTAL OTHER DOD		1402	1468	1248	1199	824	871	894	916
3. Other U.S. Government									
TOTAL Other U.S. Government		0	0	0	0	0	0	0	0
4. TOTAL DIRECT USER FUNDS		14852	18206	11439	9690	10033	10290	10266	9301

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
1. PARENT SERVICE									
a. RDTE									
USA RESEARCH LAB	62784	0	25	11	10	20	20	20	20
JDMSS-FMD, WASH DC	62789	0	0	286	361	292	294	224	203
MICOM	63322	0	24	0	0	0	0	0	0
MISCELLANEOUS ACTIVITIES	Various	0	68	114	0	0	0	0	0
Subtotal RDTE		0	117	411	371	312	314	244	223
b. PROCUREMENT									
MISCELLANEOUS PROCUREMENT	Various	0	0	0	0	410	514	611	683
Subtotal PROCUREMENT		0	0	0	0	410	514	611	683
c. OMA and Other Army									
MICOM	OMA	0	0	8	0	0	0	0	0
FT POLK	OMA	0	95	0	0	0	0	0	0
Miscellaneous OMA	OMA	0	0	0	0	200	200	200	200
Miscellaneous Other Army	OTHARMY	0	111	31	6	0	0	0	0
Wash HQ Svcs F&A Div	OTHARMY	0	677	73	60	0	0	0	0
Sierra Army Depot	OTHARMY	0	3	0	0	0	0	0	0
FSTC	OTHARMY	100	0	0	100	100	100	100	100
USA Intelligence & Scty Cmd	OTHARMY	200	0	0	0	0	0	0	0
US Forces Command	OTHARMY	116	0	0	0	0	0	0	0
OPTEC	OTHARMY	289	0	0	0	0	0	0	0
USA Engineer Topography Lab	OTHARMY	286	0	0	0	0	0	0	0

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ELECTRONIC PROVING GROUND
SOURCE OF DIRECT USER FUNDS
(DOLLARS IN 000's)

OTHER PROGRAM	P.E./SSN	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Other Army - TRADOC	OTHARMY	920	0	0	0	0	0	0	0
Subtotal OMA and Other Army		1911	886	112	166	300	300	300	300
TOTAL PARENT SERVICE		1911	1003	523	537	1022	1128	1155	1206
2. Other DOD									
b. NAVY/MARINE CORPS	USN/USMC		11	41	0	36	38	38	40
TOTAL OTHER DOD		0	11	41	0	36	38	38	40
3. Other U.S. Government									
ONDCP	OTHER FED	0	143	10802	7000	6170	4310	3830	3540
ARPA	OTHER FED	0	0	1000	2000	768	812	833	854
TOTAL Other U.S. Government		0	143	11802	9000	6938	5122	4663	4394
4. TOTAL DIRECT USER FUNDS		1911	1157	12366	9537	7996	6288	5856	5640

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FY92 IN WORKYEARS BY FUNCTIONAL AREA:

FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	TOTAL WORKYEARS
ENVIRONMENTAL TEST FACILITY	0.4	0.2	0.0	3.8	0.0	4.3
INSTRUMENTED TEST RANGE	59.9	10.5	1.6	50.8	2.2	125.0
RANGE OPERATIONS	3.0	1.1	0.2	2.7	0.1	7.1
EMI/TEMPEST TEST FACILITY	0.4	1.3	0.0	6.3	1.9	9.9
IEW TEST DIVISION	0.0	13.1	0.0	2.7	0.0	15.8
ELECTROMAGNETIC ENVIR TEST FAC	1.7	4.7	0.0	43.5	13.7	63.5
AVIONICS/GPS TEST FACILITY	1.3	0.0	0.0	4.7	0.0	6.0
	66.6	30.9	1.8	114.4	17.8	231.6
EPG CAPABILITY	44.4	47.1	1.2	242.6	15.2	350.4
TOTAL	111.0	78.0	3.0	357.0	33.0	582.0

FY93 IN WORKYEARS BY FUNCTIONAL AREA:

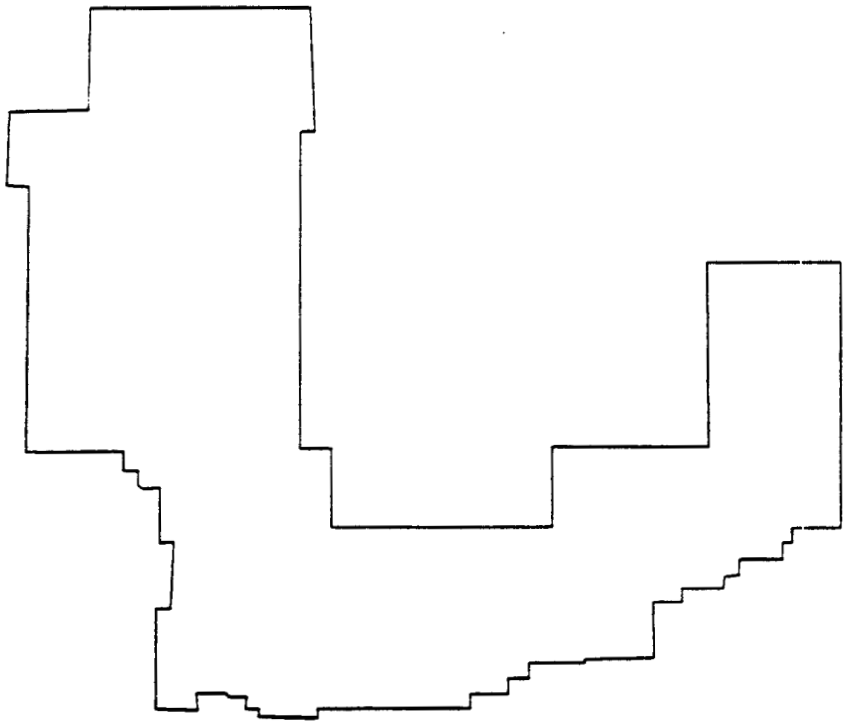
FACILITY/CAPABILITY	AIR VEHICLES	ELECTRONIC COMBAT	ARMAMENTS/WEAPONS	OTHER TESTS	OTHER	
ENVIRONMENTAL TEST FACILITY	0.7	1.0	0.0	7.8	0.0	9.5
INSTRUMENTED TEST RANGE	14.3	31.3	0.9	45.6	0.6	92.6
RANGE OPERATIONS	1.8	1.6	0.0	2.7	0.1	6.2
EMI/TEMPEST TEST FACILITY	0.2	1.5	0.0	4.7	1.1	7.6
IEW TEST DIVISION	0.0	9.9	0.0	0.6	0.0	10.5
ELECTROMAGNETIC ENVIR TEST FAC	0.1	8.7	0.0	23.8	25.4	58.0
AVIONICS/GPS TEST FACILITY	0.8	0.0	0.0	7.8	0.0	8.7
	17.9	54.1	0.9	92.9	27.2	193.0
EPG CAPABILITY	3.1	17.9	2.1	302.1	14.8	339.0
TOTAL	21.0	72.0	3.0	395.0	42.0	532.0

Document Separator

CLOSE HOLD/SENSITIVE

YUMA PROVING GROUND

BRAC DATA CALL #7



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YPG

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	Total	AV	A/W	E/C			Test Hours 92	Test Hours 93	
Aircraft Weapons Integration	100	78	22	0		AV	5544	3197	
						AW	1802	900	
Aircraft Munitions Ranges	100	0	100	0			1031	1611	
Air Vehicle / General Support	100	34	17	0	50	AV	484	230	
						AW	250	114	
~~Direct Fire Range~~	~~100~~	~~0~~				other	200	230	
Direct Fire Range	100	0	100	0		AW	717	848	
						other	2421	2765	
Artillery / Mortar Test Ranges	100	0	100	0			~~2383~~ 4158	2744	
Mine Test Facility	100	0	100	0			11898*	1461*	* Direct Labor Hour.
Environmental Simulation	100	15	85	0		AV	179	184	
						AW	2073	1850	
Physical Measurements	100	0	100	0			2165	1932	
Munitions Handling, Processing & Storage	100	11	84	0	5	AV	66	68	— SUPPORT
						AW	1035	923	
						other	2	2	
Aviation Support Facilities	100	37	36	0	27	AV	119	123	— SUPPORT
						AW	237	212	
						other	6	7	
Range Instrumentation	100	13	60	0	27	AV	573	589	
						AW	5403	4820	— SUPPORT
						other	83	95	
DATA Analysis	100	60	30	0	0	AV	807	831	
						AW	825	736	— SUPPORT
						other	9	11	

Don Jeanblanc 8/12/94

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TOTAL PAGES

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YUMA PROVING GROUND

Title	Total	AV	A/W	EC
1. Aircraft Weapons Integration Range	100	78	22	0
2. Aircraft Munitions Ranges	100	0	100	0
3. Air Vehicle / General Support	100	39	17	0
4. Direct Fire Ranges	100	0	100	0
5. Artillery / Mortar Test Ranges	100	0	100	0
6. Mine Test Facility	100	0	100	0
7. Environmental Simulation	100	15	85	0
8. Physical Measurements	100	0	100	0
9. Munitions Handling, Processing & Storage	100	11	84	0
10. Aviation Support Facilities	100	37	36	0
11. Range Instrumentation	100	13	60	0
12. Data Analysis & Computation	100	60	30	0

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YUMA PROVING GROUND

Title	Total	FAC CAT	AV	A/W	AIR ARM	EC	A/W	
1. Aircraft Weapons Integration Range	100	OAR	78	22	100	0	22	✓
2. Aircraft Munitions Ranges	100	OAR	0	100	100	0	100	✓
3. Air Vehicle / General Support	100	OAR	34	17	100	0	17	✓
X4. Direct Fire Ranges	100	OAR	0	100	0	0	0	X
X5. Artillery / Mortar Test Ranges	100	OAR	0	100	0	0	0	X
X6. Mine Test Facility	100	OAR	0	100	0	0	0	X
7. Environmental Simulation	100	MF	15	85	9	0	7	✓
X8. Physical Measurements	100	MF	0	100	2	0	2	X
X9. Munitions Handling, Processing & Storage	100	OAR	11	84	6	0	5	X
10. Aviation Support Facilities	100	OAR	37	36	35	0	13	X
11. Range Instrumentation	100	OAR	13	60	.23	0	14	X
12. Data Analysis & Computation	100	OAR	60	30	32	0	10	X

8/12/94

8/12/94

8/12/94

DEPARTMENT OF THE ARMY

UNITED STATES ARMY YUMA PROVING GROUND

YUMA, ARIZONA 85365

REPLY TO
ATTENTION OF

STEYP-MT-EA 2 Jun 94

MEMORANDUM FOR Commander, U.S. Army Test and Evaluation Command, ATTN: AMSTE-TA, Aberdeen Proving Ground, MD 21005-5055

SUBJECT: BRAC 95 Data Call #7 - Test and Evaluation

1. Enclosed is the Yuma Proving Ground response to the referenced data call. The information contained in this report is accurate and complete to the best of my knowledge and belief.

2. POC for this action is Scott Dellicker, STEYP-MT-EA, DSN 899-6102.

RICHARD R. WALKER
Colonel, Aviation
Commanding

DEPARTMENT OF THE ARMY

UNITED STATES ARMY YUMA PROVING GROUND
YUMA ARIZONA 85365

REPLY TO
ATTENTION OF

STEYP-MT-EA

8 Jun 94

MEMORANDUM FOR Commander, U.S. Army Test and Evaluation Command, ATTN: AMSTE-TA, Aberdeen Proving Ground, MD 21005-5055

SUBJECT: BRAC 95 Data Call #7 - Test and Evaluation

1. Enclosed are revisions to the Yuma Proving Ground response to the referenced data call. The information contained in this report is accurate and complete to the best of my knowledge and belief.

2. POC for this action is Scott Dellicker, STEYP-MT-EA, DSN 899-6102.

RICHARD R. WALKER
Colonel, Aviation
Commanding

Changes posted as copies.

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CLOSE HOLD/SENSITIVE

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SECTION 1 - Introduction

Yuma Proving Ground (YPG) is a U.S. Army Test and Evaluation Command proving ground with a 40-year tradition of supporting the development of weapons systems for the Department of Defense (DoD) services, private industry, and foreign governments. It is a multipurpose complex established in the Sonoran desert of southwestern Arizona. Centrally located between San Diego, California, to the west, and Phoenix, Arizona, to the northeast. YPG is just 250 miles southeast of Edwards Air Force Base and China Lake Naval Air Warfare Center and about 470 miles west of White Sands Missile Range. Covering a land area of about 1,300 square miles, about 830,000 acres, it is roughly 22 miles from the city of Yuma and bounded almost entirely by federal and state land. U.S. Highway 95, the only major road traversing the property, serves as a natural divider between the Kofa Range, used for large caliber munitions and mines testing, and the Cibola Range, focusing on the testing of helicopter integrated weapon systems and armament systems.

The mission areas assigned to YPG are classified as Aircraft Weapon Systems and Armament, Artillery, Tank/Automotive, and Air Delivery. All of these systems are elements of the ground, war. The artillery, tanks, and armed helicopters fight the war together. As modern communication and information processing technologies are applied to weapon systems, testing these systems requires increased combined test operations. YPG, with its broad base of capabilities, is poised to support the development efforts of the *Digital Battlefield* technology. Complete systems can be tested operating together against an array of different target types, with the entire scenario recorded utilizing an extensive data collection capability. YPG offers the land area, supported by real-time instrumentation, to allow simultaneous testing of multiple weapons systems in a realistic environment.

YPG is the desert test range for the Army, located in a hot dry desert that is remarkably similar to the middle eastern deserts in both climate and terrain. The desert is a challenging environment for equipment confined to operate on or near the ground. The environment at YPG also meets all requirements for helicopter operations. Helicopters operate in the terrain for cover and concealment as the primary countermeasure to enemy radar and other sensors. The rugged and varied terrain at YPG provides the operating environment required to characterize system performance in a realistic environment, real targets operating in hills and valleys as well as on flat lands. YPG is a near sea-level test range, providing the environment required to operate all helicopters in the services' inventories at maximum gross weight. Operations at higher altitudes or in high humidity conditions can significantly limit helicopter test operations.

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SECTION 2 - Methodology

The following outlines the data collection methodology for this data call:

2.1 Categorizing Workload

The percentage use of the individual resources was determined with the fundamental assumption that all activities at YPG are considered Test and Evaluation (T&E). Although several training exercises are conducted on the YPG ranges each year, less than 1% of annual funding at YPG is outside T&E. The breakdown of percentage use by T&E functional area was determined based on the percentage of funding utilized in the areas of Air Vehicles, Armament and Weapons (Aircraft Armaments and Surface-to-Surface), and other T&E. To accomplish this, the test program categories contained within the TECOM project number were utilized as follows:

AI - Aircraft; Air Vehicles
CO - Special Studies/Support (each program reviewed and categorized appropriately)
EE - Electronics (each program reviewed for application to Air Vehicles)
ES - Special Purpose Equipment (each program reviewed for application to Air Vehicles)
MI - Missiles; Armament/Weapons
MU - Munitions; Armament/Weapons
WE - Weapons; Armament/Weapons
All Others - Other T&E

2.2 Historical Workload

Only Fiscal Year 1993 Historical Workload data are readily available for each facility on the YPG ranges. Workload, as measured by direct labor hours, was attributed to a facility based on the financial cost center. Historical Workload data are available for all test programs conducted on the proving ground from 1986 through 1993 but could not be summarized by cost center. These data were compiled and are presented in Section 3 of this report. For the Open Air Range support facilities, the test hours and number of missions includes the sum of all testing supported in the primary areas of this data call (Air Vehicles, Armament/Weapons, and Electronic Combat (EC)). The trend of historical workload from 1986 to 1993 was established using the proving ground data and applied to 1993 actuals, for each facility, to estimate the historical workload by facility. The test hours for each facility include 1992 and 1993 actuals with projections from 1986 through 1991.

2.3 Determination of Unconstrained Capacity

These data could only be compiled for the Measurement Facilities and Open Air Ranges but not for the Open Air Range support facilities (e.g. airfield support, range instrumentation). The Open Air Ranges are supported by numerous facilities that vary greatly with test requirements. Therefore, the capacity of the Open Air Ranges was assessed based on a typical mix of programs requiring varying degrees of support. In all cases, the limiting factors were not the supporting facilities but characteristics of the individual ranges or required operating environment (e.g. daylight conditions) for the types of testing conducted on those ranges. It is important to note that measurement of unconstrained capacity, based on test hours, does not necessarily identify the strengths or limitations of a particular facility. Where appropriate, the capacity data was annotated with notes reflecting measurements of the throughput of the facility.

2.4 Forecasted Workload

The list of appropriations anticipated to be supported was developed using the 'President's Budget', provided by Headquarters Test and Evaluation Command, from FY 94 through FY 99. Estimated workload for the Cold Regions Test Center and Tropical Test Center are included in YPG estimates starting in FY 95. The Aviation Technical Test Center provided workload estimates for FY 97. These estimates are incorporated in the YPG workload forecasts. Detailed forecasts for FY 98 and FY 99 are not presently available but were estimated based on the trends of the President's Budget in Air Vehicles and Armament/Weapons workload. FMS and Private Industry testing is anticipated to remain at equivalent levels of 1993 workload.

2.5 Personnel Forecasts

YPG test ranges share many support resources. Therefore, staffing levels of any particular facility can vary greatly. Personnel are cross-utilized throughout different areas of the proving ground. Therefore, estimates of personnel strength at the facility level are not easily defined. Actual staffing levels for FY 93 and FY 94 are included for all supporting facilities and measurement facilities. Personnel strengths reported for the Open Air Ranges are expressed in manyears applied to the range.

Staffing levels beyond FY 94 are only included for those facilities that are anticipated to change based on a change in mission (e.g. addition of ammunition production acceptance testing). A detailed breakdown of the personnel strength for the proving ground is provided in Section 3.0.

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SECTION 3 - Capacity and Technical Resources

3.0 General Supporting Data

The following provides information used as supporting data for this data call. It defines overall personnel strength forecast through FY 99. These data represent the personnel strength for all missions at the proving ground. Based on historical workload, 43.8 percent of the test personnel support the mission areas considered in this data call.

PERSONNEL STRENGTH						
	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
OFFICERS						
TEST	15	31	31	70	70	70
BASE OPS	5	5	5	5	5	5
ENLISTED						
TEST	97	164	164	193	193	193
BASE OPS	82	50	50	50	50	50
CIVILIANS						
TEST	425	476	471	565	560	555
BASE OPS	327	333	330	333	329	325
CONTRACTORS						
TEST	465	525	357	542	531	523
BASE OPS	185	185	151	165	162	158
TOTAL						
TEST	1002	1193	1023	1370	1354	1341
BASE OPS	599	573	536	553	546	538
GRAND TOTAL	1601	1766	1559	1923	1900	1879

Note: Includes JPG, CRTC, TTC, and ATTC mission transfers to YPG.

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The following provides the historical workload for the proving ground.

HISTORICAL WORKLOAD (Direct Labor Hours)								
	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
Air Vehicle	83526	89814	100192	158463	164443	84666	97418	100305
Armament/Weapons	474907	550911	570460	634031	659961	570961	612861	546738
Other T&E	374561	459595	460048	391936	339779	512553	648201	740377
Total	932994	1100320	1130700	1184430	1161183	1168180	1358480	1387420

Question 2.3A Does the facility have a specified war-time or contingency role established in approved war plans?

RESPONSE: No. The mobilization mission is to accelerate and expand the testing and evaluation of production and developmental materiel items that are required to expand the Active Army as necessary to meet wartime force requirements.

The following responses are provided to questions in section 2.3:

Question 2.3.B Does the facility provide T&E prduct or service, without which irreparable harm would be imposed on the test mission of the host installation?

2.3.B.1 On the test mission of any other activity?

2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces onf the United States?

RESPONSE: Yuma Proving Ground provides test capabilities and services without which irreparable harm would be imposed on a number of U.S. Army critical mission needs. Examples are:

a. YPG provides desert testing for all Army systems. YPG is located in a hot, low altitude desert environment which is the closest analog to the middle east deserts of any test facility. The inability to test weapon systems in a natural desert environment would jeopardize the Army's ability to execute missions in desert areas with any confidence that the weapon systems will perform as designed and the ability to quickly respond to urgent materiel development needs ad they arise during desert operations. This was proven during Desert Storm.

2.1 B Forecasted Workload

	Program Name	PE	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Air Vehicle	AVIATION TECHNOLOGY	62211	242	661	590		250	238	226
	AARMED AHIP	64220					300	285	271
	ADVANCE TECHNOLOGY LHX	64223	309	50	185	2129	4649	4417	4196
	ELECTRONIC WARFARE DEV	64270	160	55	311	300	800	760	722
	AVN ENGR DEV	64801					500	475	451
	LONGBOW	64816	2906	1085	1192	1400	1650	1568	1489
	ATCOM CMDACTR SPT	65801					300	285	271
	R&D SUPPORT OF NONDEV ITEMS	65810	152	144	90	8	8	8	7
	AH-64 ATTACK HELICOPTER (APPACHE) MYP	A06605	464	776			130	124	117
	CH-47 CARGO HELICOPTER MODS(MYP)	AA0252					3301	3136	2979
	OH-58D MODS	AA0400	1180	613	489	144	698	663	630
	UH 60A(BLACK HAWK) MODS	AA0492					900	855	812
	AIRBORNE AVIONICS	AA0700					30	28	27
	ASE MODIFICATION	AA0720					80	76	72
	OTHER DLR	VARIOUS					1500	1425	1354
Armament Weapons	MISSILE TECHNOLOGY	62303	54						
	WEAPONS & MUNITION ADVANCE DEV	63004	112	314	6				
	AIR SELF DEFENSE	64202	21						
	STINGER	C18600	213	325	94	97	350	333	316
	PATRIOT	C49200			32				
	HELLFIRE	C70100			13	13	13	12	12
	ARMY TACTICAL MISSILE SYS	C98500	75	107	109	111	113	107	102
	CTG 25MM ALL TYPES	E08200		79					
	CTG 30MM ALL TYPES	E10100	22						
	GRENADE ALL TYPES	E34000	7						
	ROCKET HYDRA 70 ALL TYPES	E37300	390	390	390	350	350	333	316
	PROJ ARTY 155MM BASEBURNER M864	F68500	76						
	CTR, 120MM X-ROD (HERCULES)	F73300		127					
	CTG 105MM HERA XM913/XM928	23745		144					
	WEAPONS AND MUNITION TECHNOLOGY	62624	1518	2135	2479	2300	2380	2261	2148
	LIGHTWEIGHT 120MM TANK MAIN ARM SYS	63602			2252	2792	2500	2375	2256
	WIDE AREA MINE ENG DEV	64619	195	471	507	276	11	10	10
	CTG 9MM	EA3000	513	597	590	590	590	561	532
	MORTAR	64802	117	433	225				
	SADARM ENGINEERING DEVELOPMENT	64814	2985	1470	733	541			
	FIREFINDER IMPROVEMENT PROGRAM	BA5100	53	245	150	100	90	86	81
	MULTIPLE LAUNCH ROCKET SYSTEM	C65400	308	41	46	47	49	47	44
	MLRS	C67500			12				
	DRAGON	CL2000			13	13	13	12	12
	M119 LIGHT TOWED 105MM HOWITZER	G01300	5	17					
	M284 CANNON ASSEMBLY FOR M182 GUN MOUNT	GA0400	916	968	451	467	302	287	273
	ADVANCED TANK CANNON	63645	1148	2792	1818	958	2449	2327	2210
	ROCKETS	EA4000	110	128	157				

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2.1.8 Forecasted Workload

Other T&E	COMBAT VEHICLE IMPROVEMENT PROGRAM	23735	914	154		41	643	611	580
	155MM SELF PROPELLED HIP	23743		144					
	AIRBORNE RECONNAISSANCE LOW	35889					450	428	406
	PROJECT 139	39050	51						
	ELECTRONIC SURVEILLANCE FUZING TECH	62120	101	293					
	TRACTOR HIP	62122					50	48	45
	CHEMICAL,SMOKE & EO DEFEATING TECH	62622			255	23	23	22	21
	JOINT SERVICE SMALL ARMS PROGRAM	62623		96					
	LOGISTICS TECHNOLOGY	62786	60	116	715	450	650	618	587
	LOGISTICS ADVANCED TECHNOLOGY	63001	209	180	134	716			
	COMBAT VEHICLE & AUTO ADVANCED TECH	63005	97	469	150	247	40	38	36
	XT158L TRACK, HEAVY VEHICLE	63631	56	319	1554	1054	900	855	812
Other T&E	SOLDIER SUPPORT & SURVIVABILITY	63747		145	600	533	523	497	472
	PROGRAM TIGER	63797	1447	1516	1085	149	128	122	116
	ADVANCED MAINT CONCEPT & EQUIPMENT	63801	8	43	18	20	270	257	244
	AIRDROP EQUIPMENT ADVANCE DEV	63804	443	244	250	250	250	238	226
	CHEMICAL/BIOLOGICAL DEFENSE EQUIP	63806	21		178		25	24	23
	TARGET SYS DEV	64258					1000	950	903
	FAMILY OF MEDIUM TACTICAL VEHICLES	64604	309	699	783	380	566	538	511
	SCREENING SMOKE MATERIAL ENG DEV	64609	236	213	255	201	201	191	181
	ADVANCED ANTITANK WEAPON SYSTEM-MED	64611	236	13		159	159	151	143
	AIR TRAFFIC CONTROL	64633					10	10	9
	LASER COUNTERMEASURE	64710			145				
	CLOTHING AND EQUIPMENT	64713	90	108	313	748	798	758	720
	BAT	64768					250	238	226
	AIRDROP EQUIPMENT ENG DEV	64804	1228	637	1499	1900	1700	1615	1534
	COMMAND CONTROL & COMM SYS ENG DEV	64805	26	2	168	168	200	190	181
	NBC DEF SYS ENG DEV	64806			252	158	158	150	143
	LANDMINE WARFARE BARRIER ENG DEV	64808	4						
	ARMY TEST RANGES & FACILITIES	65601	459	980	2000	1400			
	ARMY TECHNICAL TEST INST & TARGETS	65602	1560	1160	443	198	803	763	725
	SUPPORT OF OPERATIONAL TESTING	65712	232	4	13	353	1086	1032	980
	ACTIVE ARMY SPT TO CINC INTEL	122189					500	475	451
	END ITEM INTERGRATED MATERIEL MANAGEMENT	721121	1107	541	192	139	54	51	49
	LOGISTICS SUPPORT ACTIVITIES	728012	241	76	361				
	CONVENTIONAL AMMUNITION MANAGEMENT	728041	215	603	3500	2122	1749	1662	1578
	DEPOT MAINTENANCE ACTIVITIES	732207	325	339	441	262	256	243	231
	TOTAL MAINTENANCE SUPPORT ACTIVITIES	738017	2150	760	71	177	14	13	13
	ATC/GROUND SPT	814773							
	LIGHT & SPECIAL DIV INTERIM SENSOR(LSD)	A04500		11					
	SEMITRAILER TANK 5000 G	D02300		312	341	341	300	285	271
	TRAILOR HEAVY EXPANDED MOBILITY	D04700		112			258	245	233
	FAMILY OF MEDIUM TACTICLE VEH(MYP)	D14500	764	1254	1165	342	176	167	159
	HI MOB MULTI-PURP WHLD VEH (HMMWV)	D15400			89	114	118	112	106
	FAMILY OF HEAVY TACTICAL VEH (MYP)	D16500	96	796					
	TRAILER, COMBAT SUPPORT M200	DA0100	335	315	695	403	200	190	181
	PALLETIZED LOADING SYSTEM (PLS)	DA0500	1159	562	470	474	411	390	371

2.1.B Forecasted Workload

Other T&E	HEAVY EQUIPMENT TRANSPORTER SYS	DV0012	175	501	972	500	500	475	451
	SMALL UNIT SUPPORT VEHICLE	DV0014							
	MINE	EA0900	6						
	M1064 120MM MORTAR CARRIER	G02100				217	250	238	226
	BFVS SERIES	G80700	1640	1103	694	283	270	257	244
	M1/M1A1 ABRAMS TANK SERIES (MYP)	G82915	3039	1547	1654	2039	1475	1401	1331
	M109A6 155MM SP HOWITZER PALADIN	GA0401	57	313	106				
	M1 ABRAMS TANK (MOD)	GA0700	261	790	1500	1857	1000	950	903
	M88A1 MEDIUM RECOVERY VEHICLE	GA0925		223	63	63			
	FAASV FIP TO FLEET	GA8010		385	258	200			
	CARRIER, M113 ROLL	GB1930	63						
	DECONTAMINE APP PWR DR LT WT M17	M67400	336	300	1	1	1	1	1
	MASK PROTECTIVE NCBC	MA5000			15	13			
	GENERATOR AND ASSOCIATED EQUIP	MA9800							
	M9 ARMORED COMBAT EARTHMOVER	MO5900	23						
	TRAINING DEVICES, NONSYSTEM	NA0100					500	475	451
	MISCELLANEOUS	VARIOUS					2404	2284	2170
	OTHER	VARIOUS				50			
AIR FORCE	AIR FORCE	64645	469	565	445	445	490	466	442
CAWF	CAWF		6036	6468	9750	7800	6240	5928	5632
DOD	DOD		1492	1923	1522	1200	3356	3188	3029
EC	ARMORED SYS MOD ENG DEV		12	59	43	364	46	44	42
FMS/PRIV	FMS/PRIV		1562	2391	1541	2180	1958	1860	1767
NAVY	NAVY		1962	1840	2033	1275	200	190	181

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b. YPG provides T&E services for Army developers of long range artillery weapons and munitions; it is the only provider of this service in the U.S. These systems must be tested during development prior to production to assure that they perform as designed and as required by the forces that use them. Testing of production lot samples must be conducted in order for the Army to be confident that the weapons and ammunition stockpiled for combat actually function in combat. Failure to provide this T&E service would jeopardize the Army's ability to fight.

c. YPG provides T&E service for developers of Army helicopter weapons systems. The range has been uniquely developed for this purpose and is not duplicated elsewhere. Helicopter weapons and helicopter target acquisition systems cannot be developed without these T&E services. These services are critical to the operational effectiveness of Army forces using aviation elements.

3.1 Over-Arching Measures of Merit

3.1.A Interconnectivity (MV1) - Measure of Merit: *Extent of linkage of this facility with other facilities and assessment of single-node failure potential.*

(1) What percentage of total test workload in FY93 involved the real-time or near real time exchange of data or control with another facility? List the facilities you interconnect to for test and identify how many are simultaneous activities. Identify these as to whether they are internal or external to the site.

RESPONSE:

EXTERNAL - Less than two percent. YPG is not integrated with other test ranges for real-time or near real-time data transfers. However, the YPG ranges are frequently used as a backup for other western test ranges. Test programs from Edwards Air Force Base, Naval Air Warfare Center-Weapons Division, Naval Air Warfare Center-Aircraft Division, Yuma Marine Corps Air Station, as well as national guard and reserve units are routinely supported.

INTERNAL - Approximately 30 percent. Real-time data transfer is routinely accomplished for nearly all aviation test missions. All range instrumentation supporting advanced technology testing is integrated into our data analysis and computation capability, the Mission Control Facility. This estimate does not include real-time data acquisition (which is done on nearly every test at YPG) but includes the transfer of data between resources.

(2) If your facility were to be closed, would there be an impact on other facilities to which you are connected? Yes/no. If yes, explain.

RESPONSE: Yes. As stated above, the YPG ranges are routinely used as a backup for other western test and training ranges. Without the range instrumentation and munitions infrastructure, these efforts could not be supported. These ranges could not perform the these efforts at their facilities due to workload constraints particullarly with the additional workload from YPG. The multiple mission areas of Army ground force testing at YPG, could not be fully supported. All range instrumentation, and nearly every independent facility, are cross utilized for all mission areas at YPG. The Air Delivery (including C-17 qualification) and Tank/Automotive missions could not be supported.

3.1.B Facility Condition (MV II) - Measure of Merit: Current and planned status of the T&E facilities for supporting assigned test missions. Fill out the Facility Condition Form in Appendix A in accordance with the instructions. *RESPONSE:* Generally, YPG facilities are in Very Good to Excellent condition. Detailed data sheets are provided below.

radars, and other mission equipment sensitive to terrain. Unrestricted airspace, large land areas available for testing, and freedom from encroachment are YPG attributes critical to aviation and armament/weapons testing, evidenced by the fact that half of YPG artillery tests, which fired more than 13,000 projectiles in FY 93, required airspace clearance in excess of 30,000 feet. These attributes, combined with YPG facilities constructed specifically to support rotary wing, weapons, and munitions testing are unmatched by other Department of Defense testing facilities.

(a) Within the US Government? Yes/no. If yes, describe.

RESPONSE: Yes. see above.

(b) Within the US? Yes/no. If yes, describe

RESPONSE: Yes. See above.

(2) Are you currently providing support to DoD users outside your Military Department? Yes/no. If yes, indicate percentage of total workload in FY92 and FY93 by Military Department.

RESPONSE: Yes. YPG serves as a tri-service test and training facility. USMC makes daily use of the YPG restricted airspace for air combat training from the USMC Air Station - Yuma. Seventeen percent of YPG airspace utilization is by the USMC; Air Force and Navy account for ten percent of it's utilization. YPG is the site of the USMC Light Armored Vehicle Test Directorate. YPG is frequently used as the test site for Air Force and Navy systems, particularly armed aircraft; USAF AC-130U/H and Navy AH-1W tests are two recent examples. Air Force C-130 and C-141, USMC C-130 aircraft are common to the Y PG ranges in support of the air delivery mission. YPG is an acitve participant in the C-17 Combined Test Force at Edwards AFB and is preparing for the C-17 test activities that will take place at YPG. Based on percentage of direct test funds, the percentage workload for DoD users outside the Army are: FY 92 - 4.5%; FY 93 - 8.6%.

3.1.G Available air, land, and sea space (MV II) - Measure of Merit: Extent to which controlled test ranges satisfy weapon system test requirements.

(1) How many square miles of air, land, and sea space are available to support test operations?

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Aircraft Weapons Integration Range

ANNUAL HOURS OF DOWNTIME	1	2,956
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	8
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	16

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM) 8 1664
Air Vehicle	1	22	22	
Air Armament	2	11	22	
				ANNUAL UNCONSTRAINED CAPACITY 9 607,360
"TYPICAL"	4	15	60	
		TOTAL SUM	104	

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Aircraft Munitions Ranges

ANNUAL HOURS OF DOWNTIME	1	1,460
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	4
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	20

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY/DAY
4	5	6	7	8 1160
Small Arms	2	8	16	
Rocket Systems	2	9	18	
				ANNUAL UNCONSTRAINED CAPACITY
"TYPICAL"	3	8	24	$ 423,400
		TOTAL SUM	58	

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Air Vehicle/General Support Ranges

ANNUAL HOURS OF DOWNTIME	1	4,380
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	12
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	12

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR
4	5	6	7
Air Vehicle	2	20	40
General Support	4	10	40
"TYPICAL"	3	14	42
		TOTAL SUM	122

UNCONSTRAINED CAPACITY / DAY (LINE 3 X TOTAL SUM)

8 1464

ANNUAL UNCONSTRAINED CAPACITY

9 534360

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Direct Fire Ranges

ANNUAL HOURS OF DOWNTIME	1	3,640
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	10
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	14

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM) 8 2240
Gun and Munitions	2	32	64	
				ANNUAL UNCONSTRAINED CAPACITY 9 617,600
"TYPICAL"	3	32	96	
		TOTAL SUM	160	

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Artillery/Mortar Ranges

ANNUAL HOURS OF DOWNTIME	1	5,100
AVERAGE DOWNTIME PER DAY (LINE 1/365)	2	14
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	10

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM)
Artillery, Mortar, Demolition	4	13	52	8 1,560
				ANNUAL UNCONSTRAINED CAPACITY
"TYPICAL"	8	13	104	
		TOTAL SUM	156	9 569,400

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Mine Test Facility

ANNUAL HOURS OF DOWNTIME	1	3,640
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	10
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	14

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM) 8 2800
FASAM	1	40	40	
SINGLE MINE	2	40	80	
SYSTEM FIELD TEST	2	40	80	
				ANNUAL UNCONSTRAINED CAPACITY 9 1,022,000
"TYPICAL"	*			
		TOTAL SUM	200	

* ESTIMATES ONLY. NO HISTORICAL DATA EXISTS FOR THESE NEW FACILITIES. BREAKOUT REFLECTS MAXIMUM CAPACITY

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Physical Measurements

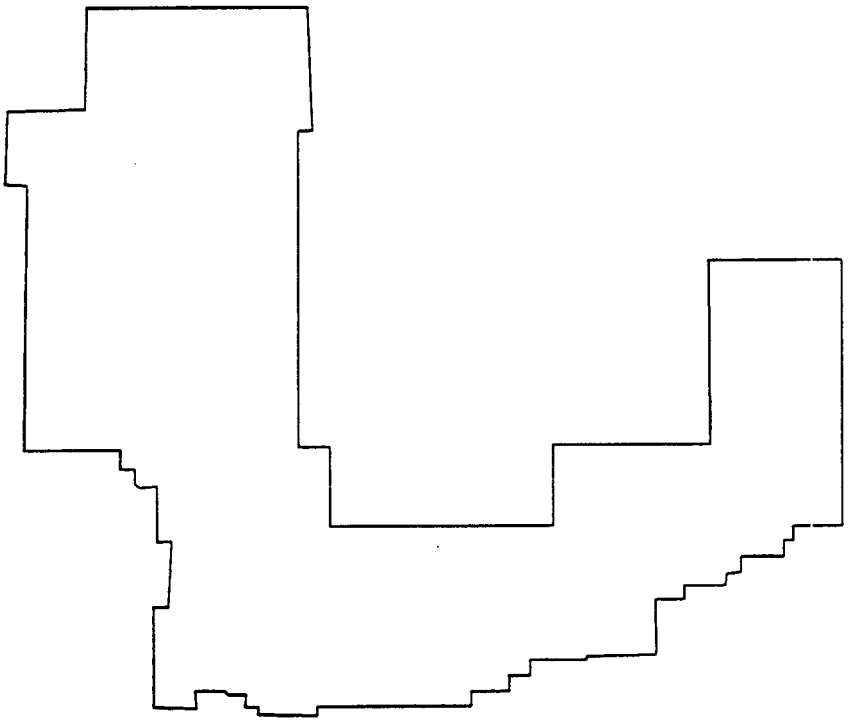
ANNUAL HOURS OF DOWNTIME	1	300
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	1
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	23

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM)
4	5	6	7	8 4,347
Radiography	6	4	24	
Material Analysis	10	4.4	44	
Physical Measurement	4	7	28	
Metal Working Section	6	3	18	ANNUAL UNCONSTRAINED CAPACITY
				9 1,566,655
"TYPICAL"	15	5	75	
		TOTAL SUM	189	

CLOSE HOLD/SENSITIVE

YUMA PROVING GROUND

BRAC DATA CALL #7



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SECTION 1 - Introduction

Yuma Proving Ground (YPG) is a U.S. Army Test and Evaluation Command proving ground with a 40-year tradition of supporting the development of weapons systems for the Department of Defense (DoD) services, private industry, and foreign governments. It is a multipurpose complex established in the Sonoran desert of southwestern Arizona. Centrally located between San Diego, California, to the west, and Phoenix, Arizona, to the northeast. YPG is just 250 miles southeast of Edwards Air Force Base and China Lake Naval Air Warfare Center and about 470 miles west of White Sands Missile Range. Covering a land area of about 1,300 square miles, about 830,000 acres, it is roughly 22 miles from the city of Yuma and bounded almost entirely by federal and state land. U.S. Highway 95, the only major road traversing the property, serves as a natural divider between the Kofa Range, used for large caliber munitions and mines testing, and the Cibola Range, focusing on the testing of helicopter integrated weapon systems and armament systems.

The mission areas assigned to YPG are classified as Aircraft Weapon Systems and Armament, Artillery, Tank/Automotive, and Air Delivery. All of these systems are elements of the ground, war. The artillery, tanks, and armed helicopters fight the war together. As modern communication and information processing technologies are applied to weapon systems, testing these systems requires increased combined test operations. YPG, with its broad base of capabilities, is poised to support the development efforts of the *Digital Battlefield* technology. Complete systems can be tested operating together against an array of different target types, with the entire scenario recorded utilizing an extensive data collection capability. YPG offers the land area, supported by real-time instrumentation, to allow simultaneous testing of multiple weapons systems in a realistic environment.

YPG is the desert test range for the Army, located in a hot dry desert that is remarkably similar to the middle eastern deserts in both climate and terrain. The desert is a challenging environment for equipment confined to operate on or near the ground. The environment at YPG also meets all requirements for helicopter operations. Helicopters operate in the terrain for cover and concealment as the primary countermeasure to enemy radar and other sensors. The rugged and varied terrain at YPG provides the operating environment required to characterize system performance in a realistic environment, real targets operating in hills and valleys as well as on flat lands. YPG is a near sea-level test range, providing the environment required to operate all helicopters in the services' inventories at maximum gross weight. Operations at higher altitudes or in high humidity conditions can significantly limit helicopter test operations.

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SECTION 1 - Introduction

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SECTION 2 - Methodology

The following outlines the data collection methodology for this data call:

2.1 Categorizing Workload

The percentage use of the individual resources was determined with the fundamental assumption that all activities at YPG are considered Test and Evaluation (T&E). Although several training exercises are conducted on the YPG ranges each year, less than 1% of annual funding at YPG is outside T&E. The breakdown of percentage use by T&E functional area was determined based on the percentage of funding utilized in the areas of Air Vehicles, Armament and Weapons (Aircraft Armaments and Surface-to-Surface), and other T&E. To accomplish this, the test program categories contained within the TECOM project number were utilized as follows:

AI - Aircraft; Air Vehicles
CO - Special Studies/Support (each program reviewed and categorized appropriately)
EE - Electronics (each program reviewed for application to Air Vehicles)
ES - Special Purpose Equipment (each program reviewed for application to Air Vehicles)
MI - Missiles; Armament/Weapons
MU - Munitions; Armament/Weapons
WE - Weapons; Armament/Weapons
All Others - Other T&E

2.2 Historical Workload

Only Fiscal Year 1993 Historical Workload data are readily available for each facility on the YPG ranges. Workload, as measured by direct labor hours, was attributed to a facility based on the financial cost center. Historical Workload data are available for all test programs conducted on the proving ground from 1986 through 1993 but could not be summarized by cost center. These data were compiled and are presented in Section 3 of this report. For the Open Air Range support facilities, the test hours and number of missions includes the sum of all testing supported in the primary areas of this data call (Air Vehicles, Armament/Weapons, and Electronic Combat (EC)). The trend of historical workload from 1986 to 1993 was established using the proving ground data and applied to 1993 actuals, for each facility, to estimate the historical workload by facility. The test hours for each facility include 1992 and 1993 actuals with projections from 1986 through 1991.

SECTION 2 - Methodology

The following outlines the data collection methodology for this data call:

2.1 Tie to Board of Directors (BoD) Consolidation Studies

YPG participated as a member of the Air Armament and Surface-to-Surface Munitions teams for the BoD Consolidation Studies. These studies included technical and cost evaluations of relocating the YPG missions to Naval Air Warfare Center, Whites Sands Missile Range, and Eglin Air Force Base. Significant data was compiled for these efforts and provides the basis for data collection of this data call. The Test and Evaluation Reliance Instrumentation Board (TERIB) data base was the primary data source. These data were updated with additional information being tabulated as required. The methodologies used during the consolidation study were also used for this data call.

2.2 Categorizing Workload

The percentage use of the individual resources was determined with the fundamental assumption that all activities at YPG are considered Test and Evaluation (T&E). Although several training exercises are conducted on the YPG ranges each year, less than 1% of annual funding at YPG is outside T&E. The breakdown of percentage use by T&E functional area was determined based on the percentage of funding utilized in the areas of Air Vehicles, Armament and Weapons (Aircraft Armaments and Surface-to-Surface), and other T&E. To accomplish this, the test program categories contained within the TECOM project number were utilized as follows:

AI - Aircraft; Air Vehicles
CO - Special Studies/Support (each program reviewed and categorized appropriately)
EE - Electronics (each program reviewed for application to Air Vehicles)
ES - Special Purpose Equipment (each program reviewed for application to Air Vehicles)
MI - Missiles; Armament/Weapons
MU - Munitions; Armament/Weapons
WE - Weapons; Armament/Weapons
All Others - Other T&E

This approach is consistent with the methodology used in the BoD consolidation studies.

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2.3 Determination of Unconstrained Capacity

These data could only be compiled for the Measurement Facilities and Open Air Ranges but not for the Open Air Range support facilities (e.g. airfield support, range instrumentation). The Open Air Ranges are supported by numerous facilities that vary greatly with test requirements. Therefore, the capacity of the Open Air Ranges was assessed based on a typical mix of programs requiring varying degrees of support. In all cases, the limiting factors were not the supporting facilities but characteristics of the individual ranges or required operating environment (e.g. daylight conditions) for the types of testing conducted on those ranges. It is important to note that measurement of unconstrained capacity, based on test hours, does not necessarily identify the strengths or limitations of a particular facility. Where appropriate, the capacity data was annotated with notes reflecting measurements of the throughput of the facility.

2.4 Forecasted Workload

The list of appropriations anticipated to be supported was developed using the 'President's Budget', provided by Headquarters Test and Evaluation Command, from FY 94 through FY 99. Estimated workload for the Cold Regions Test Center and Tropical Test Center are included in YPG estimates starting in FY 95. The Aviation Technical Test Center provided workload estimates for FY 97. These estimates are incorporated in the YPG workload forecasts. Detailed forecasts for FY 98 and FY 99 are not presently available but were estimated based on the trends of the President's Budget in Air Vehicles and Armament/Weapons workload. FMS and Private Industry testing is anticipated to remain at equivalent levels of 1993 workload.

2.5 Personnel Forecasts

YPG test ranges share many support resources. Therefore, staffing levels of any particular facility can vary greatly. Personnel are cross-utilized throughout different areas of the proving ground. Therefore, estimates of personnel strength at the facility level are not easily defined. Actual staffing levels for FY 93 and FY 94 are included for all supporting facilities and measurement facilities. Personnel strengths reported for the Open Air Ranges are expressed in manyears applied to the range.

2.3 Historical Workload

Only Fiscal Year 1993 Historical Workload data are readily available for each facility on the YPG ranges. Workload, as measured by direct labor hours, was attributed to a facility based on the financial cost center. Historical Workload data are available for all test programs conducted on the proving ground from 1986 through 1993 but could not be summarized by cost center. These data were compiled and are presented in Section 3 of this report. For the Open Air Range support facilities, the test hours and number of missions includes the sum of all testing supported in the primary areas of this data call (Air Vehicles, Armament/Weapons, and Electronic Combat (EC)). The trend of historical workload from 1986 to 1993 was established using the proving ground data and applied to 1993 actuals, for each facility, to estimate the historical workload by facility. The test hours for each facility include 1992 and 1993 actuals with projections from 1986 through 1991.

2.4 Determination of Unconstrained Capacity

These data could only be compiled for the Measurement Facilities and Open Air Ranges but not for the Open Air Range support facilities (e.g. airfield support, range instrumentation). The Open Air Ranges are supported by numerous facilities that vary greatly with test requirements. Therefore, the capacity of the Open Air Ranges was assessed based on a typical mix of programs requiring varying degrees of support. In all cases, the limiting factors were not the supporting facilities but characteristics of the individual ranges or required operating environment (e.g. daylight conditions) for the types of testing conducted on those ranges. It is important to note that measurement of unconstrained capacity, based on test hours, does not necessarily identify the strengths or limitations of a particular facility. Where appropriate, the capacity data was annotated with notes reflecting measurements of the throughput of the facility.

2.5 Forecasted Workload

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Staffing levels beyond FY 94 are only included for those facilities that are anticipated to change based on a change in mission (e.g. addition of ammunition production acceptance testing). A detailed breakdown of the personnel strength for the proving ground is provided in Section 3.0.

2.6 Personnel Forecasts

YPG test ranges share many support resources. Therefore, staffing levels of any particular facility can vary greatly. Personnel are cross-utilized throughout different areas of the proving ground. Therefore, estimates of personnel strength at the facility level are not easily defined. Actual staffing levels for FY 93 and FY 94 are included for all supporting facilities and measurement facilities. Personnel strengths reported for the Open Air Ranges are expressed in manyears applied to the range. Staffing levels beyond FY 94 are only included for those facilities that are anticipated to change based on a change in mission (e.g. addition of ammunition production acceptance testing). A detailed breakdown of the personnel strength for the proving ground is provided in Section 3.0.

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ADDITIONAL INFORMATION

Facility/Capability Title: Aircraft Munitions Ranges

PERSONNEL - personnel reported for each supporting facility, total personnel listed year represents manyears attributed to these ranges

	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer							
Enlisted							
Civilian							
Contractor							
Total	25						

Total Square Footage: Included in supporting resources

Test Area Square Footage: 28128 acres

Office Space Square Footage: Included in supporting resources

Tonnage of Equipment: Included in supporting resources

Volume of Equipment: Included in supporting resources

Annual Maintenance Cost: Included in supporting resources

Estimated Moving Cost: Included in supporting resources

CAPITAL EQUIPMENT INVESTMENT

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
			0.300			

The following provides the historical workload for the proving ground.

2.1.A.1

HISTORICAL WORKLOAD (Direct Labor Hours)								
	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
Air Vehicle	83526	89814	100192	158463	164443	84666	97418	100305
Armament/Weapons	474907	550911	570460	634031	659961	570961	612861	546738
Other T&E	374561	459595	460048	391936	339779	512553	648201	740377
Total	932994	1100320	1130700	1184430	1161183	1168180	1358480	1387420

Question 2.3A Does the facility have a specified war-time or contingency role established in approved war plans?

RESPONSE: No. The mobilization mission is to accelerate and expand the testing and evaluation of production and developmental materiel items that are required to expand the Active Army as necessary to meet wartime force requirements.

The following responses are provided to questions in section 2.3:

Question 2.3.B Does the facility provide T&E prduct or service, without which irreparable harm would be imposed on the test mission of the host installation?

2.3.B.1 On the test mission of any other activity?

2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces onf the United States?

RESPONSE: Yuma Proving Ground provides test capabilities and services without which irreparable harm would be imposed on a number of U.S. Army critical mission needs. Examples are:

a. YPG provides desert testing for all Army systems. YPG is located in a hot, low altitude desert environment which is the closest analog to the middle east deserts of any test facility. The inability to test weapon systems in a natural desert environment would jeopardize the Army's ability to execute missions in desert areas with any confidence that the weapon systems will perform as designed and the ability to quickly respond to urgent materiel development needs ad they arise during desert operations. This was proven during Desert Storm.

2.1.B Forecasted Workload

	Program Name	PE	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Air Vehicle	AVIATION TECHNOLOGY	62211	242	661	590		250	238	226
	AARMED AHIP	64220					300	285	271
	ADVANCE TECHNOLOGY LHX	64223	309	50	185	2129	4649	4417	4196
	ELECTRONIC WARFARE DEV	64270	160	55	311	300	800	760	722
	AVN ENGR DEV	64801					500	475	451
	LONGBOW	64816	2906	1085	1192	1400	1650	1568	1489
	ATCOM CMD/CTR SPT	65801					300	285	271
	R&D SUPPORT OF NONDEV ITEMS	65810	152	144	80	8	8	8	7
	AH-64 ATTACK HELICOPTER (APPACHE) MYP	A06605	464	776			130	124	117
	CH-47 CARGO HELICOPTER MODS(MYP)	AA0252					3301	3136	2979
	OH-58D MODS	AA0400	1180	613	489	144	698	663	630
	UH-60A(BLACK HAWK) MODS	AA0492					800	855	812
	AIRBORNE AVIONICS	AA0700					30	28	27
	ASE MODIFICATION	AA0720					80	76	72
	OTHER DLR	VARIOUS					1500	1425	1354
Armament Weapons	MISSILE TECHNOLOGY	62303	54						
	WEAPONS & MUNITION ADVANCE DEV	63004	112	314	6				
	AIR SELF DEFENSE	64202	21						
	STINGER	C18600	213	325	94	97	350	333	316
	PATRIOT	C49200			32				
	HELLFIRE	C70100			13	13	13	12	12
	ARMY TACTICAL MISSILE SYS	C98500	75	107	109	111	113	107	102
	CTG 25MM ALL TYPES	E08200		79					
	CTG 30MM ALL TYPES	E10100	22						
	GRENADE ALL TYPES	E34000	7						
	ROCKET HYDRA 70 ALL TYPES	E37300	390	390	390	350	350	333	316
	PROJ ARTY 155MM BASEBURNER M864	E68500	76						
	CTR, 120MM X-ROD (HERCULES)	E73300		127					
	CTG 105MM HERA XM913/XM928	23745		144					
	WEAPONS AND MUNITION TECHNOLOGY	62624	1518	2135	2479	2300	2380	2261	2148
	LIGHTWEIGHT 120MM TANK MAIN ARM SYS	63602			2252	2792	2500	2375	2256
	WIDE AREA MINE ENG DEV	64618	195	471	507	276	11	10	10
	CTG 9MM	EA3000	513	597	590	590	590	561	532
	MORTAR	64802	117	433	225				
	SADARM ENGINEERING DEVELOPMENT	64814	2985	1470	733	541			
	FIREFINDER IMPROVEMENT PROGRAM	BA5100	53	245	150	100	90	86	81
	MULTIPLE LAUNCH ROCKET SYSTEM	C65400	309	41	46	47	49	47	44
	MLRS	C67500			12				
	DRAGON	CL2000			13	13	13	12	12
	M119 LIGHT TOWED 105MM HOWITZER	G01300	5	17					
	M284 CANNON ASSEMBLY FOR M182 GUN MOUNT	GA0400	916	968	451	467	302	287	273
	ADVANCED TANK CANNON	63645	1148	2792	1818	958	2449	2327	2210
	ROCKETS	EA4000	110	128	157				

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Other T&E	COMBAT VEHICLE IMPROVEMENT PROGRAM	23736	918	154		41	643	611	580
	155MM SELF PROPELLED HIP	23743		144					
	AIRBORNE RECONNAISSANCE LOW	35889					450	428	406
	PROJECT 139	39050	51						
	ELECTRONIC SURVEILLANCE FUZING TECH	62120	101	293					
	TRACTOR HIP	62122					50	48	45
	CHEMICAL,SMOKE & EQ DEFEATING TECH	62622			255	23	23	22	21
	JOINT SERVICE SMALL ARMS PROGRAM	62623		98					
	LOGISTICS TECHNOLOGY	62786	60	118	715	450	650	618	587
	LOGISTICS ADVANCED TECHNOLOGY	63001	209	160	134	716			
	COMBAT VEHICLE & AUTO ADVANCED TECH	63005	97	469	150	247	40	38	36
	XT158L TRACK, HEAVY VEHICLE	63631	56	319	1554	1054	900	855	812
Other T&E	SOLDIER SUPPORT & SURVIVABILITY	63747		145	600	533	523	497	472
	PROGRAM TIGER	63797	1447	1516	1085	149	128	122	116
	ADVANCED MAINT CONCEPT & EQUIPMENT	63801	8	43	18	20	270	257	244
	AIRDROP EQUIPMENT ADVANCE DEV	63804	443	244	250	250	250	238	226
	CHEMICAL/BIOLOGICAL DEFENSE EQUIP	63806	21		178		25	24	23
	TARGET SYS DEV	64258					1000	950	903
	FAMILY OF MEDIUM TACTICAL VEHICLES	64604	309	698	783	380	566	538	511
	SCREENING SMOKE MATERIAL ENG DEV	64609	236	213	255	201	201	191	181
	ADVANCED ANTITANK WEAPON SYSTEM-MED	64611	236	13		159	159	151	143
	AIR TRAFFIC CONTROL	64633					10	10	9
	LASER COUNTERMEASURE	64710			145				
	CLOTHING AND EQUIPMENT	64713	90	108	313	748	798	758	720
	BAT	64768					250	238	226
	AIRDROP EQUIPMENT ENG DEV	64804	1228	637	1499	1900	1700	1615	1534
	COMMAND CONTROL & COMM SYS ENG DEV	64805	26	2	168	168	200	190	181
	NBC DEF SYS ENG DEV	64806			252	158	158	150	143
	LANDMINE WARFARE BARRIER ENG DEV	64808	4						
	ARMY TEST RANGES & FACILITIES	65601	459	980	2000	1400			
	ARMY TECHNICAL TEST INST & TARGETS	65602	1560	1160	443	198	803	763	725
	SUPPORT OF OPERATIONAL TESTING	65712	232	4	13	353	1086	1032	980
	ACTIVE ARMY SPT TO CINC INTEL	122189					500	475	451
	END ITEM INTERGRATED MATERIEL MANAGEMENT	721121	1107	541	192	139	54	51	49
	LOGISTICS SUPPORT ACTIVITIES	728012	241	76	361				
	CONVENTIONAL AMMUNITION MANAGEMENT	728041	215	603	3500	2122	1749	1662	1578
	DEPOT MAINTENANCE ACTIVITIES	732207	325	339	441	262	256	243	231
	TOTAL MAINTENANCE SUPPORT ACTIVITIES	738017	2150	760	71	177	14	13	13
	ATC/GROUND SPT	814773							
	LIGHT & SPECIAL DIV INTERIM SENSOR(LSD)	AD4500		11					
	SEMITRAILER TANK 5000 G	D02300		312	341	341	300	285	271
	TRAILOR HEAVY EXPANDED MOBILITY	D04700		112			258	245	233
	FAMILY OF MEDIUM TACTICLE VEH(MYP)	D14500	764	1254	1165	342	176	167	159
	HI MOB MULTI-PURP WHLD VEH (HMMWV)	D15400			89	114	118	112	106
	FAMILY OF HEAVY TACTICAL VEH (MYP)	D16500	96	796					
	TRAILER, COMBAT SUPPORT MZ00	DA0100	335	315	695	403	200	190	181
	PALLETIZED LOADING SYSTEM (PLS)	DA0500	1159	562	470	474	411	390	371

2.1.B Forecasted Workload

Other T&E	HEAVY EQUIPMENT TRANSPORTER SYS	DV0012	175	501	972	500	500	475	451
	SMALL UNIT SUPPORT VEHICLE	DV0014							
	MINE	EA0900	6						
	M1064 120MM MORTAR CARRIER	G02100				217	250	238	226
	BFVS SERIES	G80700	1640	1103	694	263	270	257	244
	M1/M1A1 ABRAMS TANK SERIES (MYP)	G82915	3039	1547	1654	2039	1475	1401	1331
	M109A6 155MM SP HOWITZER PALADIN	GA0401	57	313	106				
	M1 ABRAMS TANK (MOD)	GA0700	251	790	1500	1857	1000	950	903
	M88A1 MEDIUM RECOVERY VEHICLE	GA0925		223	63	63			
	FAASV PIP TO FLEET	GA8010		385	258	200			
	CARRIER, M113 ROLL	GB1930	63						
	DECONTAMINE APP PWR DR LT WT M17	M67400	338	300	1	1	1	1	1
	MASK PROTECTIVE NCBC	MA5000			15	13			
	GENERATOR AND ASSOCIATED EQUIP	MA9800							
	M9 ARMORED COMBAT EARTHMOVER	MO5900	23						
	TRAINING DEVICES, NONSYSTEM	NA0100					500	475	451
	MISCELLANEOUS	VARIOUS					2404	2284	2170
	OTHER	VARIOUS				50			
AIR FORCE	AIR FORCE		469	565	445	445	490	466	442
CAWF	CAWF		6038	6468	9750	7800	6240	5928	5632
DOD	DOD		1492	1923	1522	1200	3356	3188	3029
EC	ARMORED SYS MOD ENG DEV	64645	12	59	43	364	46	44	42
FMS/MIV	FMS/MIV		1562	2391	1541	2180	1958	1860	1767
NAVY	NAVY		1962	1840	2033	1275	200	190	181

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SECTION 3 - Capacity and Technical Resources

3.0 General Supporting Data

The following provides information used as supporting data for this data call. It defines overall personnel strength forecast through FY 99. These data represent the personnel strength for all missions at the proving ground. Based on historical workload, 43.8 percent of the test personnel support the mission areas considered in this data call.

PERSONNEL STRENGTH						
	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
OFFICERS						
TEST	15	31	31	70	70	70
BASE OPS	5	5	5	5	5	5
ENLISTED						
TEST	97	164	164	193	193	193
BASE OPS	82	50	50	50	50	50
CIVILIANS						
TEST	425	476	471	565	560	555
BASE OPS	327	333	330	333	329	325
CONTRACTORS						
TEST	465	525	357	542	531	523
BASE OPS	185	185	151	165	162	158
TOTAL						
TEST	1002	1193	1023	1370	1354	1341
BASE OPS	599	573	536	553	546	538
GRAND TOTAL	1601	1766	1559	1923	1900	1879

Note: Includes JPG, CRTC, TTC, and ATTC mission transfers to YPG.

b. YPG provides T&E services for Army developers of long range artillery weapons and munitions; it is the only provider of this service in the U.S. These systems must be tested during development prior to production to assure that they perform as designed and as required by the forces that use them. Testing of production lot samples must be conducted in order for the Army to be confident that the weapons and ammunition stockpiled for combat actually function in combat. Failure to provide this T&E service would jeopardize the Army's ability to fight.

c. YPG provides T&E service for developers of Army helicopter weapons systems. The range has been uniquely developed for this purpose and is not duplicated elsewhere. Helicopter weapons and helicopter target acquisition systems cannot be developed without these T&E services. These services are critical to the operational effectiveness of Army forces using aviation elements.

3.1 Over-Arching Measures of Merit

3.1.A Interconnectivity (MV1) - Measure of Merit: *Extent of linkage of this facility with other facilities and assessment of single-node failure potential.*

(1) What percentage of total test workload in FY93 involved the real-time or near real time exchange of data or control with another facility? List the facilities you interconnect to for test and identify how many are simultaneous activities. Identify these as to whether they are internal or external to the site.

RESPONSE:

EXTERNAL - Less than two percent. YPG is not integrated with other test ranges for real-time or near real-time data transfers. However, the YPG ranges are frequently used as a backup for other western test ranges. Test programs from Edwards Air Force Base, Naval Air Warfare Center-Weapons Division, Naval Air Warfare Center-Aircraft Division, Yuma Marine Corps Air Station, as well as national guard and reserve units are routinely supported.

INTERNAL - Approximately 30 percent. Real-time data transfer is routinely accomplished for nearly all aviation test missions. All range instrumentation supporting advanced technology testing is integrated into our data analysis and computation capability, the Mission Control Facility. This estimate does not include real-time data acquisition (which is done on nearly every test at YPG) but includes the transfer of data between resources.

SECTION 3 - Capacity and Technical Resources

3.0 General Supporting Data

The following provides information used as supporting data for this data call. It defines overall personnel strength forecast through FY 99 and provides the historical workload profile for the YPG test ranges.

PERSONNEL STRENGTH						
	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
OFFICERS	20	36	36	75	75	75
ENLISTED	179	214	214	243	243	243
CIVILIANS	752	809	801	898	889	880
CONTRACTORS	650	707	508	707	693	681
TOTAL	1601	1766	1559	1923	1900	1879
Note: Includes JPG, CRTC, TTC, and ATTC mission transfers to YPG.						

HISTORICAL WORKLOAD (Direct Labor Hours)								
	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
Air Vehicle	83526	89814	100192	158463	164443	84666	97418	100305
Armament/Weapons	474907	550911	570460	634031	659961	570961	612861	546738
Other T&E	374561	459595	460048	391936	339779	512553	648201	740377
Total	932994	1100320	1130700	1184430	1161183	1168180	1358480	1387420

3.1 Over-Arching Measures of Merit

3.1.A Interconnectivity (MV1) - Measure of Merit: *Extent of linkage of this facility with other facilities and assessment of single-node failure potential.*

(1) What percentage of total test workload in FY93 involved the real-time or near real time exchange of data or control with another facility? List the facilities you

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(2) If your facility were to be closed, would there be an impact on other facilities to which you are connected? Yes/no. If yes, explain.

RESPONSE: Yes. As stated above, the YPG ranges are routinely used as a backup for other western test and training ranges. Without the range instrumentation and munitions infrastructure, these efforts could not be supported. These ranges could not perform the these efforts at their facilities due to workload constraints particullarly with the additional workload from YPG. The multiple mission areas of Army ground force testing at YPG, could not be fully supported. All range instrumentation, and nearly every independent facility, are cross utilized for all mission areas at YPG. The Air Delivery (including C-17 qualification) and Tank/Automotive missions could not be supported.

3.1.B Facility Condition (MV II) - Measure of Merit: Current and planned status of the T&E facilities for supporting assigned test missions. Fill out the Facility Condition Form in Appendix A in accordance with the instructions. *RESPONSE:* Generally, YPG facilities are in Very Good to Excellent condition. Detailed data sheets are provided below.

interconnect to for test and identify how many are simultaneous activities. Identify these as to whether they are internal or external to the site.

RESPONSE:

EXTERNAL - Less than two percent. YPG is not integrated with other test ranges for real-time or near real-time data transfers. However, the YPG ranges are frequently used as a backup for other western test ranges. Test programs from Edwards Air Force Base, Naval Air Warfare Center-Weapons Division, Naval Air Warfare Center-Aircraft Division, Yuma Marine Corps Air Station, as well as national guard and reserve units are routinely supported.

INTERNAL - Approximately 30 percent. Real-time data transfer is routinely accomplished for nearly all aviation test missions. All range instrumentation supporting advanced technology testing is integrated into our data analysis and computation capability, the Mission Control Facility. This estimate does not include real-time data acquisition (which is done on nearly every test at YPG) but includes the transfer of data between resources.

(2) If your facility were to be closed, would there be an impact on other facilities to which you are connected? Yes/no. If yes, explain.

RESPONSE: Yes. As stated above, the YPG ranges are routinely used as a backup for other western test and training ranges. Without the range instrumentation and munitions infrastructure, these efforts could not be supported. These ranges could not perform the these efforts at their facilities due to workload constraints particullarly with the additional workload from YPG. The multiple mission areas of Army ground force testing at YPG, could not be fully supported. All range instrumentation, and nearly every independent facility, are cross utilized for all mission areas at YPG. The Air Delivery (including C-17 qualification) and Tank/Automotive missions could not be supported.

3.1.B Facility Condition (MV II) - Measure of Merit: Current and planned status of the T&E facilities for supporting assigned test missions. Fill out the Facility Condition Form in Appendix A in accordance with the instructions. *RESPONSE:* Generally, YPG facilities are in Very Good to Excellent condition. Detailed data sheets are provided below.

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3.1.C Environmental and Encroachment Carrying Capacity (MV II) - Measure of Merit: Extent of current and future potential environmental and encroachment impacts on air, land, and sea space for testing.

(1) Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility? Yes/no. If yes, explain.

RESPONSE: No. No limitations exist for the Air Vehicle and Armament/Weapons workload at YPG. The only potential limitation is that four percent of YPG withdrawn lands lie within a PM-10 non-attainment area for air quality. Air pollution regulations require that any new activities not further degrade the quality in these areas. These limitations only apply to our ground vehicle test ranges.

(2) How much could workload be increased before this limit would be reached? Express your answer as a percentage of your current workload.

RESPONSE: Not Applicable. There are no limiting factors.

(3) Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire? Please describe.

RESPONSE: Air quality permits for open burning and open detonation are renewed every three months. These permits are required to monitor the air quality of the four percent of YPG withdrawn lands. YPG direct-fire ranges are licensed by the Nuclear Regulatory Commission for open air testing of depleted uranium projectiles against soft targets. The current license expires in October, 1994, but the reapplication process is currently underway.

(4) What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

RESPONSE: 50-miles: 200,000; 100-miles: 350,000; 150-miles: 500,000; 200-miles: 4,500,000

(5) Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and frequency of use for each that affects or could affect mission accomplishment in your air, land, or sea space.

RESPONSE: NONE. State Highway 95 traversing YPG land space between the Kofa artillery test ranges and the Cibola aviation test ranges. As opposed to an adverse impact, this highway provides a natural barrier for the artillery and aviation test ranges.

(a) How many test missions per year are canceled due to commercial or public use?

RESPONSE: NONE

(6) What is the number of test missions that have been canceled due to encroachment in each of the last two years?

RESPONSE: NONE

3.1.D Specialized Test Support Facilities and Targets (MV 1) - Measure of Merit: Extent to which specialized test support facilities and targets are available.

(1) Do you have specialized facilities required to support you in conducting your test operations at your facility (e.g. aerial delivery load build-up facilities; parachute drying towers/packing facilities; paratroop support facilities; specialized fuel storage and delivery systems; mission planning facilities; corrosion control, painting, washing facilities; and specialized maintenance facilities such as avionics intermediate shops)? Yes/no. If yes, please describe.

RESPONSE: Yes. YPG is the Army's air delivery test facility. An extensive complex was established two years ago providing the facilities to support air delivery of personnel, munitions, and combat vehicles (including heavy load build up). A complete maintenance facility for combat vehicles is in place to support Tank/Automotive testing and target operations crucial for smart weapons and aircraft systems testing. A drone operations facility provides the infrastructure to support aerial targets for aircraft weapons testing. The aviation test range is designed around the rotary wing mission with aircraft tracking and telemetry receiving systems which allow operations with the aircraft at operational altitudes less than 50 feet. The Mine Test Facility is unique and YPG is the only Army installation facilitated to do high-volume testing of <u>all</u> Army/USMC cannon weapons and munitions. The Artillery/Armor Environmental Firing Chamber allows full firing at all elevations under simulated environmental conditions from -65 degrees to +160 degrees. This chamber also supports lightweight rotary wing aircraft for evaluations of weapons systems and target acquisition systems including, laser designation systems. The YPG radiographic facility is the only fully operational real-time x-ray facility. This automotation is essential to the YPG maission to handle the extensive number of munitions requiring x-ray each day.

(2) Are specialized targets required to support this facility? Yes/no. If yes, explain.

RESPONSE: Yes. Threat representative targets are required for evaluation of aircraft systems and smart weapons. YPG is the western depot for foreign ground targets. In addition, support is obtained from Pt. Mugu and Ft. Bliss for active emitting targets.

(a) Have the specialized targets been validated? Yes/no. If yes, by whom?

RESPONSE: Yes. Program Manager, Instrumentation, Targets, and Threat Simulators.

3.1.E Expandability (MV III) - Measure of Merit: Extent to which an installation/facility is able to expand to accommodate additional workload or new missions.

(1) Other than the expandability inherent in unconstrained capacity, discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each T&E functional area? Yes/no. If yes, explain.

RESPONSE: Yes. The land space at YPG offers extensive room for expansion. YPG controls several undeveloped range areas within boundaries of the proving ground. With virtually no civilian encroachment, YPG is a natural for expanding the artillery, including naval guns, and aviation test missions. The North Cibola ranges now used for limited Air Vehicle operations provide a natural protected range area of 112,000 acres for testing. These areas could be developed with minimum expenditure to support test operations such as directed energy weapons or large operational scenarios.

(a) Can you accept new T&E workload that is different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

RESPONSE: Yes. Within the aviation test area, rotary wing performance and handling qualities testing can be accepted with few facility upgrades. YPG provides a unique opportunity for supporting the development testing of the *Digital Battlefield* concepts for modernizing the interoperability of the Army's ground and air forces. With the four major commodity areas of Munitions and Weapons, Aircraft Systems, Air Delivery, and Tank/Automotive, and a heavily instrumented test range; YPG is poised to support this technology area. The terrain features at YPG and TSPI systems provide the capability to perform GPS testing under jamming conditions. As the YPG TSPI systems do not rely on GPS to obtain the required accuracies, these systems provide a low cost solution for testing of GPS and GPS integrated systems in realistic jamming conditions. YPG has demonstrated

experience with rotary wing target acquisition systems. This experience, coupled with the experience of UAV air vehicle testing, provide the oppurtunities for supporting testing of targeting sensors on UAV aircraft.

(2) Are airspace, land, and water areas - adjacent to areas under DoD control - available and/or suited for physical expansion to support new missions or increased footprints? Yes/no. If yes, please explain.

RESPONSE: Yes. Land adjoining YPG, with the exception of the Kofa Wildlife Refuge, has the potential for withdrawal, lease, or purchase as this land is virtually undeveloped.

(3) Is the facility equipped to support secure operations? Yes/no. If yes to what level of classification (Confidential, Secret, Top Secret, Special Access Required)?

RESPONSE: Yes. Test projects up to the SECRET level can be fully supported including secure data transfer and communications and data analysis/computation. YPG also has a fully functional SCIF and SSO with a secure conference room and storage for TS SCI material.

(4) Are there any capital improvements underway or programmed in the 95 FYDP that would change your capacity/capability? Yes/no. If yes, explain.

RESPONSE: Currently 12 BRAC MCA projects, totalling $51.11M, are underway to support the transfer of the Army's ammunition acceptance testing from Jefferson Proving Ground to YPG. Two additional MCA programs are programmed. The first is the development of a Target Recognition Range (FY 95) to support development of advanced technology target acquisition systems and the second is the construction of an aviation maintenance hangar facility (FY 97) to support the planned consolidation of the Army's aviation testing to YPG.

3.1.F Uniqueness (MV I) - Measure of Merit: Extent to which the facility is one-of-a kind.

(1) Is this a one-of-a kind facility within the DoD? Yes/no. If yes, describe.

RESPONSE: Yes. YPG is a unique *General Purpose* proving ground. It is the only proving ground within DoD that is fully equipped to support testing of nearly all Army weapons systems. The aviation test ranges allow for all aspects of rotary wing testing. The terrain features provide both a natural barrier for laser and munitions firing and a challenging environment for evaluations of target acquisition systems, terrain profiling

radars, and other mission equipment sensitive to terrain. Unrestricted airspace, large land areas available for testing, and freedom from encroachment are YPG attributes critical to aviation and armament/weapons testing, evidenced by the fact that half of YPG artillery tests, which fired more than 13,000 projectiles in FY 93, required airspace clearance in excess of 30,000 feet. These attributes, combined with YPG facilities constructed specifically to support rotary wing, weapons, and munitions testing are unmatched by other Department of Defense testing facilities.

(a) Within the US Government? Yes/no. If yes, describe.

RESPONSE: Yes. see above.

(b) Within the US? Yes/no. If yes, describe

RESPONSE: Yes. See above.

(2) Are you currently providing support to DoD users outside your Military Department? Yes/no. If yes, indicate percentage of total workload in FY92 and FY93 by Military Department.

RESPONSE: Yes. YPG serves as a tri-service test and training facility. USMC makes daily use of the YPG restricted airspace for air combat training from the USMC Air Station - Yuma. Seventeen percent of YPG airspace utilization is by the USMC; Air Force and Navy account for ten percent of it's utilization. YPG is the site of the USMC Light Armored Vehicle Test Directorate. YPG is frequently used as the test site for Air Force and Navy systems, particularly armed aircraft; USAF AC-130U/H and Navy AH-1W tests are two recent examples. Air Force C-130 and C-141, USMC C-130 aircraft are common to the Y PG ranges in support of the air delivery mission. YPG is an acitve participant in the C-17 Combined Test Force at Edwards AFB and is preparing for the C-17 test activities that will take place at YPG. Based on percentage of direct test funds, the percentage workload for DoD users outside the Army are: FY 92 - 4.5%; FY 93 - 8.6%.

3.1.G Available air, land, and sea space (MV II) - Measure of Merit: Extent to which controlled test ranges satisfy weapon system test requirements.

(1) How many square miles of air, land, and sea space are available to support test operations?

radars, and other mission equipment sensitive to terrain. Unrestricted airspace, large land areas available for testing, and freedom from encroachment are YPG attributes critical to aviation and armament/weapons testing, evidenced by the fact that half of YPG artillery tests, which fired more than 13,000 projectiles in FY 93, required airspace clearance in excess of 30,000 feet. These attributes, combined with YPG facilities constructed specifically to support rotary wing, weapons, and munitions testing are unmatched by other Department of Defense testing facilities.

(a) Within the US Government? Yes/no. If yes, describe.

RESPONSE: Yes. see above.

(b) Within the US? Yes/no. If yes, describe

RESPONSE: Yes. See above.

(2) Are you currently providing support to DoD users outside your Military Department? Yes/no. If yes, indicate percentage of total workload in FY92 and FY93 by Military Department.

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3.1.G Available air, land, and sea space (MV II) - Measure of Merit: Extent to which controlled test ranges satisfy weapon system test requirements.

(1) How many square miles of air, land, and sea space are available to support test operations?

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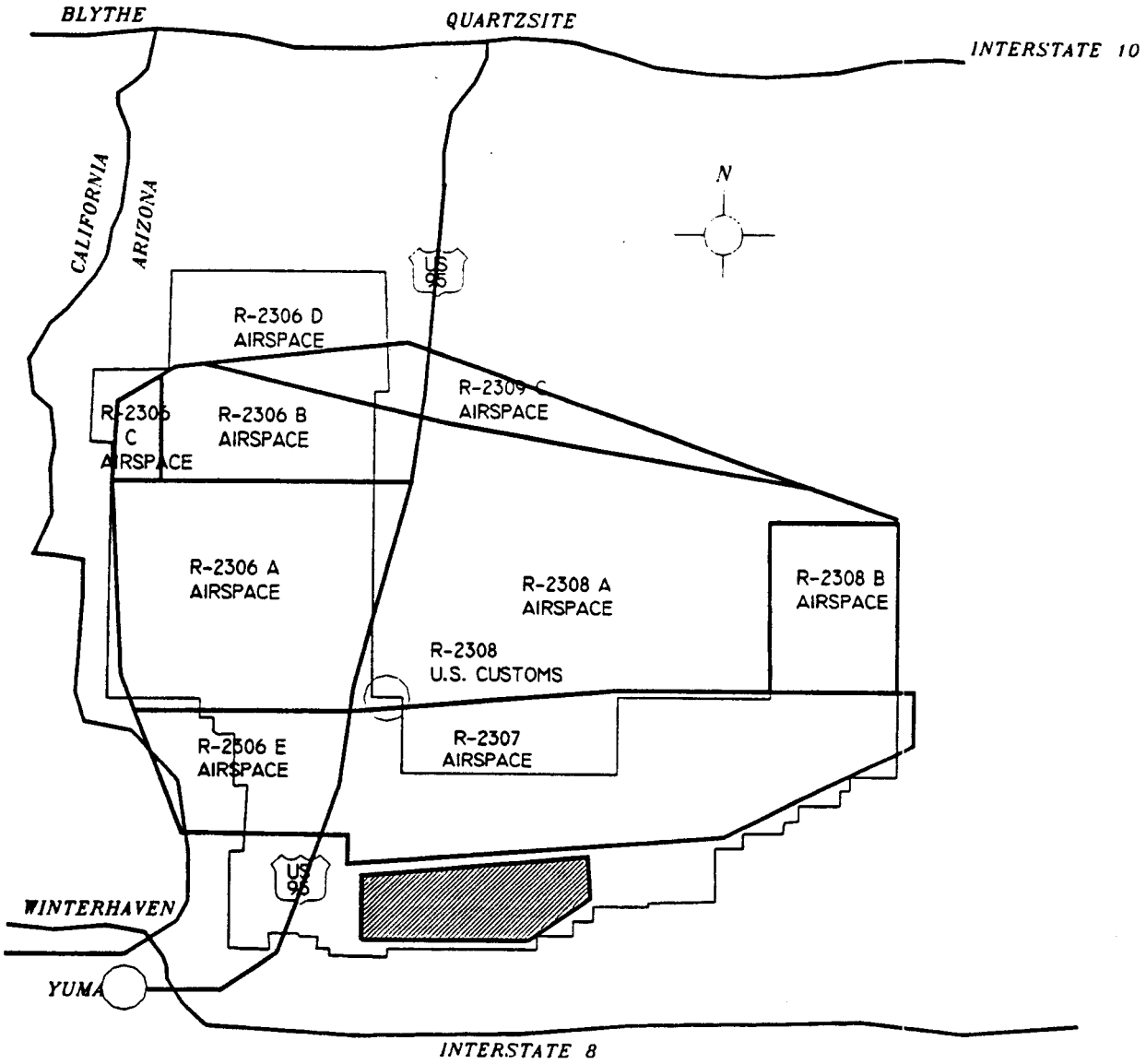
RESPONSE: 1,903 square miles of airspace and 1,310 square miles of ground space are available for test operations. No sea space is available. The figure below described the airspace at YPG.



36

The following presents the maximum altitudes for operations within the restricted areas:

R2306A: Surface to 80,000
R2306B: Surface to 80,000
R2306C: Surface to 17,000
R2306D: Surface to 23,000
R2306E: Surface to 80,000
R2307: Surface to UNLIMITED
R2308A: Surface to 80,000
R2308B: Surface to 80,000
R2308C: Surface to 23,000

(2) Who owns and or controls the land under the restricted airspace you use?

RESPONSE: Department of Defense (YPG) excluding the Kofa Wildlife Refuge under Restricted Area R-2308A and R-2308C which is controlled by the Department of the Interior. R-2309, a three mile circular area, is utilized by the U.S. Customs Service for operations of a border surveillance radar.

(3) How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

RESPONSE: 1,775 square miles of the airspace is Restricted Airspace, the remaining 28 square miles is a controlled firing area. Reclassification of this controlled firing area to Restricted Airspace is in process.

(4) Do you have special use airspace other than supersonic airspace? Yes/no. If yes, for what types of test (e.g. terrain following radar)? Dimensions? Will it support simultaneous users? Yes/no.

RESPONSE: A Controlled Firing Area is in place to support direct fire weapons and small arms acceptance testing. Multiple gun positions allow simultaneous use. This CFA covers approximately 128 square miles.

(5) Is the airspace over land or water? List the number of square miles over each.

RESPONSE: All airspace is over land.

(6) Identify known or projected airspace problems that may prevent accomplishing your mission

RESPONSE: None.

(7) What is the maximum straight line segment in your airspace in nautical miles?

RESPONSE: 56 nautical miles.

(8) What public airspace have you used for overflight of weapons systems in the past? What was the nature of those tests? Do you anticipate being able to use that same public airspace for similar tests in the future? Yes/no.

RESPONSE: None. The YPG restricted airspace and controlled firing areas are anticipated to be capable of supporting all future test requirements.

3.1.H Geographic/Climatological Features (MV II) - Measure of Merit: Extent to which types of climatic/geographic conditions represent world-wide operational conditions.

(1) Describe the topography and ground cover/vegetation within your test airspace (include nap-of-the-earth capability). Identify all of the following that apply: mountains, forest/jungle, cultivated lowland, swamp/riverain, desert, and sea. State the area of each in square miles.

RESPONSE: YPG is located in the basin and range geologic province of the lower sonoran desert ecosystem. The province is defined by a series of northwest-southeast trending fault block mountain ranges. Broad intermontane valleys separate the mountain ranges. Elevations at YPG range from 200 feet mean sea level (MSL) to over 2,700 feet MSL. Vegetation consists of desert xerophytes consisting of numerous types of cacti, desert legumes, and small perennial grasses. Rainfall averages about 3-inches perannum. Total YPG land mass is approximately 1306 square miles with mountainous areas covering 379 square miles. The remaining 931 square miles is low level desert area.

(2) Are there features of the local geology or soil conditions that enhance or inhibit any types of test?

RESPONSE: YPG offers a desert and mountain test platform that can simulate up to 60 percent of the world's deserts to varying degrees. This permits the installation to conduct environmental testing against a back drop of varying soil, geological, topographic, heat, and other stress conditions representative of the world's desert surface. The YPG ranges provide an excellent environment for the evaluation of rotary wing weapon systems. Helicopters are designed to operate in the terrain, therefore, the

YPG aviation ranges provide the challenging environment that is crucial for evaluation of air vehicle, target acquisition systems, and armament systems integrated on helicopters. Additionally, the broad valleys provide large flat surface areas that can be further developed with natural barriers to protect the test ranges from encroachment.

(3) Did you have to go to other geographical locations to satisfy test requirements? Yes/no and explain. If yes, provide as a percent of overall workload per year for the past 8 years.

RESPONSE: No.

(4) What is the number of days per year the average temperature is below 32 degrees F? between 32 and 95 degrees? above 95 degrees?

RESPONSE: Based on average minimum/maximum temperatures: below 32 degrees - none; between 32 and 95 degrees - 232 days; above 95 degrees - 133 days.

(5) What is the number of days per year the average relative humidity is below 30%? between 30 and 80%? above 80%?

RESPONSE: No daily records are available. Based on estimates from monthly data: below 30% - 120 days; between 30 and 80% - 243 days; above 80% - 2 days.

(6) What is the number of test missions per year (1985-1993) canceled due to weather?

RESPONSE: No records are available prior to FY 91. FY 91 - 11; FY 92 - 29; FY 93 - 22.

(7) What is the number of test days per year (1985-1993) canceled due to weather?

RESPONSE: No records are available as requirements for testing vary greatly. Estimate less than 5 days per year.

(8) What is the number of days per year the visibility is less than 1 mile? between 1 and 3 miles? greater than 3 miles?

RESPONSE: The visibility is greater than 3 miles, 360 days per year. Data for the other categories is not recorded.

(9) What is the average number of flying days available per year for flight test? Provide historical average from the past eight years.

RESPONSE: Based on eight years of historical data 360 days per year are available for flight test.

(10) What percentage of the time are your test operations restricted due to weather?

RESPONSE: Estimated - 1 percent. No records are available as requirements for testing vary greatly. Test operations are mainly limited due to wind conditions (2-3 days per year), rarely for cloud ceilings, and occasionally for high Wet Bulb Black Globe Temperature (WBGT) levels (a few hours per day in the summer).

3.2 Air Vehicles

This functional area includes facilities involved in the testing of all air vehicles, subsystems, or components whether fixed wing or rotary wing and test of major subsystems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre-and post-flight preparation and processing of the air vehicle. Unmanned air vehicles and cruise missiles are included.

a. Mission Statement

The air vehicle testing at YPG is focused around the development and qualification testing of integrated weapons systems on rotary wing aircraft. The instrumentation systems have been employed to support the unique aspects of helicopter testing including extreme low level operations and weapons firing on multiple lines of fire. The aviation test range is DoD's only sea level test range in a desert environment and therefore provides the operating environment representative of significant portions of the global arena. Air Vehicle testing at YPG also includes support for fighter, bomber, and other armed aircraft weapons and navigation systems integration as a backup range for other western test and training ranges. In addition, YPG has expanded its role in providing a test range for Unmanned Air Vehicles.

b. Detailed Questions

3.2.A Supersonic Airspace (MV II) - Measure of Merit: Extent of range size to support weapon system requirements.

(1) Do supersonic corridors or areas exist? Yes/no.

RESPONSE: No.

(2) Where are they located relative to your airfield?

RESPONSE: Not Applicable.

(3) At what altitude (upper and lower altitude)?

RESPONSE: Not Applicable.

(4) Over land or water? What size and shape (length and width)?

RESPONSE: Not Applicable.

(5) Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

RESPONSE: Not Applicable.

(6) What is the maximum number of simultaneous users?

RESPONSE: Not Applicable.

3.2.B Airfield and Facility Characteristics (MV II) - Measure of Merit: Extent of air vehicle infrastructure to support T&E operations.

(1) Provide a brief description of your airfield and support facilities, to include the following: number and azimuth of runways, elevation, runway length (excluding overrun), overrun length, terminal and/or landing aids, arresting cable (yes/no, type), ramp area (in square feet), construction material (runway and ramps), load capability, and hangar space.

RESPONSE: The aviation support facilities consist of three major facilities: Laguna Army Airfield (400 ft MSL), Castle Dome Heliport (650 ft MSL), and the Drone/UAV Operations Site (800 ft MSL). Laguna Army Airfield is the primary aviation facility at YPG and is a complete airfield complex with two runways (18/36, 06/24), 5330 feet (Class B) and 6,000 (Class A) feet, respectively. Each runway has an overrun of 500 feet. Two hangars (12,000 sq ft and 10,000 sq ft) provide the maintenance area required for on-site and transient aircraft. The facility has two approved rearming sites, and air delivery complex, IFR approach. Total ramp space is 359,000 sq ft. Programmed improvements at the airfield include runway extension to 6,500 feet (09/27), construction of an additional hangar complex (32,000 sq ft), construction of a 20,000 sq ft maintenance ramada, and an additional 100,000 sq ft of ramp space. The Castle Dome Heliport incorporates 20,000 sq ft of hangar and adjoining office and shop space. A 3,000 foot aluminum runway (09/27) is included in the complex. The Drone/UAV operations facility consists of a 3,750 sq ft hangar with an adjacent 100 sq ft engine runup pad. Approximately 1/4 mile from the hangar, maintaining the required safety separation, is the drone/UAV operations pad/runway. This launch area is 250,000 sq ft (500 ft by 500 ft providing ability to launch aircraft at any azimuth) and incorporates a 12 - foot high safety beam with an observation port. Adjacent to the launching pad is a 1,600 sq ft maintenance building.

(2) How close and how many emergency runways or airfields are in your area of operation?

RESPONSE: Nearby emergency runways or airfields are Fishers Landing, 15 - km northwest; Tyson Strip, 50 - km North; Dynamometer Test Strip, 5 - km northeast; Marine Corps Air Station, 25 kilometers southwest; Castle Dome Heliport, 15 - km northeast; Marine Corps Air Station Auxiliary Field #1, 18 kilometers south.

(3) Where is your airfield situated relative to working areas (airspace) for supporting test operations?

RESPONSE: Laguna Army Airfield (AAF) is located at the southwest corner of the YPG test area, within the restricted airspace used for test operations.

(4) What makes your airfield unique or at least suited for supporting test operations?

RESPONSE: Immediate proximity to the test ranges, located within restricted airspace, no encroachment of land or airspace. Full air delivery complex. Near sea-level, desert environment.

(5) Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitations(s).

RESPONSE: Laguna AAF is capable of handling unlimited C-130 traffic, C-141 aircraft up to 230,000 pounds, and C-17 aircraft up to 250 passes per year at up to 420,000 pounds gross weight.

(6) Including hangers and ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise missiles?

RESPONSE: Laguna AAF can support up to 37 F-5 size fighter aircraft, 20 large transport aircraft (within limitations outlined above), or over 30 large helicopters (UH-60 size). The drone facilities are capable of supporting up to 12 air vehicles. Cruise missiles were not considered as YPG does not presently support this mission area.

3.2.C Test Operations (MV II) - Measure of Merit: Extent of T&E operations that the airspace can accommodate.

(1) What types of air vehicle testing (fixed wing, rotary wing, unmanned vehicles, and cruise missiles) can be supported? (e.g. performance, handling qualities, fatigue life, static, wheels and brakes, physical integration with external stores or avionics)

RESPONSE: YPG's capabilities have been built around the rotary wing aircraft. The aviation ranges are uniquely suited to provide support for all aspects of rotary wing testing including performance, handling qualities, armament, targeting sensor, and mission equipment integration including fire control testing, aircraft survivability equipment, and navigation systems. The Unmanned Air Vehicle testing has focused on the evaluation of air vehicle performance. YPG is well equipped to perform sensor integration testing on these platforms as well.

(2) Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

RESPONSE: Yes. All ground support facilities required are in place at YPG for the missions outlined above. Typically, the Unmanned Air Vehicle programs will come equipped with the required ground control stations.

(3) What kinds, numbers of aircraft and mix can be supported (manned and unmanned)?

RESPONSE: To support the mission areas outlined above, YPG land and air space and range instrumentation is capable of supporting approximately four simultaneous air vehicle test operations. This estimate is based on a typical mix of aircraft performance, aircraft weapons, and unmanned vehicle tests requiring safety footprints and range instrumentation.

(4) Does UAV and or rotary wing operations pose any limitation on other types of missions? If yes, explain.

RESPONSE: Testing of weapons systems on rotary wing platforms can limit other aircraft operations. When testing unguided missiles/rocket systems or guided missile systems, a significant safety footprint is required (up to 40,000 feet in altitude with the aircraft operating at 50 feet AGL). In addition, a helicopter is designed to fire munitions on multiple lines of fire simultaneously, thereby limiting ground operations. The ground footprints of rotary wing weapons integration testing typically encompass 270 square miles with sufficient terrain to contain laser energy within the test area.

(5) What sorts of missions (e.g. air-to-air, air-to-ground, and refueling) can be flown within local airspace?

RESPONSE: All aspects of rotary wing weapons integration testing are supported including air-to-air, air-to-ground, and laser operations. Short to medium range air-to-air and air-to-ground weapons testing of other armed aircraft (e.g. fighters, bombers,

gunships) can be supported as well. The airspace has supported operations requiring refueling of B-52, F-111, and F-16 aircraft.

(6) What is the maximum number of simultaneous missions you can support that require telemetry?

RESPONSE: Over nine telemetry streams can be received simultaneously. With the typical mission at YPG requiring 2-3 telemetry streams, three simultaneous missions requiring telemetry can be supported.

(7) What is the largest number of simultaneous test missions you have supported in your airspace?

RESPONSE: Four aircraft/UAV operations with two air armament test programs have been supported simultaneously. This estimate does not include the Kofa Firing Range where surface-to-surface testing is conducted.

(8) Identify the number, types, and owners of aircraft at your installation.

RESPONSE: Three UH-1 and one OH-58C aircraft are owned and operated by YPG. One OH-58D(I) aircraft is assigned to YPG from the Kiowa Warrior Program Manager as a test platform.

c. Data Sheets

Detailed data sheets are enclosed.

3.3 Electronic Combat

This functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testings of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the RF (radio frequency) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

a. Mission Statement

YPG has no dedicated facilities to support Electronic Combat testing as defined above. The EC type of testing conducted at YPG includes the functional evaluation of Aircraft Survivability Equipment and Target Acquisition Systems and are considered as Air Vehicle testing for the purposes of this data call. The Army rotary wing EC testing is typically conducted at the China Lake EC range complex. The close proximity of China Lake to YPG makes the use of these ranges very practical.

b. Detailed Questions

No facilities at YPG support EC testing and therefore no responses are provided.

3.4 Armament/Weapons

This functional area includes facilities involved in the testing of the weapons portion of a weapon system. In those cases where the weapon system is composed almost exclusively of the weapon, it may include system-level and platform integration testing. In other cases, it addresses just the weapon subsystem (e.g., guidance and control, propulsion, warheads, and airframe) while the testing of the weapon system's vehicle is in another functional area.

a. Mission Statement

The armament/weapons test mission at YPG can be categorized in two main areas: Air Armaments and Surface-to-Surface. The Air Armament testing encompasses the development testing of rocket systems for both the Army and the Navy, the production acceptance testing of the Hydra-70 rocket system, and development and qualification testing of small arms helicopter weapons systems such as the Aerial Weapons System for the Apache helicopter. The test range is equipped to perform testing of small arms ammunition as well.

Surface-to-Surface testing encompassess development and production acceptance testing of aritllery and mortar weapons and munitions, direct fire weapons and munitions, and mine and demolition systems. Artillery, mortar and direct fire testing at YPG include testing of developmental systems like the Advanced Field Artillery System (AFAS) and, after termination of testing at Jefferson Proving Ground (JPG) at the end of FY 94, lot acceptance testing of all artillery, mortar, and tank munitions and their components. Mine testing includes testing of systems like VOLCANO and Modular Pack Mine System (MOPMS). The new YPG Mine Test Complex, built to accomodate transfer of mine testing from JPG, will be unique within the Department of Defense after the JPG closure at the end of FY 95. Testing of demolitions has included concept demonstration testing of systems like the Tactical Explosive System (TEX) and Penetration Augmented Munition (PAM). YPG ranges easily accomodate multiple tests of varying safety footproints, including the longest

ranges of developmental cannon aritlelery systems like AFAS. Unrestricted airspace, large land areas available for testing, and freedom from encroachment are YPG attributes critical to munitions testing, evidenced by the fact that half of YPG artillery tests, which fired more than 13,000 projectiles in FY 93, required airspace cleasrance in excess of 30,000 feet. These attributes, combined with YPG facilities constructed specifically to support weapon and munitions testing are unmatched by other Department of Defense testing facilities.

b. Detailed Questions

3.4.A Directed Energy (MV II) - Measure of Merit: Extent to which the facility satisfies directed energy weapon system test requirements. This includes testing of all types of directed energy weapons.

(1) Do you currently test directed energy weapon systems? Yes/no. If yes, explain. Describe the power source(s) you have available. What is your maximum downrange distance?

RESPONSE: Yes. YPG has supported testing of directed energy weapons. These tests typically utilize YPG's ranges to provide a sufficient area for secure test operations. No specific facilities are in place to support these activities. Power sources are typically provided by the range user for the specific test event.

3.4.B Rocket/Missile/Bomb Systems (MV II) - Measure of Merit: Extent capability satisfies weapon system test requirements. This includes the testing of all types of rocket, missile, and bomb systems at the system/subsystem/component level, both stand alone and integrated into the launch platform. This includes testing of air-to-air, air-to surface, and surface-to-air missiles.

(1) GROUND SPACE

(a) What is the area in square miles of the land and water space which you can use to conduct tests of live rocket, missile, or bomb systems?

RESPONSE: 1,276 square miles.

(b) How many separate and distinct land and water test areas are available to conduct tests of live weapons? List them and the size of each in acres.

RESPONSE: The test range is divided into two primary ranges: the Kofa Range (366,249 acres) for Surface-to-Surface munitions and systems and the Cibola Range

(451,537 acres) focusing on Aviation and Air Armament testing. Each of these major ranges are made up of several sub-ranges. The detailed data sheets provide additional information on the Aviation (Aircraft Weapons Integration, Aircraft Munitions, and Air Vehicle/General Purpose) and Surface-to-Surface (Direct Fire, Mines, and Artillery/Mortar) test ranges.

(c) What are the maximum ranges (nautical miles) you can test, by type of weapon?

RESPONSE: Maximum ranges of 35 nautical miles are available with no road closures or facility closures on the aviation test range. With the closing of State Highway 95 during test operations, maximum ranges of 42 nautical miles are available. These ranges are independent of type of weapon. The Kofa Range provides maximum ranges of 35 nautical miles for surface-to-surface testing.

(2) TEST OPERATIONS

(a) For each of your land and water ranges, how many test missions were scheduled in FY92 and FY93 that were required to use safety footprints comparable to those required for the following types of weapons:

RESPONSE: The following test missions were executed requiring safety footprints. All missions are categorized as short range missiles but include rockets, missiles, small arms, and artillery. The aviation testing includes Air Armament and Air Vehicle (weapons integration) testing.

Cibola Aviation Test Range: FY 92 - 359; FY 93 - 376
Kofa Surface-to-Surface Range: FY 92 - 1,079; FY 93 - 896

	92	93
AWIR	242	115
AMR	90	144
AVGS	56	45
	388	304

(b) Were flight termination systems required? Yes/no.
If no missions were scheduled in a category, give the reason(s).

RESPONSE: No. There has never been a requirement for flight termination systems other than for UAV operations.

(c) Were any scheduled missions canceled before the mission, or terminated/aborted during the mission because of encroachments into the safety footprint? Yes/no. If yes, how many per year?

RESPONSE: No.

c. Data Sheets

Detailed data sheets are enclosed.

3.5 Measurement Facilities

Detailed data sheets are enclosed for each measurement facility at YPG.

3.6 Open Air Range Support Facilities

Detailed data sheets are enclosed for each Open Air Range support facility at YPG. Measurements of Unconstrained Capacity are included in the Open Air Range data sheets in Sections 3.2 and 3.4 above.

GENERAL INFORMATION

Facility/Capability Title: Aircraft Weapons Integration Range

Date: 31 May 94

Service: A

Organization_Activity: Yuma Proving Ground

Location: Yuma, Az

TE Functional Area: Air Vehicle

UIC: W04X

TE Facility Category: OAR

	T&E	S&T	DE	IE	T&D	Other
PERCENTAGE USE:	100					

BREAKOUT BY T&E FUNCTION AREA (%)

Air Vehicle	78
EC	0
Armament/Weapons	22
Other T&E	0
Other	0

ref AW 001 all airamaments.

Total In Breakout Must Equal "Percentage Use" On First Line

TECHNICAL INFORMATION

Facility/Capability Title: Aircraft Weapons Integration Range

Facility Description:
The aircraft weapons integration ranges are a compilation of six distinct test ranges [Prospect Square Firing Range, Radar Systems Range, CACTIS Laser Accuracy Range, Cibola Direct Fire Range, Cibola Moving Target Range, and the Target Recognition Range] and the general support range of the Cibola Range Complex. These ranges focus on the development and qualification testing of fire control and mission equipment systems integrated on rotary wing aircraft. The range instrumentation systems supporting the weapons integration ranges were established to support the rotary wing test mission. Over 111,000 acres are available for testing of these integrated systems.

Interconnectivity/Multiuse of TE Facility:
In addition to the Army rotary wing test mission, these ranges have supported testing for the Navy and Air Force. YPG supported Edwards AFB to evaluate B-1B weapons delivery performance at sea-level. The qualification testing for the integration of GPS into the F-16 Block 40 and B-52G aircraft was conducted at YPG for navigation and weapons system delivery accuracy. Multiple AC-130 test programs and Navy armed helicopter test programs have been supported on these ranges.

Type of Test Supported:
Target Acquisition System, Laser Designation Accuracy, Fire Control Development, Radar Systems Integration.

Summary of Technical Capabilities:
These ranges provide the infrastructure and operating environment for development and qualification testing of integrated weapon systems. The instrumentation is focused around the rotary wing mission but is capable of supporting fighter and bomber test missions.

Keywords: weapons delivery, integration, target acquisition, laser

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FACILITY CONDITION

Facility/Capability Title: Aircraft Weapons Integration Ranges

Facility Age: 25 yrs

Replacement Value: not compiled - Instrumentation resources presented below

Maintenance/Repair Backlog: NONE

Date of Last Upgrade: See detailed instrumentation breakout

Nature of Last Upgrade:

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: Incorporate Aircraft Acoustic Scoring Range

   TOTAL PROGRAMMED AMOUNT: 0.50M

   SUMMARY DESCRIPTION: Development of an acoustic scoring range to support fire control system evaluation of air armament systems and rotary wing fire control systems.

2. UPGRADE TITLE: Weapons System Integration Lab

   TOTAL PROGRAMMED AMOUNT: 0.75M

   SUMMARY DESCRIPTION: Upgrade weapons system integration capability to include modernization of integration laboratories and incorporation of mission equipment emulation.

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Aircraft Weapons Integration Range

ANNUAL HOURS OF DOWNTIME	1	2,956
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	8
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	16

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM)
4	5	6	7	8 1664
Air Vehicle	1	22	22	
Air Armament	2	11	22	
				ANNUAL UNCONSTRAINED CAPACITY
				9 607,360
"TYPICAL"	4	15	60	
		TOTAL SUM	104	

53 4

91

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Aircraft Weapons Integration Range

ANNUAL HOURS OF DOWNTIME	1	2,956
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	8
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	16

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM) 8 624
Air Vehicle	2	9	18	
Air Armament	2	3	6	
				ANNUAL UNCONSTRAINED CAPACITY 9 227,760
"TYPICAL"	4	5 (ave)	25	
		TOTAL SUM	39	

REVISED

HISTORICAL WORKLOAD

Facility/Capability Title: AWIR

		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
AIR VEHICLES	Direct Labor Hours	58987	63428	70757	111909	114014	59792	~~68798~~	70837
	Test Hours	2662	2863	3193	5051	5146	2699	5544	3197
	Missions	340	365	408	645	657	~~344~~	744	~~408~~
EC	Direct Labor Hours								
	Test Hours								
	Missions								
ARMAMENT WEAPONS	Direct Labor Hours	17317	20088	20801	23119	24065	20819	22347	19936
	Test Hours	782	907	939	1044	1086	940	12.4 1802	22.15 900
	Missions	100	116	120	133	139	~~120~~	242	115
OTHER T&E	Direct Labor Hours								
	Test Hours								
	Missions								
OTHER	Direct Labor Hours								
	Test Hours								
	Missions								

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ADDITIONAL INFORMATION

Facility/Capability Title: Aircraft Weapons Integration Ranges

PERSONNEL - All personnel reported in supporting resources below, total personnel reported here in manyears supporting these ranges

	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer							
Enlisted							
Civilian							
Contractor							
Total	43.6						

Total Square Footage: reported in supporting resources

Test Area Square Footage: 111291 acres

Office Space Square Footage: reported in supporting resources

Tonnage of Equipment: reported in supporting resources

Volume of Equipment: reported in supporting resources

Annual Maintenance Cost: reported in supporting resources

Estimated Moving Cost: reported in supporting resources

CAPITAL EQUIPMENT INVESTMENT

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
		0.450		0.600		

55

GENERAL INFORMATION

Facility/Capability Title: Aircraft Munitions Ranges

Date: 31 May 94

Service: A

Organization_Activity: Yuma Proving Ground

Location: Yuma, Az

TE Functional Area: Armament/Weapons

UIC: W04X

TE Facility Category: OAR

	T&E	S&T	DE	IE	T&D	Other
PERCENTAGE USE:	100					

BREAKOUT BY T&E FUNCTION AREA (%)

Air Vehicle	0
EC	0
Armament/Weapons	100
Other T&E	0
Other	0

Total in Breakout Must Equal "Percentage Use" On First Line

TECHNICAL INFORMATION

Facility/Capability Title: Aircraft Munitions Ranges

Facility Description:
The aircraft munitions ranges are comprised of 5 distinct test ranges including the Small Arms Scoring Range, Graze Firing Range, Rocket Alley Live Fire Range, West Gun Firing Range, and Armament Loading Range. 28,128 acres are available for evaluation of air armament systems. These ranges utilize shared instrumentation with the Kofa artillery ranges including ballistic measurements, munitions TSPI, and telemetry. Details of these instrumentation resources are outlined below.

Interconnectivity/Multiuse of TE Facility: In addition to air armament testing, these ranges support aircraft weapons integration testing and ground vehicle weapons integration testing.

Type of Test Supported: Ballistic measurement, production acceptance, dispersion, weapons qualification.

Summary of Technical Capabilities: Detailed technical capabilities are provided in the support instrumentation description below.

Keywords: rockets, guns, small arms, ballistics, munitions

FACILITY CONDITION

Facility/Capability Title: Aircraft Munitions Ranges

Facility Age: 25 yrs

Replacement Value: not compiled - incorporated in support resources below

Maintenance/Repair Backlog: Target repair, small arms scoring range (0.075M)

Date of Last Upgrade: 1994

Nature of Last Upgrade: relocation of helicopter munitions loading facility

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: Reconstruction of small arms scoring target

   TOTAL PROGRAMMED AMOUNT: 0.075M

   SUMMARY DESCRIPTION: Refurbishment of the target supporting small arms scoring

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Aircraft Munitions Ranges

ANNUAL HOURS OF DOWNTIME	1	1,460
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	4
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	20

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY/DAY
4	5	6	7	8 1160
Small Arms	2	8	16	
Rocket Systems	2	9	18	
				ANNUAL UNCONSTRAINED CAPACITY
				$ 423,400
"TYPICAL"	3	8	24	
		TOTAL SUM	58	

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59A

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DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Aircraft Munitions Ranges

ANNUAL HOURS OF DOWNTIME	1	1,460
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	4
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	20

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY/DAY
4	5	6	7	8 160
Small Arms	2	8	16	
Rocket Systems	2	9	18	
				ANNUAL UNCONSTRAINED CAPACITY
"TYPICAL"	3	8	24	9 423,400
		TOTAL SUM	58	

REVISED

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HISTORICAL WORKLOAD

Facility/Capability Title: Aircraft Munitions Ranges

		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 9
AIR VEHICLES	Direct Labor Hours								
	Test Hours								
	Missions								
EC	Direct Labor Hours								
	Test Hours								
	Missions								
ARMAMENT WEAPONS	Direct Labor Hours	45257	52500	54363	60421	62862	54410	58403	521(
	Test Hours	1399	1623	1681	1868	1945	1682	1031	161
	Missions	125	145	150	167	174	~~150~~	~~90~~	144
OTHER T&E	Direct Labor Hours								
	Test Hours								
	Missions								
OTHER	Direct Labor Hours								
	Test Hours								
	Missions								

ADDITIONAL INFORMATION

Facility/Capability Title: Aircraft Munitions Ranges

PERSONNEL - personnel reported for each supporting facility, total personnel listed year represents manyears attributed to these ranges

	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer							
Enlisted							
Civilian							
Contractor							
Total	25						

Total Square Footage: Included in supporting resources

Test Area Square Footage: 28128 acres

Tonnage of Equipment: Included in supporting resources

Annual Maintenance Cost: Included in supporting resources

Office Space Square Footage: Included in supporting resources

Volume of Equipment: Included in supporting resources

Estimated Moving Cost: Included in supporting resources

CAPITAL EQUIPMENT INVESTMENT

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
			0.300			

GENERAL INFORMATION

Facility/Capability Title: Air Vehicle/General Support

Date: 31 May 94

Service: A

Organization_Activity: Yuma Proving Ground

Location: Yuma, Az

TE Functional Area: Air Vehicle

UIC: W04X

TE Facility Category: OAR

	T&E	S&T	DE	IE	T&D	Other
PERCENTAGE USE:	100					

BREAKOUT BY T&E FUNCTION AREA (%)

Air Vehicle	34
EC	0
Armament/Weapons	17
Other T&E	50
Other	0

of AW001 all air armaments

49% ?

Total In Breakout Must Equal "Percentage Use" On First Line

62

TECHNICAL INFORMATION

Facility/Capability Titl: Air Vehicle/General Support Ranges

Facility Description: These facilities are comprised of general support test areas utlized for air vehicle testing of rotary wing aircraft and unmanned air vehicles as well as various general support tests such as Ground Penetrating Radar. These ranges are heavily utilized for Air Delivery testing. The ranges are equipped with several instrumentation resources (as outlined below) such as Aircraft Tracking systems (radar, laser, optical) and telemetry systems. Meteorological data is an important part of these ranges.
Interconnectivity/Multiuse of TE Facility: These ranges are used by a wide variety of users to include UAVs, Army Rotary Wing, and multiple programs for other services. The ranges are interlinked with the EPG radar tracking systems significantly extended the area available for aircraft tracking.
Type of Test Supported: Air Vehicle performance, UAV system performance, navigation system testing, communication system testing.
Summary of Technical Capabilities: These ranges are fully instrumented to support vehicle performance of manned and unmanned aircraft. The TSPI systems are the heart of the instrumentation resources providing high accuracy trajectory data in all operational flight conditions.
Keywords: navigation, air vehicle, performance, UAV

FACILITY CONDITION

Facility/Capability Title: Air Vehicle/General Support Ranges

Facility Age: 25 yrs

Replacement Value: Incorporated into supporting resources below

Maintenance/Repair Backlog: None

Date of Last Upgrade: 1994

Nature of Last Upgrade: Drone/UAV operational safety improvements, additional UAV hangar construction

MAJOR UPGRADES PROGRAMMED: Incorporated into supporting resources below

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Air Vehicle/General Support Ranges

ANNUAL HOURS OF DOWNTIME	1	4,380
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	12
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	12

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7
Air Vehicle	2	20	40
General Support	4	10	40
"TYPICAL"	3	14	42
		TOTAL SUM	122

UNCONSTRAINED CAPACITY / DAY (LINE 3 X TOTAL SUM)

8 1464

ANNUAL UNCONSTRAINED CAPACITY

9 534360

65A

9

81

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Air Vehicle/General Support Ranges

ANNUAL HOURS OF DOWNTIME	1	4,380
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	12
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	12

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7
Air Vehicle	2	14	28
General Support	4	14	56
"TYPICAL"	3	14	42
		TOTAL SUM	124

UNCONSTRAINED CAPACITY / DAY (LINE 3 X TOTAL SUM)

8 1488

ANNUAL UNCONSTRAINED CAPACITY

9 543120

REVISED

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HISTORICAL WORKLOAD

Facility/Capability Title: Air Vehicle/General Support Ranges

		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 9
AIR VEHICLES	Direct Labor Hours	7912	8507	9490	15010	15292	8020	9228	950
	Test Hours	192	206	230	363	370	194	484	23(
	Missions	73	79	88	139	142	74	109	88
EC	Direct Labor Hours								
	Test Hours								
	Missions								
ARMAMENT WEAPONS	Direct Labor Hours	4091	4746	4914	5462	5685	4919	5280	471
	Test Hours	99	115	119	132	138	119	250	114
	Missions	39	45	47	52	54	47	56	45
OTHER T&E	Direct Labor Hours	7092	8702	8711	7421	6434	9705	12274	1401
	Test Hours	116	143	143	122	106	159	200	23(
	Missions	46	56	57	48	42	63	79	91
OTHER	Direct Labor Hours								
	Test Hours								
	Missions								

ADDITIONAL INFORMATION

Facility/Capability Title: Air Vehicle/General Support

PERSONNEL - Incorporated into the supporting resources, total personnel indicated here identifies manyears attributed to these ranges

	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer							
Enlisted							
Civilian							
Contractor							
Total	14						

Total Square Footage: Included in supporting resources

Test Area Square Footage: 111,291 acres

Office Space Square Footage: Included in supporting resources

Tonnage of Equipment: Included in supporting resources

Volume of Equipment: Included in supporting resources

Annual Maintenance Cost: Included in supporting resources

Estimated Moving Cost: Included in supporting resources

CAPITAL EQUIPMENT INVESTMENT

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99

GENERAL INFORMATION

Facility/Capability Title: Direct Fire Ranges

Date: 31 May 94

Service: A

Organization_Activity: Yuma Proving Ground

Location: Yuma, Az

TE Functional Area: Armament/Weapons

UIC: W04X

TE Facility Category: OAR

	T&E	S&T	DE	IE	T&D	Other
PERCENTAGE USE:	100					

BREAKOUT BY T&E FUNCTION AREA (%)

Air Vehicle	0
EC	0
Armament/Weapons	100
Other T&E	0
Other	0

Total In Breakout Must Equal "Percentage Use" On First Line

TECHNICAL INFORMATION

Facility/Capability Title: Direct Fire Ranges

Facility Description: This resource encompasses 4 permanent, instrumented tank weapon and munition ranges. Included are an instrumented acoustic range, a complete standard target range for testing tank cannon and munitions from fixed mounts on reaction masses), a partially developed standard target range (cleared of MMW debris for testing smart tank munitions like STAFF and XROD), and a new range being built in FY 94 to accomodate testing of non-DU munitions workload transferred from JPG under the BRAC Act. The rnages consist of permanent armored instrumentation/personnel shelters, firing pads and reaction masses (for fixed mounts or tanks), flash x-ray shelters and equipment, and target arrays (acoustic or folding steil target frames at ranges out to 4 kilometers). The ranges are licensed by the Nuclear Regulator Commission for testing of DU munitions.

Interconnectivity/Multiuse of TE Facility:

Type of Test Supported:
Weapon and weapon component performance testing
Weapon and munition accuracy
Munition interior and exterior ballistic testing
Safety testing, malfunction investigation
Weapon 'jump' analysis

Summary of Technical Capabilities: Oehler acoustic scoring system, velocimeters, tracking radars, high speed cameras, data reduction/analysis systems, inbore pressure measurement systems,

Keywords: direct fire, DU, weapons, accuracy

FACILITY CONDITION

Facility/Capability Title: Direct Fire Ranges

Facility Age: variable, newest facility 1994 Replacement Value: 21M

Maintenance/Repair Backlog: NONE

Date of Last Upgrade: To be completed in 2QFY95

Nature of Last Upgrade: Military construction to enhance range capabilities for transfer of production acceptance test mission from Jefferson Proving Ground. Construction ongoing at this time.

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: BRAC MCA Direct Fire Range

   TOTAL PROGRAMMED AMOUNT: 4.9M

   SUMMARY DESCRIPTION:Personnel/Instrumentation shelter, firing pads, reaction masses, targets

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Direct Fire Ranges

ANNUAL HOURS OF DOWNTIME	1	3,640
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	10
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	14

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM) 8 2240
Gun and Munitions	2	32	64	
				ANNUAL UNCONSTRAINED CAPACITY 9 817,600
"TYPICAL"	3	32	96	
		TOTAL SUM	160	

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Direct Fire Ranges

ANNUAL HOURS OF DOWNTIME	1	3,640
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	10
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	14

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM) 8 4500
Gun and Munitions	2	90	180	
				ANNUAL UNCONSTRAINED CAPACITY 9 1,642,500
"TYPICAL"	3	90	270	
		TOTAL SUM	450	

REVISED

HISTORICAL WORKLOAD

Facility/Capability Title: Direct Fire Ranges

		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 9
AIR VEHICLES	Direct Labor Hours								
	Test Hours								
	Missions								
EC	Direct Labor Hours								
	Test Hours								
	Missions								
ARMAMENT WEAPONS	Direct Labor Hours	44685	51837	53676	59658	62097	53723	57666	5144
	Test Hours	737	854	885	983	1024	886	717	848
	Missions								
OTHER T&E	Direct Labor Hours	84806	104059	104162	88740	76931	116049	146762	16763
	Test Hours	1065	1716	1718	1100	1269	1914	2421	2765
	Missions								
OTHER	Direct Labor Hours								
	Test Hours								
	Missions								

ADDITIONAL INFORMATION

Facility/Capability Title: Direct Fire Ranges

PERSONNEL - personnel reported under each supporting resource

	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer							
Enlisted							
Civilian							
Contractor							
Total							

Total Square Footage:

Test Area Square Footage:

Office Space Square Footage:

Tonnage of Equipment:

Volume of Equipment:

Annual Maintenance Cost:

Estimated Moving Cost:

CAPITAL EQUIPMENT INVESTMENT

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
		0.150	0.550			

GENERAL INFORMATION

Facility/Capability Title: Artillery/Mortar Test Ranges

Date: 31 May 94

Service: A

Organization_Activity: Yuma Proving Ground

Location: Yuma, Az

TE Functional Area: Armament/Weapons

UIC: W04X

TE Facility Category: OAR

	T&E	S&T	DE	IE	T&D	Other
PERCENTAGE USE:	100					

BREAKOUT BY T&E FUNCTION AREA (%)

Air Vehicle	0
EC	0
Armament/Weapons	100
Other T&E	0
Other	0

Total In Breakout Must Equal "Percentage Use" On First Line

TECHNICAL INFORMATION

Facility/Capability Title: Artillery/Mortar Test Ranges

Facility Description: These ranges support open air range testing of artillery, rocket, and mortar weapons and munitions and demolitions. Included in this resource are 5 gun positions being built under an MCA project to support the JPG BRAC transfer. Gravel and paved roads, specially-constructed impact areas, obervation towers, a test engineering operations center, a fire station, water, weage, electrical power, and communications infrastructure. Artillery weapons can be fired to ranges of 65 kilometers; ranges of 110 kilomters can be achieved with closure of State Highway 95. Unlimited airspace allows vertical firing of test projectiles to allow "soft" recovery with no impact damage to fuzes and other projectile components. Special impact areas allow evaluation of submunition performance. Dedicated impact areas are available for testing and easy recovery of inert munitions; recover of hazardous components is done with remotely operated robotic equipment. Expansive, remote areas also allow testing of engineering demolitions.

Interconnectivity/Multiuse of TE Facility:

Type of Test Supported:
Weapon and weapon component performance testing
Weapon and munition accuracy
Munition interior and exterior ballistic testing
Submunition or payload performance characteristic testing
Safety testing
Malfunction investigation

Summary of Technical Capabilities: Instrumentation and equipment used on these ranges is included in other resources that support testing at YPG.

Keywords: Artillery, Mortar, Demolitions, Rockets

FACILITY CONDITION

Facility/Capability Title: Artillery/Mortar Ranges

Facility Age: variable, newest facility built in FY 94 Replacement Value: 64M

Maintenance/Repair Backlog:

Date of Last Upgrade: Will be completed in 2QFY95

Nature of Last Upgrade: Military construction project to enhance range capabilities for accepting transfer of production acceptance test mission from JPG. Construction ongoin at this time.

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT: 24.5M (BRAC JPG)

   SUMMARY DESCRIPTION: Construction of new test engineering building, 5 artillery/mortar testing positions, and utilities, communications, and power system upgrades

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Artillery/Mortar Ranges

ANNUAL HOURS OF DOWNTIME	1	5,100
AVERAGE DOWNTIME PER DAY (LINE 1/365)	2	14
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	10

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM)
Artillery, Mortar, Demolition	4	13	52	8 1,560
				ANNUAL UNCONSTRAINED CAPACITY
"TYPICAL"	8	13	104	
		TOTAL SUM	156	9 569,400

20

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Artillery/Mortar Ranges

ANNUAL HOURS OF DOWNTIME	1	5,100
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	14
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	10

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM) 8 14,040
Artiller , Mortar, Demolition	4	117	468	
				ANNUAL UNCONSTRAINED CAPACITY 9 5,124,600
"TYPICAL"	8	117	936	
		TOTAL SUM	1404	

REVISED

HISTORICAL WORKLOAD

Facility/Capability Title: Artillery/Mortar Test Ranges

		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 9
AIR VEHICLES	Direct Labor Hours								
	Test Hours								
	Missions								
EC	Direct Labor Hours								
	Test Hours								
	Missions								
ARMAMENT WEAPONS	Direct Labor Hours	320462	371749	384940	427837	445335	385278	413552	3689
	Test Hours	2383	2765	2863	3182	3312	2866	4158	274
	Missions								
OTHER T&E	Direct Labor Hours								
	Test Hours								
	Missions								
OTHER	Direct Labor Hours								
	Test Hours								
	Missions								

ADDITIONAL INFORMATION

Facility/Capability Title: Artillery/Mortar Test Ranges

PERSONNEL - Personnel included in supported resources below							
	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer							
Enlisted							
Civilian							
Contractor							
Total							

Total Square Footage:

Test Area Square Footage:

Office Space Square Footage:

Tonnage of Equipment:

Volume of Equipment:

Annual Maintenance Cost:

Estimated Moving Cost:

CAPITAL EQUIPMENT INVESTMENT						
FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
0.41		0.55				

GENERAL INFORMATION

Facility/Capability Title: Mine Test Facility

Date: 31 May 94

Service: A

Organization_Activity: Yuma Proving Ground

Location: Yuma, Az

TE Functional Area: Armament/Weapons

UIC: W04X

TE Facility Category: OAR

	T&E	S&T	DE	IE	T&D	Other
PERCENTAGE USE:	100					

BREAKOUT BY T&E FUNCTION AREA (%)

Air Vehicle	0
EC	0
Armament/Weapons	100
Other T&E	0
Other	0

Total In Breakout Must Equal "Percentage Use" On First Line

TECHNICAL INFORMATION

Facility/Capability Title: Mine Test Facilities

Facility Description: Facilities include a FASCAM (Family of Scatterable Mines) test facility, a single-mine test facility, and areas on the range used to test Wide Area Mine, Penetration Augmented Munitions, and Selectable Lightweight Attack munitions. The FASCAM facility comprises two discrete mine delivery fields, each of which is instrumentated with video and acoustic arrays which allow testers to record and analyze mine system delivery effectiveness, count individual mines, and determine mine activation and function events. The fields are supported by a central mine temperature conditioning barricade which hourses 3 dedicated chambers. Data is recorded at a central location and transmitted by fiber optic cable to a joint control/data analysis building. The facility is designed such that personnel can work unprotected at one field while there are active mines on the other field. The single mine test facility, which is also controlled from the same control center, consists of 30 concrete lined pits, each containing a steil structure which allows deposition and functioning of single mines like GATOR and VOLCANO. The mines are deposited using specially constructed launchers. The mines can be remotely subjected to magnetic timuli and physically disturbed to test their function and lethality against armor.

Interconnectivity/Multiuse of TE Facility

Type of Test Supported:
Mine and mine component performance testing
Mine delivery system testing
Mine lethality
Safety testing
Malfunction investigation

Summary of Technical Capabilities: video monitoring, scoring systems, velocity measurement, acoustic measurement, acoustic monitoring, data recording and analysis

Keywords: Mine, FASCAM, Mine Test

FACILITY CONDITION

Facility/Capability Title: Mine Test Facility

Facility Age: New

Replacement Value: 8.3M

Maintenance/Repair Backlog: None

Date of Last Upgrade: Will be completed in 2QFY95

Nature of Last Upgrade:

MAJOR UPGRADES PROGRAMMED: Military consruction project to provide capabilities for accepting transfer of production acceptance test mission fro PG. Construction ongoing at this time.

1. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Mine Test Facility

ANNUAL HOURS OF DOWNTIME	1	3,640
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	10
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	14

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM) 8 2800
FASLM	1	40	40	
SINGLE MINE	2	40	80	
STSEM FIELD TEST	2	40	80	
				ANNUAL UNCONSTRAINED CAPACITY 9 1,022,000
"TYPICAL"	*			
		TOTAL SUM	200	

* ESTIMATES ONLY, NO HISTORICAL DATA EXISTS FOR THESE NEW FACILITIES. BREAKOUT REFLECTS MAXIMUM CAPACITY

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Mine Test Facility

ANNUAL HOURS OF DOWNTIME	1	3,640
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	10
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	14

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM) 8 23800
FASAM	1	300	300	
SINGLE MINE	2	300	600	
SYSEM FIELD TEST	2	400	800	
				ANNUAL UNCONSTRAINED CAPACITY 9 8687000
"TYPICAL"				
		TOTAL SUM	1700	

* ESTIMATES ONLY, NO HISTORICAL DATA EXISTS FOR THESE NEW FACILITIES

REVISED

HISTORICAL WORKLOAD

Facility/Capability Title: Mine Test Facility

		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
AIR VEHICLES	Direct Labor Hours								
	Test Hours								
	Missions								
EC	Direct Labor Hours								
	Test Hours								
	Missions								
ARMAMENT WEAPONS	Direct Labor Hours	9200	10695	11075	12309	12812	11084	11898	146
	Test Hours	not available							
	Missions								
OTHER T&E	Direct Labor Hours								
	Test Hours								
	Missions								
OTHER	Direct Labor Hours								
	Test Hours								
	Missions								

ADDITIONAL INFORMATION

Facility/Capability Title: Mine Test Facility

PERSONNEL - personnel included in supporting resources below							
	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer							
Enlisted							
Civilian							
Contractor							
Total							

Total Square Footage:

Test Area Square Footage:

Office Space Square Footage:

Tonnage of Equipment:

Volume of Equipment:

Annual Maintenance Cost:

Estimated Moving Cost:

CAPITAL EQUIPMENT INVESTMENT						
FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
1.740		0.602	0.650			

GENERAL INFORMATION

Facility/Capability Title: Environmental Simulation

Date:

Service: A

Organization_Activity: Yuma Proving Ground

Location: Yuma, Az

TE Functional Area: Armament/Weapons

UIC: W04X

TE Facility Category: MF

	T&E	S&T	DE	IE	T&D	Other
PERCENTAGE USE:	100					

BREAKOUT BY T&E FUNCTION AREA (%)

Air Vehicle	15
EC	0
Armament/Weapons	.85 [.09] = ~~7.65~~%
Other T&E	0
Other	0

RFC AW 001

Total In Breakout Must Equal "Percentage Use" On First Line

98

TECHNICAL INFORMATION

Facility/Capability Title: Environmental Simulation

Facility Description:
The environmental simulation capability is made up of dynamic test, climatic test, and special environmental test facilities; mobile temperature conditioning chambers, and open air range environmental simulation resources. The compilation of these facilities provide the full range of environmental simulation required for qualification and acceptance testing of a wide range of munitions for artillery, ground combat vehicles, and air vehicles. Detailed information is attached.

Interconnectivity/Multiuse of TE Facility:

These facilities are used for all mission areas at YPG for qualification of munitions and weapons integration testing of ground and air vehicles.

Type of Test Supported:

Shock and sine, random, random on random, loose cargo transportation, drop/impact, and holt and jumble environmeth simulation. Measurement of vehicle, aircraft, and artillery filed dynamic and thermal environments. Extreme high and low temperature, humidity, slat fog, high altitude, decompression, leadage, static/blowing rain, dust, and solar environment measurmeent and simulation. Extreme high and low temperature enviroment measurement and simulation. Enveloping flame, slow cook off, sympathetic detonation, and conflagaration safety tests. Thermal target facrication, prototype target simulation, and portable shelter climatic environment evaluation.

Summary of Technical Capabilities:
Multiple vibration test systmes providing full range of vetical, transverse, and longitudinal axis dynamic testing. Multiple conditioning chambers for temperature, humidity, salt fog, altitude, dust, range, and natural environment storage testing. Temperature conditioning chambers and firing shrouds for conditioning of munitions and weapon systems (up to tank size) prior to firing.

Keywords: environment, climatic, explosive safety, dynamic, MIL-STD-810

TECHNICAL INFORMATION

Facility/Capability Title: Environmental Simulation (continued)

Dynamic Test: The Dynamic Test resource consists of facilities and equipment required for the measurement and simulation of shock and vibration, loose cargo transportation, drop/impact, and jolt/jumble environments. All facilities are remotely controlled to permit testing of hazardous and explosive material. Video recording and climatic conditioning equipment is available for test item temperature preconditioning and the performance of dynamic tests at extreme temperatures, -100 to +160 degrees F. Laboratory and field tests are conducted in accordance with the requirements of MIL-STD 810E and ITOP test procedures to verify the reliability and performance of vehicle, aircraft, artillery, and general materiel and equipment. In addition, teh Dynamic Test resource conducts shock and vibration data acquisition and processing in conjunction with Aberdeen Proving Gound for the development of accelerated transportation environment vibration testing schedules for tracked vehicles and helicopters. The revised schedules are utilized for equipment design dynamic environment characterization and updating of the MIL-STD and ITOP test procedures.

Climatic Test: The climatic test resource consists of facilities and euqipment required for the measurement and simulation of extreme temperature, humidity, salft fog, altitude, dust, and rain environments. The YPG climatic test facility provides the capability for the simulation of extreme high and low temperature climatic environments defined in MIL-STD-810E and AR 70-38, including long term daily thermal/humidity cycles, thermal shock, and icing exposure. All test chambers are fabricated to permit remotely controlled testing of hazardous and explosive material. Climatic tests are supported by a 400 channel data acquisition and processing system to detemine thermal response characteristics. In addition, two natural desert exposure fields are utilized for the characterization and measurement of the thermal response and reliability of test items exposed to, or stored in desert environments.

Special Environmental Test: The Special Environmental Test resource consists of equipment required for the measurement and simulation of enveloping flame, slow cook off, sympathetic detonation, and conflagration safety environments for hazardous materials. Equipment also supports thermal target fabrication, prototype target simulation; artillery, vehicle, alarcraft temperature data acquisition; and portable shelter climatic environment evaluation.

Mobile Conditioning Chambers: The Mobile/ Transportable Temperature Chambers resource consists of equipment required for the support of extreme high and low temperature environemnts for test programs at remote artillery positions, KOFA and Cibola test ranges, and mine test facilities. Temperature conditioning requirements of test items for YPG firing range programs are supported by skid mounted chambers, mobile trailer mounted chambers, portable firing enclosures, and liquid CO2 storage tanks and transport equipment. Test chambers utilize mechanical refrigeration systems or liquid CO2 injection to provide the -100 to +180 Deg F temperature conditioning range. All test chambers are constructed to meet the safety requirements for hazardous and high explosive materials. Temperature chamber operation at YPG test sites is monitored at the main environmental test office by utilization of an RF data telemetry transmission system, INTRAC.

Environmental Firing Chambers: The Environmental Chambers resource consists of the Weapons Firing Chamber, WFC, and the Large Multi Purpose Environmental Chamber, LMPEC, facilities required for the evaluation of complete vehicle, helicopter, and aircraft systems. Both facilities provide controlled extreme temperature and humidity environements for engine starting, mechanical and electrical system operation, and live weapon test firing. The larger WFC is located at gun position 5 of the YPG KOFA firing range and has access to long range artillery impct zones through the use of a variable elevation vertical firing port. The LMPEC chamber is located on the Cibola firing range and has access to Cibola range through three firing ports . Both facilities are supported by Megadec 5000 computer data acquisition systems for complete temperature, pressure, timing, and other instrumentation requirements.

Open Air Range Environmental Simulation: The environmental test range is one portion of the Cibola Range complex and encompasses two drop towers and air delivery facilities. Budgeted manpower is allocated among the four primary test categories of ground-air, air-air, air-ground, and laser. The combined utilization for these ranges for FY 93 was: Use Efficiency - 75.9%, Utilization - 80.1%, and Surge of 82.4%.

FACILITY CONDITION

Facility/Capability Title: Environmental Simulation

Facility Age: 15-20 yrs Replacement Value: 33.95M

Maintenance/Repair Backlog: NONE

Date of Last Upgrade: 1994

Nature of Last Upgrade: New vibration test facility, two test systems, for production acceptance testing mission transferred from JPG. Administrative and chamber data monitoring facility improvements.

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: Artillery and Mortar Firing Positions

   TOTAL PROGRAMMED AMOUNT: 5.4M (FY 94)

   SUMMARY DESCRIPTION: Construction of permanent gun firing positions for pre-fire conditioning of weapons systems

2. UPGRADE TITLE: Maintenance Facility

   TOTAL PROGRAMMED AMOUNT: 2.0M (FY 95)

   SUMMARY DESCRIPTION: Construction of climatic equipment maintenance facility.

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Environmental Simulation

ANNUAL HOURS OF DOWNTIME	1	3,068
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	8
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	16

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY 8 11,760
Dynamic Test	10	16.7	167	
Climatic Test	11	24	264	
Special Environmental Testing	2	8	16	ANNUAL UNCONSTRAINED CAPACITY 9 4,292,400
"TYPICAL"	16	18	288	
		TOTAL SUM	735	

40

HISTORICAL WORKLOAD

Facility/Capability Title: Environmental Simulation

		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
AIR VEHICLES	Direct Labor Hours	22200	23871	26629	42117	42909	22503	25892	26659
	Test Hours	153	165	184	291	297	156	179	184
	Missions								
EC	Direct Labor Hours								
	Test Hours								
	Missions								
ARMAMENT WEAPONS	Direct Labor Hours	131222	152222	157624	175189	182354	157762	169340	151069
	Test Hours	1607	1864	1930	2145	2233	1932	2073	1850
	Missions								
OTHER T&E	Direct Labor Hours								
	Test Hours								
	Missions								
OTHER	Direct Labor Hours								
	Test Hours								
	Missions								

ADDITIONAL INFORMATION

Facility/Capability Title: Environment Simulation

PERSONNEL

	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer							
Enlisted							
Civilian	15	17	20				
Contractor	25	25	26				
Total	40	42	46				

Total Square Footage: 978144

Test Area Square Footage: 966144

Tonnage of Equipment: 1933

Annual Maintenance Cost: 0.688M

Office Space Square Footage: 4000

Volume of Equipment: 490764

Estimated Moving Cost: 1.785M

CAPITAL EQUIPMENT INVESTMENT

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
0.887	1.171	2.467	0.604	0.650		

GENERAL INFORMATION

Facility/Capability Title: Physical Measurements

Date:

Service: A

Organization_Activity: Yuma Proving Ground

Location: Yuma, Az

TE Functional Area: Armament/Weapons

UIC: W04X

TE Facility Category: MF

	T&E	S&T	DE	IE	T&D	Other
PERCENTAGE USE:	100					

BREAKOUT BY T&E FUNCTION AREA (%)

Air Vehicle	0
EC	0
Armament/Weapons	100
Other T&E	0
Other	0

Total In Breakout Must Equal "Percentage Use" On First Line

TECHNICAL INFORMATION

Facility/Capability Title: Physical Measurements Facility

Facility Description:
The physical measurement capability encompasses four primary functional areas of Radiographics, physical (metrology) measurements, materiel analysis, and metal working. The compilation of these facilities provides for a full range of testing in support of artillery, combat systems, and aircraft munitions.

Radiographic Facility:
This facility performs realtime robotic controlled radiography, static film based x-ray, film based flash xrays and realtime radiographic analysis of tires

Physical (metrology) Measurment Facility: The Physical Measurement Facility is used to perform metrology, nondestructive inspection (magnetic, particle, liquid dye penetrant, ultrasonic, infrared, hardness, etc), piezo electronic gage calibration and manufacture, copper crusher gage pressure measurements, moments of inertia, center of gravity, physical characteristics, pull-overs, star gaging, video borescopes, borescopes and weights.

Material Analysis Laboratory: Performs analysis of oils (wear metals), toxic fumes, viscosity measurements, harardous wastes (EPA SW 846), air cleaner adequacy, particle sizing, carbon residues, DU soil analysis, spectorgraphic analysis (IR, ICP, AA, X-Ray flourescence, X-Ray diffraction, GC/MS, Baird FAS-2c), carbon residues, distillations.

Metal Working Section: The metal working section supports the YPG test mission with machine ship functions. The metal working section capabilities include: welding (ferrous, nonferrous), machining (mills, lathes, drills), metal forming, metal stamping, heat creating, flame cutting, and metal hardness

Interconnectivity/Multiuse of TE Facility:
These facilities are critical elements in nearly all armament testing at YPG for inspection and failure analysis. The modernization of these facilities provided the capacity for processing the large number of munitions fired at YPG.

Type of Test Supported:
Radiographics of munitions, weapons, automotive tires, and submunitions. Metrology, nondestructive inspection, and ballistic measurements. Performance characteristics of munitions, weapons, and vehicles for wear of metals, toxic fumes, hazardous wastes, air cleaner adequacy, and environmental radiation monitoring. Fabrication of targets, fixtures, and facilities.

Summary of Technical Capabilities:
X-ray generators, pulsars, xoray doublers, and tire x-rays. Electronic star gages, controlled atmospheric measurements room, piezo electronic gage calibration equipment, magnetic particle inspection equipment. Infrared spectrophotometer, inductively coupled plasma arc spectrophotometer, atomic absopption spectorphotomet, x-sray flurescence, stray diffraction, fluid analyis spectrophotometer. Full range of metal working equipment.

Keywords: radiography, x-ray, pulsar, realtime, metrology, nondestructive, machining

FACILITY CONDITION

Facility/Capability Title: Physical Measurements

Facility Age: 8-20 yrs Replacement Value: 42.8M

Maintenance/Repair Backlog: NONE

Date of Last Upgrade: FY 93

Nature of Last Upgrade: Software upgrade for radiographic facility to enhance real-time data collection

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: Real-time Image Upgrade

   TOTAL PROGRAMMED AMOUNT: 0.028M

   SUMMARY DESCRIPTION: Improve quality of X-Rays

2. UPGRADE TITLE: Laboratory Information Management System

   TOTAL PROGRAMMED AMOUNT: 0.08M

   SUMMARY DESCRIPTION: Install LIMS to connect instruments to one file server enhancing data collection

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Physical Measurements

ANNUAL HOURS OF DOWNTIME	1	300
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	1
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	23

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM) 8 4,347
Radiography	6	4	24	
Material Analysis	10	4.4	44	
Physical Measurement	4	7	28	
Metal Working Section	6	3	18	ANNUAL UNCONSTRAINED CAPACITY 9 1,566,855
TYPICAL	15	5	75	
		TOTAL SUM	189	

$\Sigma = 31$

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Physical Measurements

ANNUAL HOURS OF DOWNTIME	1	300
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	1
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	23

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY/DAY (LINE 3 X TOTAL SUM) 8 4,437
Radiography	6	4	24	
Material Analysis	10	4.4	44	
Physical Measurement	4	7	28	
Metal Working Section	6	3	18	ANNUAL UNCONSTRAINED CAPACITY 9 1,586,655
"TYPICAL"	15	5	75	
		TOTAL SUM	114	

REVISED

HISTORICAL WORKLOAD

Facility/Capability Title: Physical Measurements

		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
AIR VEHICLES	Direct Labor Hours								
	Test Hours								
	Missions								
EC	Direct Labor Hours								
	Test Hours								
	Missions								
ARMAMENT WEAPONS	Direct Labor Hours	137024	158954	164594	182936	190418	164739	176828	157750
	Test Hours	1678	1946	2015	2240	2332	2017	2165	1932
	Missions								
OTHER T&E	Direct Labor Hours								
	Test Hours								
	Missions								
OTHER	Direct Labor Hours								
	Test Hours								
	Missions								

ADDITIONAL INFORMATION

Facility/Capability Title: Physical Measurements

PERSONNEL

	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer							
Enlisted	1	1	1				
Civilian	21	21	23				
Contractor	18	18	20				
Total	39	39	43				

Total Square Footage: 71310

Test Area Square Footage: 65900

Tonnage of Equipment: 171

Annual Maintenance Cost: 0.16M

Office Space Square Footage: 5400

Volume of Equipment: 20760

Estimated Moving Cost: 0.102M

CAPITAL EQUIPMENT INVESTMENT

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
608	599	545	460	420		

GENERAL INFORMATION

Facility/Capability Title: Munitions Handling, Processing, Storage

Date: 31 May 94

Service: A

Organization_Activity: Yuma Proving Ground

Location: Yuma, Az

TE Functional Area: Armament/Weapons

UIC: W04X

TE Facility Category: OAR

	T&E	S&T	DE	IE	T&D	Other
PERCENTAGE USE:	100					

BREAKOUT BY T&E FUNCTION AREA (%)

Air Vehicle	11
EC	0
Armament/Weapons	84
Other T&E	5
Other	

Total in Breakout Must Equal "Percentage Use" On First Line

TECHNICAL INFORMATION

Facility/Capability Title: Munitions Handling, Processing, Storage

Facility Description:
The ammunition handling, processing, and storage facilities provide the infrastructure for receiving, inspection, assembly, uploading, modifying, and disassembly of various types of munitions and components. The majority of the munitions handled are artillery munitionsm. Air Armaments include guided missile systems, rocket systems, and small arms. The ammunition recovery section functions are primarily performed in open air space throughout the YPG complex. Examples of recovery requirements include special handling and inspection of environmentally exposed munitions and demilitarization of munitions. A disassembly facility is now being constructed, with operations to begin in FY 95, to support the transfer of artillery acceptance testing from Jefferson Proving Ground to YPG. This facility will provide remote controlled working bays for many of the disassembly actions that are now being performed out in the elements. The munitions storage facilities at YPG are extensive providing 68,992 sq ft for high explosive munitions and 73,000 square feet for inert munitions. The capacity will be increased by 20,400 sq ft for HE and 22,250 sq ft for inert munitions storage in FY 95 for the JPG mission transfer.

Interconnectivity/Multiuse of TE Facility: Testing for all aspects of the Army's ground and air forces are supported. In addition, weapons integration testing for other military agencies is supported.

Type of Test Supported: These facilities support armament/weapons testing of artillery, tank, and aircraft munitions for development and production acceptance testing. In addition, weapons integration testing in air vehicles and ground combat vehicles is supported.

Summary of Technical Capabilities: Computer support equipment, ammunition peculiar equipment, weighing scales, multipresses and various material handling equipment, recovery heavy equipment including robotics for extremely hazardous recovery operations, and demolition peculiar equipment provide the capabilities of this facility.

Keywords: recover, disassembly, demilitarization, inspection, assembly, munitions

FACILITY CONDITION

Facility/Capability Title: Munitions Handling, Processing, Storage

Facility Age: 30 yrs Replacement Value: 63.23M

Maintenance/Repair Backlog: None

Date of Last Upgrade: 1994

Nature of Last Upgrade: Increase ammunition storage capacity to facilitate production acceptance test mission.

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: BRAC MCA 31923

   TOTAL PROGRAMMED AMOUNT: 4.6M

   SUMMARY DESCRIPTION: Construc ammunitions preparation building for production acceptance testing.

2. UPGRADE TITLE:

   TOTAL PROGRAMMED AMOUNT:

   SUMMARY DESCRIPTION:

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title:

NOTE: This facility supports the Open Air Range testing of armament/weapons considered under this data call. Open Air Ranges are supported by numerous facilities. The compilation of unconstrained capacity is provided in the detailed data sheets for each open air range but could not be determined by each supporting facility.

ANNUAL HOURS OF DOWNTIME	1	
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7
"TYPICAL"			
		TOTAL SUM	

HISTORICAL WORKLOAD

Facility/Capability Title: Munitions Processing/Handling/Storage

		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
AIR VEHICLES	Direct Labor Hours	8223	8842	9863	15599	15893	8335	9590	9874
	Test Hours	57	61	68	108	110	58	66	68
	Missions								
EC	Direct Labor Hours								
	Test Hours								
	Missions								
ARMAMENT WEAPONS	Direct Labor Hours	65497	75979	78675	87443	91019	78744	84523	75404
	Test Hours	802	930	963	1071	1114	964	1035	923
	Missions								
OTHER T&E	Direct Labor Hours	2271	2786	2789	2376	2060	3107	3930	4488
	Test Hours	1	1	1	1	1	2	2	2
	Missions								
OTHER	Direct Labor Hours								
	Test Hours								
	Missions								

ADDITIONAL INFORMATION

Facility/Capability Title: Munitions Handling, Processing, Storage

PERSONNEL							
	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer							
Enlisted	2	2					
Civilian	14	16					
Contractor							
Total	16	18					

Total Square Footage: 199383

Test Area Square Footage: 198183

Tonnage of Equipment: 400

Annual Maintenance Cost: 0.225M

Office Space Square Footage: 1200

Volume of Equipment: 26700

Estimated Moving Cost: 0.066M

CAPITAL EQUIPMENT INVESTMENT						
FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
0	0.076	0.080	0.333	0.200		

GENERAL INFORMATION

Facility/Capability Title: Aviation Support Facilities

Date: 31 May 94

Service: A

Organization_Activity: Yuma Proving Ground

Location: Yuma, Az

TE Functional Area: Air Vehicles

UIC: W04X

TE Facility Category: OAR

	T&E	S&T	DE	IE	T&D	Other
PERCENTAGE USE:	100					

BREAKOUT BY T&E FUNCTION AREA (%)

Air Vehicle	37
EC	0
Armament/Weapons	36
Other T&E	27
Other	0

Total In Breakout Must Equal "Percentage Use" On First Line

105

TECHNICAL INFORMATION

Facility/Capability Title: Aviation Support Facilities

Facility Description:
The aviation support facilities encompass the Laguna Army Airfield located adjacent to the YPG range complex and within restricted airspace, the Castle Dome Heliport located within the boundaries of the Kofa firing range, the UAV/Drone operations center located on the Cibola aviation test range, and support aircraft. Detailed descriptions of each facility are enclosed.

Interconnectivity/Multiuse of TE Facility:
These facilities provide support for multiservice training for the Marine Corps Air Station - Yuma, special operations forces, and the national guard and reserve as well as enroute facilities for transient aircraft. The support aircraft support environmental surveys for the U.S. Fish and Wildlife Service an Bureau of Land Management, emergency medical evacuation for recreational facilities on the Colorado River, and fire suppression. The UAV/Drone Operations Center and Castle Dome Heliport provide a staging area for short, medium, and long range UAV aircraft operating within YPG airspace and enroute to Ft. Huachuca.

Type of Test Supported:
Rotary Wing armament and weapons integration testing, air delivery, munitions, and UAV testing. Special operations and FORSCOM unit training.

Summary of Technical Capabilities:
Complete infrastructure to support depot maintenance of rotary wing aircraft including avionics maintenance.

Keywords: aviation, airfield, heliport, aircraft, UAV

TECHNICAL INFORMATION

Facility/Capability Title: Aviation Support Facilities (continued)

Laguna Army Airfield:
A complete airfield complex with 2 runways 5330 feet x 150 ft and 6000 ft by 100 ft. Two hangars , a control tower, CFR, and POL are available. The facility has two approved rearming sites, air delivery complex, IFR approach, and no noise abatement or civil encroachment restrictions. The fuel storage capacity is 64,000 gallons with 20,000 gallon upgrade planned. Covered hazardous material storage and EPA approved wash rack with water-oil separator are included in the facility. Existing ramp space totals 359,000 square feet. Near term upgrades include runway extension to 6,500 feet and construction of a 32,000 sq ft hangar complex with shop space and offices and a 20,000 sq ft maintenance/storage ramada with an additional 100,000 sq ft of ramp space are planned to support the Army Aviation consolidation efforts.

Castle Dome Heliport:
The heliport complex consists of 20,000 sq ft of hangar and adjoining office and shop space, a 10,000 gallon fuel storage area, a 3,000 ft by 75 ft aluminum runway, and a secure ramp area. No noise abatement or civil encroachment restrictions. Embedded in Restricted Area R-2307, this facility was selected for the full-scale development test and evaluation efforts of the RAH-66 Comanche program.

UAV/Drone Operations Center:
The UAV/Drone operations center includes a hangar, maintenance building, equipment parking hard stand, shade area, safety berm for personnel and equipment protection, and a launch pad. The site is located within the working airspace for UAV testing on the Cibola intstrumented range.

Support Aircraft:
Three UH-1, one OH-58D(I), and one OH-58C aircraft are utilized for a variety of missions including active targets for captive flight missile testing, munitions scoring, emergency medical evacuation, fire suppression, and photographic and safety chase. the OH-58D(I) is assigned at YPG as a test aircraft for the Kiowa Warrior Program Manager.

FACILITY CONDITION

Facility/Capability Title: Aviation Support Facilities

Facility Age: 30 yrs (ave) Replacement Value: 82.9M

Maintenance/Repair Backlog: NONE

Date of Last Upgrade: 1994

Nature of Last Upgrade: Upgrade runways, regrade shoulders, construct new taxiway at Laguna Army Airfield. Renovate electrical, communications, and HVAC, and remove asbestos at Castle Dome Heliport.

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: Construct additional hangar (Army Aviation Consolidation)

   TOTAL PROGRAMMED AMOUNT: 10.1M

   SUMMARY DESCRIPTION: Construct 32,000 sq ft hangar and 20,000 sq ft ramada with additional ramp space

2. UPGRADE TITLE: Complete Castle Dome Renovation

   TOTAL PROGRAMMED AMOUNT: 0.71M

   SUMMARY DESCRIPTION: Complete interior walls, install doors, windows, flooring, wiring, and lights. Install security fencing.

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Aviation Support Facilities

NOTE: This facility supports the Open Air Range testing of armament/weapons considered under this data call. Open Air Ranges are supported by numerous facilities. The compilation of unconstrained capacity is provided in the detailed data sheets for each open air range but could not be determined by each supporting facility.

ANNUAL HOURS OF DOWNTIME	1	
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7
"TYPICAL"			
		TOTAL SUM	

HISTORICAL WORKLOAD

Facility/Capability Title: Aviation Support Facilities

		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
AIR VEHICLES	Direct Labor Hours	14791	15904	17742	28060	28588	14992	17251	17762
	Test Hours	102	110	123	194	198	104	119	123
	Missions								
EC	Direct Labor Hours								
	Test Hours								
	Missions								
ARMAMENT WEAPONS	Direct Labor Hours	15011	17414	18032	20041	20861	18047	19372	17282
	Test Hours	184	213	221	245	255	221	237	212
	Missions								
OTHER T&E	Direct Labor Hours	6557	8046	8054	6861	5948	8973	11348	12961
	Test Hours	4	4	4	4	3	5	6	7
	Missions								
OTHER	Direct Labor Hours								
	Test Hours								
	Missions								

ADDITIONAL INFORMATION

Facility/Capability Title: Aviation Support Facilities

PERSONNEL

	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer	3	2					
Enlisted	6	4					
Civilian	3	3					
Contractor	13	13					
Total	25	22					

Total Square Footage: 50000

Test Area Square Footage: 36000

Tonnage of Equipment: 411

Annual Maintenance Cost: 0.8M

Office Space Square Footage: 14000

Volume of Equipment: 30000

Estimated Moving Cost: 0.072M

CAPITAL EQUIPMENT INVESTMENT

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
0.490	1.500	0.300	0.650	0		

GENERAL INFORMATION

Facility/Capability Title: Range Instrumentation

Date: 31 May 94

Service: A

Organization_Activity: Yuma Proving Ground

Location: Yuma, Az

TE Functional Area: Armament/Weapons

UIC: W04X

TE Facility Category: OAR

	T&E	S&T	DE	IE	T&D	Other
PERCENTAGE USE:	100					

BREAKOUT BY T&E FUNCTION AREA (%)

Air Vehicle	13
EC	0
Armament/Weapons	60
Other T&E	27
Other	0

Total In Breakout Must Equal "Percentage Use" On First Line

112

TECHNICAL INFORMATION

Facility/Capability Title: Range Instrumentation

Facility Description:
The YPG range instrumentation systems provide the resources required to perform testing in multiple mission areas. The armament/weapons instrumentation encompasses Time-Space-Position Instrumentation (TSPI) for vehicle and munitions tracking, ballistic measurements, targets, target acquisition system performance determination, telemetry receiving and processing, meteorology, and range communications.
TSPI Systems: The TSPI systems are the heart of the YPG instrumentation capability. Extensive investment has been made in this area to meet the critical requirements of munitions, rotary wing, and target tracking. For munitions tracking, optical and doppler radar systems are employed. Data capabilities include projectile tracking/retardation-accleration measurement, first motion, and etal part separation. Optical systems provide for multiple/variable sensor configurations. Digital signal processing techniquest are used to extract data in the field. Aircraft tracking systems are primarily supported with the Precision Automated [Laser] Tracking System (PATS). This system provides the only feasible method for data collection of rotary wing platforms operating at extremely low levels (less than 50ft) where radar and optical tracking systems can not be used. Other tracking systems include radar, optical, and GPS-based systems. Target tracking is accomplished with a unique GPS-based system allowing for tracking of multiple (up to 24) ground and air targets simultaneously. A full range of geodetics information is incorporated in the YPG instrumentation systems using laser, optical, radar, and GPS-based systems.
Ballistic Measurements: This capability is supported by internal weapon pressure, external blast/overpressure, and recoil acceleration and velocity. Acoustic scoring has been implemented to support devleopment of fire control solutions by providing near real-time trajectory information of munitions. On-board video and fixed camera arrays at the target are used to score miss-distance and vehicle aiming/boresight errors. High speed video and on-board video is also used to provide ballistic data on ground and airborne moving targets.
Targets: YPG is the western operations site for foreign ground vehicles. These vehicles are maintained in operational condition and are equipped for remote control operations. Two rail target facilities provide the capability for technical moving targets up to 50 mile per hour on a mile ling track. A host of simulated targets, such as 2S3 skid targets, are available. Technical targets for evaluation of electro-optical target acquisition systems include a Detection/Recognition target array for the visible spectrum as well as a Mobile Infrared Signature Target (MIST). The MIST is a trailer mounted thermal target 20 ft by 20 ft that contains a 10 ft by 10 ft active IR area. The 128 pixels allow establishment of virtually any target pattern with temperatures controlled from 0.1 deg C to 15.0 deg C. Threee black-body reference sources are also incorporated into the target. YPG maintains the resources required to characterize operational and simulated targets in the IR spectrum.

Interconnectivity/Multiuse of TE Facility:
All range instrumentation and communication systems are fully integrated into the YPG data analysis and computation facility providing for the real-time collection of critical system performance data for all mission areas at YPG. External interconnectivity includes the transfer of radar tracking data from the Electronic Proving Ground to provide real-time position data of UAVs flying off the YPG range complex

Type of Test Supported:
A full range of tests are supported by the YPG range instrumentation. Smart Weapons, Air Vehicle Weapons Integration, Precision Navigation Systems, Ballistics, Ground Vehicle Weapons Integration, Automotive Performance, and Air Delivery systems are all supported.

Summary of Technical Capabilities:
The technical capabilities are summarized above. The unique capabilities of the YPG range instrumentation include TSPI accuracies of less than 0.5 meters in position and 0.02 meters/second in velocity for munitions and vehicles. The acoustic munition scoring provides unsurpassed accuracies for precision fire control solution development.

Keywords: TSPI, ballistics, radar, laser, targets, telemetry, communications, photo, video

TECHNICAL INFORMATION

Facility/Capability Title: Range Instrumentation (continued)

Telemetry: A telemetry receiving site is employed on the Cibola range situated to support aircraft, air delivery, automotive, and munitions testing. Multiple telemetry strams can be autotracked in the L&S-band. Full encryption systems are utilized. Mobile instrumentation vans allow for data collection in remote areas of the YPG range or in support of off-site testing.

Laser Designation Scoring System: The Combined Automated Centroid Tracking Instrumentation System (CACTIS) is a unique system providing the capability to measure the centroid of laser energy on a calibrated target. For tactical targets or support at remote test locations (e.g. Cold Regions Test Center), YPG employs an 'all video' approach to laser spot analysis. this systtem implements an autotracking system to isolate the laser visual centroid and provides data representing laser designation accuracies.

Video/Photo: A full range of video and photo resources are used at YPG. The air/ground vehicle data collection instrumentation consists of an array of video cameras and recording systems allow for the recording or transmission of heads up display, target acquisition system, or munitions separation on the vehicle in a real-time condition. The YPG Photographic Laboratory provides processing, printing, and studio facilities for still photography. This includes film processing for B&W, color reversal, and color negative materials.

Meterology: The meteorological services Branch provides forecasting, climatological services, meteorological data collection and data anlaysis for standard and specialized atmospheric parameters required for testing systems in open air ranges.

Range Communications: Range communications infrastructure includes a range of systems capable of relaying high resolution video, telemetry data rates in excess of 20mbps, and five automated patch and test facilities. Twenty-five voice radio nets are integrated into three mission control rooms and the range control facility.

FACILITY CONDITION

Facility/Capability Title: Range Instrumentation

Facility Age: 2-30 yrs (12 ave) Replacement Value: 130.7M

Maintenance/Repair Backlog: NONE

Date of Last Upgrade: various

Nature of Last Upgrade: radar upgrades (FY92), geodetics modernization (FY94), ballistic measurements (FY94), rail target improvements (FY92)

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: Modernization of TSPI Systems

   TOTAL PROGRAMMED AMOUNT: 2.1M

   SUMMARY DESCRIPTION: Upgrade computer systems, improved boresight capability, transmitter attenuator and receiver replacements, accuracy and interface improvements of GPS target tracking system.

2. UPGRADE TITLE: Telemetry Data Acquisition Improvements

   TOTAL PROGRAMMED AMOUNT: 0.94M

   SUMMARY DESCRIPTION: Implement high speed recorders/processing equipment, increase data rates to 10MBps

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Range Instrumentation

NOTE: This facility supports the Open Air Range testing of armament/weapons considered under this data call. Open Air Ranges are supported by numerous facilities. The compilation of unconstrained capacity is provided in the detailed data sheets for each open air range but could not be determined by each supporting facility.

ANNUAL HOURS OF DOWNTIME	1	
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7
"TYPICAL"			
		TOTAL SUM	

HISTORICAL WORKLOAD

Facility/Capability Title: Range Instrumentation

		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
AIR VEHICLES	Direct Labor Hours	71026	76373	85198	134749	137283	71996	82839	85294
	Test Hours	491	528	589	931	949	498	573	589
	Missions								
EC	Direct Labor Hours								
	Test Hours								
	Missions								
ARMAMENT WEAPONS	Direct Labor Hours	341946	396671	410747	456520	475190	411108	441277	393667
	Test Hours	4187	4857	5029	5590	5818	5034	5403	4820
	Missions								
OTHER T&E	Direct Labor Hours	89621	109967	110076	93778	81299	122639	155095	177150
	Test Hours	48	59	59	50	44	66	83	95
	Missions								
OTHER	Direct Labor Hours								
	Test Hours								
	Missions								

ADDITIONAL INFORMATION

Facility/Capability Title: Range Instrumentation

PERSONNEL

	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer							
Enlisted	24	24					
Civilian	80	84					
Contractor	120	125					
Total	224	233					

Total Square Footage: 55779

Test Area Square Footage: 45766

Tonnage of Equipment: 2316

Annual Maintenance Cost: 1.41M

Office Space Square Footage: 10013

Volume of Equipment: 378357

Estimated Moving Cost: 0.936M

CAPITAL EQUIPMENT INVESTMENT

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
1.507	1.480	1.125	0.603	0.850		

GENERAL INFORMATION

Facility/Capability Title: Data Analysis and Computation

Date: 31 May 94

Service: A

Organization_Activity: Yuma Proving Ground

Location: Yuma, Az

TE Functional Area: Air Vehicle

UIC: W04X

TE Facility Category: OAR

	T&E	S&T	DE	IE	T&D	Other
PERCENTAGE USE:	100					

BREAKOUT BY T&E FUNCTION AREA (%)

Air Vehicle	60
EC	0
Armament/Weapons	30
Other T&E	10
Other	0

Total in Breakout Must Equal "Percentage Use" On First Line

TECHNICAL INFORMATION

Facility/Capability Title: Data Analysis and Computation

Facility Description:

The mission control facility consists of three separate mission control rooms each cabable of supporting independent test events or a single event internetted together. The function of the mission control facility focuses on command and control of the mission as well as complete real-time data analysis. Processing is conducted to provide the customer with immediate feed back of system performance and processed report quality data immediately after the test mission. This processing encompasses merging of TSPI data processing, ballistics modeling to æpointÆ range instrumentation, TM data with all range data, and report development.

The system is capable of transmitting over 30,000 data items per second via a facility local area network (FLAN) - the Ethernet - to over twenty graphics workstations simultaneously. Each workstation is equipped with a menu system which gives the user the capability to select from among scores of displays including strip charts, tabular displays, range maps, cockpit instrumentation panel displays, and TM data displays. Raw instrumentation data from downrange sensors (e.g., radars, lasers, optical sensors) is microwaved to the RTDS in Bldg 2105N and passes through the synchronous and asynchronous modems into the instrumentation front-end data processors (Encore 21/6750s) where a preliminary QD filter is applied to the data to reject any wild points. From the 6750s the data is passed to the real-time processors (Encore RSX computers) where refraction corrections and instrumentation biases are applied and the data is converted to X/Y/Z position data; differences are calculated and an RTE is determined (extrapolated from the instrument selected to ôdriveö the solution) and transmitted back to the downrange instruments as pointing data. Raw TM data is transmitted to the RTDS via a combination of wide band and fiber optics links. After passing through the TM front-end processors (PDP 11/84s or Loral 500 System), the TM data is sent tot eh RSX computers where, after bit weights are applied, differences are calculated and the TM data is merged with the processed instrumentation data. TM data can also be used as a pointing data source in the RTE. Raw meteorological and rawinsonde data comes into the RTDS as 8-line asynchronous data via the instrumentation modems. It is used to apply the Type 3 refraction corrections which YPG employs in its real-time data reduction scheme. All of these data types (instrumentation, meteorological, and TM) are written to a consolidated data tape (CDT) for archival purposes. In addition, processed data is transmitted to the real-time graphics processor for display of all or selected parameters in real time. Also, all of the data from amission is written to an analog tape for mission playback and in-depth post-test data analysis, if required.

YPG/Es RTDS is a modular system, designed to incorporate mission-specific changes or modifications toe the software scheme in the most efficacious manner possible,. To this end, real-time mathematicians and programmers, working closely with Project Engineers, have implemented changes to the RTDS, often in real time (i.e., while the mission is being conducted), to accommodate the needs of the customer. Changes range from designing and developing real-time data displays to developing new mathematical algorithms and/or methodologies (e.g., the use of multiple Kalman filters for SADARM and ballistics data processing)

Interconnectivity/Multiuse of TE Facility.

YPG uses high speed data processors and data distribution systems, a realtime graphsics porcessor, and telemteyr data processors to support up to 32-channels of data from range instrumentation. In addition to recieving data, the realtime system provides pointing data to range systems

Type of Test Supported:

air vehicle performance and weapons integration, smart munitions, air delivery systems, target acquistiion systems, navigaiton system performance evaluations.

Summary of Technical Capabilities:

The unique capabilities in the YPG mission control facility provide for realtime performance analysis. The test teams can completely assess performance of the test item as compared to range instrumentation significantly reducing total test time.

Keywords: real-time, data analysis, range instrumentation, telemetry

FACILITY CONDITION

Facility/Capability Title: Data Analysis and Computation

Facility Age: 15 yrs Replacement Value: 7.0M

Maintenance/Repair Backlog: NONE

Date of Last Upgrade: Modernized real-time data processing systems and batch data reduction systems

Nature of Last Upgrade:

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: Improve real-time TSPI processing

   TOTAL PROGRAMMED AMOUNT: 0.1M

   SUMMARY DESCRIPTION: Incorporate TSPI processing systems to provide additional flexibility and improved accuracy

2. UPGRADE TITLE: Enhance real-time video processing

   TOTAL PROGRAMMED AMOUNT: 0.25M

   SUMMARY DESCRIPTION: Enhance video scoring processes with incorporation of real-time capabilities

DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: Data Analysis and Computation

NOTE: This facility supports the Open Air Range testing of armament/weapons considered under this data call. Open Air Ranges are supported by numerous facilities. The compilation of unconstrained capacity is provided in the detailed data sheets for each open air range but could not be determined by each supporting facility.

ANNUAL HOURS OF DOWNTIME	1	
AVERAGE DOWNTIME PER DAY (LINE 1 / 365)	2	
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7
"TYPICAL"			
		TOTAL SUM	

HISTORICAL WORKLOAD

Facility/Capability Title: Data Analysis and Computation

		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
AIR VEHICLES	Direct Labor Hours	100098	107634	120071	189903	193474	101464	116746	120206
	Test Hours	692	744	830	1312	1337	701	807	831
	Missions								
EC	Direct Labor Hours								
	Test Hours								
	Missions								
ARMAMENT WEAPONS	Direct Labor Hours	52207	60562	62711	69699	72550	62766	67372	60103
	Test Hours	639	742	768	853	888	769	825	736
	Missions								
OTHER T&E	Direct Labor Hours	10135	12436	12449	10606	9194	13870	17540	20034
	Test Hours	5	7	7	6	5	7	9	11
	Missions								
OTHER	Direct Labor Hours								
	Test Hours								
	Missions								

ADDITIONAL INFORMATION

Facility/Capability Title: Data Analysis and Computation

PERSONNEL

	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer							
Enlisted							
Civilian	37	37	38				
Contractor	23	23	26				
Total	60	60	64				

Total Square Footage: 23256

Test Area Square Footage: 12964

Tonnage of Equipment: 1938

Annual Maintenance Cost: 0.726M

Office Space Square Footage: 10292

Volume of Equipment: 58140

Estimated Moving Cost: 0.32M

CAPITAL EQUIPMENT INVESTMENT

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
1.507	1.480	0.825	0.603	0.550		

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DEPARTMENT OF THE ARMY

UNITED STATES ARMY OPERATIONAL TEST AND EVALUATION COMMAND
PARK CENTER IV 4501 FORD AVENUE
ALEXANDRIA, VIRGINIA 22302 - 1458

CSTE-OPP (70)

June 17, 94.

MEMORANDUM FOR DIRECTOR, THE ARMY BASING STUDY, OFFICE OF THE CHIEF OF STAFF, ARMY, ATTN: DACS-TABS, WASHINGTON, DC 20310-0200

SUBJECT: BRAC 95 Data Call #7 - Test and Evaluation

1. Reference memorandum, DACS-TABS, 19 Apr 94, SAB.

2. This memo transmits data as requested (enclosures 1-6).

3. The information contained in this report is accurate and complete to the best of my knowledge and belief.

4. OPTEC DCSOPS point of contact is Ms. Swanson, commercial 703-756-2476/4985.

JAMES G. SNODGRASS
COL, GS
Chief of Staff

6 encls
1. IEWTD copies
2. ADATD copies
3. TEC copies
4. IEWTD diskette
5. ADATD diskette
6. TEC diskette

CF:
COMMANDER, TEST AND EXPERIMENTATION COMMAND, ATTN: CSTE-TOP, FT HOOD, TX 76544-5065
DIRECTOR, TEST AND EVALUATION MANAGEMENT AGENCY, ATTN: MAJ FOWLKS, WASHINGTON 20310-0102

BUY US SAVINGS BONDS THROUGH THE PAYROLL DEDUCTION PLAN

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2.3 TECHNICAL RESOURCES

- 2.3.A Does the facility have a specified war-time or contingency role established in approved war plans? Yes/no.
- No*

- 2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

No

-2.3.B.1 On the test mission of any other activity?

Yes. Without the technical expertise and technical facilities of the IEWTD, OPTEC would not be able to accurately assess the operational effectiveness of tactical Intelligence Electronic Warfare systems or the electromagnetic vulnerability of other US systems.

(On the test mission of any other customer?) Yes. Without the IEWTD, the following customers would not be able to accurately assess the operational effectiveness of tactical IEW systems: US Marine Corps, US Air Force (ground based portion of Air Force intelligence systems), PEO-IEW, PEO-CCS, PEO-CM/UAV, INSCOM, NSA, and ASPO.)

-2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

Yes. As evidenced during Operation Desert Storm, quick reaction technical upgrades to IEW systems were tested by the IEWTD for PEO-IEW and INSCOM prior to shipping these systems to the war.

* Per phone conservation with Ms Susan Swanson, 21 Jun 94, (OPTEC), this response was unintentionally left blank. After coordination with MAJ Jack Marriot (TABS office) it was decided that an annotated pen and ink change was satisfactory.

INPUT TO 3.1 THROUGH 3.1.H.10

3.1.A. Interconnectivity (MV I) - Measure of Merit: Extent of linkage of this facility with other facilities and assessment of single-node failure potential.

- 3.1.A.1 What percentage of total test workload in FY 93 involved the real-time or near real time exchange of data or control with another facility? List the facilities you interconnect to for test and identify how many are simultaneous activities. Identify these as to whether they are internal and external to the site.

None.

- 3.1.A.2 If your facility were to be closed, would there be an impact on other facilities to which you are connected? Yes/No. If yes, explain.

No.

3.1.B Facility Condition (MV II) - Measure of Merit: Current and planned status of the T&E facilities for supporting assigned test missions. Fill out the Facility Condition Form in Appendix A in accordance with the instructions.

3.1.C Environmental and Encroachment Carrying Capacity (MV II) - Measure of Merit: Extent of current and future potential environmental and encroachment impacts on air, land, and sea space for testing.

- 3.1.C.1 Do you have limiting (current or future) environmental and/or encroachment characteristics associated with the installation/facility? Yes/No. If yes, explain.

In general - No. There are virtually no limiting environmental and/or encroachment limitations. Fort Huachuca is located in the southeastern corner of Arizona, away from most large populated areas. The City of Sierra Vista is the largest populated area located near the military post and its airfield, and encompasses about 130 square miles, with a population of approximately 38,500. This remote location and relatively small populated area surrounding the testing activity causes very few restrictions to

test conduct. Controlled target sets have been and will continue to be limited to existing road networks on Fort Huachuca's East and West Ranges. Off-road transportability testing is limited in some areas, but there are enough areas on Post where off-road movement can occur to satisfy any test requirement. Certain types of testing is limited in the night hours during the months of June through October due to migration of local bats. This is not all restrictive, but more of a case-by-case basis depending on frequencies emitting from the system.

However, because of the unique nature of the Unmanned Aerial Vehicle development and testing requirements, an assessment of the potential impacts of operational testing of Short Range-Unmanned Aerial Vehicle systems was completed in May 1992, and reported as the Final Environmental Assessment, Department of the Army, Fort Huachuca Garrison, Test and Experimentation Command [TEXCOM], Unmanned Aerial Vehicle - Short Range [UAV-SR], June 1, 1992. Copies of the environmental assessment (EA) are on file at the Reconnaissance Test Division of TEXCOM IEWTD, Fort Huachuca, AZ. The results of the assessment led to a Finding of No Significant Impact. However, certain procedures were instituted and are followed in order to mitigate or avoid the potential for impacting threatened, endangered, and protected species of wildlife and plant habitats. Certain procedures were also instituted to avoid conflict with the public for use of public roads and national forest recreation areas. The EA authorizes TEXCOM to conduct operational testing of Short Range Unmanned Aerial Vehicle systems through March 1997. The assessment covers air vehicle (AV) flight operations, ground deployment of AV support equipment, and the approval to deploy threat force target sets on both Fort Huachuca and in the Coronado National Forest (CNF). The CNF abuts Fort Huachuca to the west. The EA limits the flight profiles to no less than 3000 feet above ground level, except for takeoffs and landings. FAA regulations limit UAV operations in the Fort Huachuca Restricted Area of Operations to no more than 15,000 feet above mean sea level. Certain target sites were approved for deployment of troops and threat force equipment as imaging targets in CNF and Fort Huachuca. Future operational testing under the authority of the EA would limit the test community to existing approved target sites. Expansion of target site boundaries or establishing new sites would have to be done in coordination and with the approval of environmental agencies and groups. U.S. Army Intelligence Center and Fort Huachuca (USAIC&FH) also has completed an EA which supports UAV training. Details of that assessment are available from the Environmental Coordinator, Directorate of Engineering and

Housing, (USAIC&FH).

- **3.1.C.2** How much could workload be increased before this limit would be reached? Express your answer as a percentage of your current workload.

50%.

- **3.1.C.3** Do you currently operate under temporary permits of an environmental nature, or voluntary agreements (including treaties) of any sort that deal with the environment? If so, when do they expire? Please describe.

Yes, (IEW Ground System). Off-post temporary permits for State land are renewed annually. Included in the permits are environmental procedures. These primarily deal with refueling to avoid ground spills and safety to prevent range fires.

Yes, (UAV). The environmental assessment was approved for the Period of May 1992 to March 1997 and applies strictly to UAV operational testing. Should operational testing of UAVs be required after that period, then a new EA will be conducted, or other assessments or Environmental Impact Statements will incorporate operational testing. Fort Huachuca currently has an umbrella EA which encompasses both training and testing of UAVs.

Yes, (JSTARS). The Joint Surveillance Target Attack Radar System (JSTARS) Ground Station Module User testing program operates under a current Record of Environmental Consideration which is valid through March 1997.

- **3.1.C.4** What is the total population within a 50 mile radius? 100 mile radius? 150 mile radius? 200 mile radius?

50 mile radius of Ft Huachuca = 97,624
100 mile radius of Ft Huachuca = 577,500
150 mile radius of Ft Huachuca = 820,734
200 mile radius of Ft Huachuca = 2,942,835

* NOTE: This is US population only. Does not include Mexico which is 12 miles south of Fort Huachuca.

- **3.1.C.5** Identify the commercial air/land/sea traffic routes, public use of air/land/sea space, and frequency of use for each that affects or could affect mission accomplishment in your air, land, or sea space.

Arizona State Route 90, running north from Sierra Vista to US Interstate 10, bisects the Fort Huachuca East and West Ranges. State Route 90 is a major ground transportation route linking Tucson (via US Route I-10), Sierra Vista and Mexico.

There are no charted or designated FAA airways between Fort Huachuca and Tucson or its' neighboring cities. However, the Sierra Vista/Libby Army Airfield is a joint military/ civilian use airfield and accommodates numerous military training and testing flights as well as commercial, corporate, and General Aviation usage daily. All of the existing users of the airspace are able to coexist and flourish because of the professional airspace management efforts put forth by all parties.

- 3.1.C.5.A How many test missions per year are cancelled due to commercial or public use?

None to date.

- 3.1.C.6 What is the number of test missions that have been cancelled due to encroachment in each of the last two years?

None to date.

3.1.D Specialized Test Support Facilities and Targets (MV I) - Measure of Merit: Extent to which specialized test support facilities and targets are available.

- 3.1.D.1 Do you have specialized facilities that are required to support you in conducting your test operations at your facility (e.g., Aerial delivery load build-up facilities; parachute drying towers/packing facilities; paratroop support facilities; specialized fuel storage and delivery systems; mission planning facilities; corrosion control, painting, washing facilities; and specialized maintenance facilities such as avionics intermediate shops)? Yes/No. If yes, please describe.

Yes. The Automated Intelligence/Electronic Warfare Test System (AI/EWTS) is a computer controlled instrumentation system which will simulate an electromagnetic environment, verify the electromagnetic ground truth, and collect and analyze test data. Its primary function is to replicate threat communication nets/emitters providing a repeatable test scenario. AI/EWTS is comprised of four major subsystems: The Operational Test Control Center (OTCC), a command/control/communications network, a

distributed array of generic simulators, and each simulator's Remote Message Generator (RMG).

The OTCC is the nucleus of the system. During the planning phase a test officer can utilize OTCC computers, software, and existing strawman files to develop his Master Events List (MEL) to include all aspects of the test. Generation of each emitters' script including frequency and modulation selection is automated based upon the MEL. The Data recording and analysis procedures may be developed and verified well in advance of the pretest. During test execution the OTCC monitors the test environment, verifies emitter ground truth, and may provide feedback from the item under test. The test officer is provided with data collection and analysis with real-time and near real-time display of the data/results and status of the threat array. The OTCC data link provides test command and control of the threat array to allow reactive changes to the scenario as test results emerge. A mobile OTCC duplicates these capabilities, though with a slightly reduced capacity. It is configured in a large step van with a trailer-mounted generator.

There are several specialized facilities that support user operations at Ft Huachuca. All of the Unmanned Aerial Vehicle (UAV) runways (Hubbard Assault Strip, Raven and Pioneer UAV runways) were designed and built specifically for test operations. Additionally, the restricted airspace R2303A and R2303B are in effect to maximize use of the airspace surrounding Fort Huachuca for test purposes. There are numerous US Army Electronic Proving Ground (USAEPG) specialized targets and target support facilities (Instrumented Test Range, (ITR) FPF-16 radar tracking sites, and microwave and radiowave relay facilities in and around the Fort Huachuca area. TEXCOM IEWTD uses these USAEPG facilities during user tests.

The Black Tower UAV test facility is located about six miles West of main post on the Fort Huachuca. It has parachute drying towers, an air traffic-control tower, which has reinforced concrete cabling runs to launch pads. The Black Tower facility has UAV maintenance bays and specialized fuel storage and handling facilities which support UAV operations. It also has hardened bunkers for storage of pyrotechnics peculiar to UAVs. Black Tower facility has about 4000 square feet of test planning office spaces. The Black Tower test facility is co-located with the DoD National UAV Training Center. There are two UAV airstrips (one paved surfaced runway, and one unpaved/ dirt surfaced runway [to meet testing requirements for operations from

either/both types of runways]) within one kilometer from Black Tower, specially constructed and maintained to support both testing and training.

- 3.1.D.2 Are specialized targets required to support this facility? Yes/No. If yes, explain.

Yes. Fort Huachuca has constructed, on Government-owned/controlled lands, a large, approximately two acre resolution panel used for calibration of imaging sensor payloads on UAVs and other airborne systems. The panel is constructed of reinforced concrete and has special surfaces to reflect visible energy and emanate infrared energy.

- 3.1.D.2.A Have the specialized targets been validated? Yes/No. If yes, by whom?

Yes. USAIC&FH.

3.1.E Expandability (MV III) - Measure of Merit: Extent to which an installation/facility is able to expand to accommodate additional workload or new missions.

- 3.1.E.1. Other than the expendability inherent in unconstrained capacity, discussed earlier, are there any special aspects of this facility that enhance its ability to expand output within each of T&E functional areas? Yes/No. If yes, explain.

Yes. Fort Huachuca and the nearby public lands provide ample space to emplace IEW electronic combat systems and simulated threat forces at tactically realistic distances. Within Fort Huachuca proper, adequate lands are available to test division-level tactical IEW systems within a test controlled maneuver area of approximately 40 x 70 KM. We have the ability to expand test operations to areas in southeastern Arizona to a test controlled maneuver area of approximately 70 x 200 KM. Some Corps and above IEW electronic combat systems require operational baselines and threat portrayals of up to 1500 to 2000 KM. From Fort Huachuca we are able to establish test operations throughout the western United States to accommodate these large baselines.
The relatively unconstrained electromagnetic environment in and around Fort Huachuca, Sierra Vista, Cochise and Santa Cruz Counties, Arizona, lends itself to greater use of frequencies currently required by UAV operations. UAV training and testing has the number one priority for use of the restricted airspace

over Fort Huachuca and the Coronado National Forest to the West. That airspace has much greater capacity to increase testing and training of UAVs and still support other military and civilian aviation needs.

Another important beneficial feature of the location of the post and its airfield environment is the relatively free electromagnetic environment enjoyed in southern and southeastern Arizona. This open electromagnetic spectrum environment enables the testing community to quite freely test the susceptibility of electronic systems to electronic countermeasures ("jamming"), and to test electronic countermeasures systems themselves, with little adverse impact on the local populace or its commercial broadcasting/transmitting facilities.

Current USAIC&FH and DoD plans to improve the present 12,000 foot primary runway will increase the capability of the installation's airfield to support larger USAF cargo/lift aircraft in support of tactical/strategic lift capability testing determinations, as well as providing increased air operations testing of future intelligence aircraft systems. The expansion of the ATC operations at LAAF to 24 hours per day within 6 months will also expand our night testing operations capabilities, as well as enhance radar coverage to support night and adverse weather (albeit unusual) operations during airborne systems' testing and/or aerial support to testing.

- 3.1.E.1.A Can you accept new T&D workload different from what you are currently performing? Yes/No. If yes, identify by T&E functional area and test type.

Yes. TEXCOM IEWTD can accommodate Air Vehicle and Electronic Combat Systems testing. It could expand to accommodate Armaments/Weapons subsystem testing less propulsion and warheads.

- 3.1.E.2 Are airspace, land, and water areas -- adjacent to areas under DoD control -- available and/or suited for physical expansion to support new missions or increased footprints? Yes/No. If yes, please explain.

Yes. Fort Huachuca and the nearby public lands provide ample space to emplace IEW electronic combat systems and simulated threat forces at tactically realistic distances. Within Fort Huachuca proper, adequate lands are available to test division-level tactical IEW systems within a test-controlled maneuver area of approximately 40 x 70 KM. We have the ability to expand test

operations to areas in southeastern Arizona to a test-controlled maneuver area of approximately 70 x 200 KM. Some Corps and above IEW electronic combat systems require operational baselines and threat portrayals of up to 1500 to 2000 KM. From Fort Huachuca we are able to establish test operations throughout the western United States to accommodate these large baselines.

In accordance with the EA mentioned in -3.1.C.1, above, fifty-four target sites were identified and used during UAV user testing in 1992. Twenty-one of them are in the Coronado National Forest (CNF). The Fort Huachuca restricted airspace extends above the CNF to an altitude of 15,000 feet above mean sea level. Large expanses of CNF under the restricted area could be opened to additional static target sites or moving target routes, presuming new environmental assessments were approved with findings of no significant impact.

Close coordination with private landowners (particularly ranchers with private airstrips) has resulted in numerous benefits being realized, including emergency and/or contingency use of private landing strips (specifically during testing of UAV systems), and greater freedom for overflight of private lands during testing.

- 3.1.E.3 Is the facility equipped to support secure operations? Yes/No. If yes, to what level of classification (Confidential, Secret, Top Secret, Special Access Required)?

Yes. IEWTD currently has one Sensitive Compartmented Information Facility (SCIF). By the end of FY 94, there will be two SCIFs within the IEWTD Hayes Hall Compound. Therefore, IEWTD is equipped to support secure operations at all levels of classification.

- 3.1.E.4 Are there any capital improvements underway or programmed in the 95 FYDP that would change your capacity/ capability? Yes/No. If yes, explain.

Yes, the development of a TEXCOM IEWTD Electro-Optic (EO) test system is scheduled FY 97 (subject to availability of funds). This is a mobile test facility with light-wave sensors, receivers, analyzers, recorders, image processors, and transmitters. It will provide the ability to test U.S. systems' vulnerability to current commercial technology in detection, identification, and blinding or damage.

The primary runway 26/08 at Libby Army Airfield is presently

undergoing improvement to its load bearing/handling capacity and surface. The improvements will enable large military (and commercial), like the USAF C-5 GALAXY heavy lift aircraft to operate from the airfield's 12,000 foot runway. This has significant operational testing advantages, and would permit USAF-supported tactical and/or strategic military airlift testing of Army systems (personnel and equipment).

3.1.F Uniqueness (MV I) - Measure of Merit: Extent to which the facility is one-of-a-kind.

- 3.1.F.1 Is this a one-of-a-kind facility within the DoD? Yes/No. If yes, describe.

Yes. Fort Huachuca's location and geography, combined with a relatively isolated, low density population area allows the conduct of tests using the entire frequency spectrum with minimal public restrictions. This combined with Fort Huachuca being the DoD Unmanned Aerial Vehicle training and testing center makes Fort Huachuca unique.

- 3.1.F.1.A Within the U.S. Government? Yes/No. If yes, describe.

Yes. See 3.1.F.1.

- 3.1.F.1.B Within the U.S.? Yes/No. If yes, describe.

Yes. See 3.1.F.1.

- 3.1.F.2 Are you currently providing support to DoD users outside your Military Department? Yes/No. If yes, indicate percentage of total workload in FY92 and FY 93 by Military Department.

FY 92 -	Army 80 %	FY 93 -	Army 80 %
	USMC 20 %		USAF 10 %
			USMC 10 %

3.1.G Available Air, Land, and Sea Space (MV II) - Measure of Merit: Extent to which controlled test ranges satisfy weapon system test requirements.

- 3.1.G.1 How many square miles of air,land, and sea space are available to support test operations?

Fort Huachuca is comprised of 114.6 sq. mi. (73,344 acres). Other local Federal/State lands available for electronic testing through lease or public domain (use agreement or withdrawal) is an additional 46.3 sq. mi. (29,655 acres).

- 3.1.G.2 Who owns and/or controls the land under the restricted airspace you use?

Within the boundaries of Fort Huachuca, the land is owned and controlled by the military for the US Government. (Within the Fort Huachuca/Libby Army Airfield Air (LAAF) Traffic Control Zone, LAAF air traffic controllers control and coordinate all air traffic operating in and/or through the Restricted and Special Use Airspace.) Outside of the Fort Huachuca boundaries, most of the land is owned by the U.S. Forest Service. There are multiple private owners scattered around and in the Coronado National Forest (CNF). Most private ownership is involved in cattle ranching. Much of the CNF is leased to ranchers under grazing permits. Those permits give the lessees certain rights which exclude the general public from certain activities. But, in so far as use by the test and evaluation communities is concerned, the use of national forest lands for target site activities is not restricted. As discussed previously, careful coordination has resulted in good relations with private landowners, and access to private lands and landing strips has been established, as well as relative freedom to overfly privately owned areas.

-3.1.G.3 How much of this Restricted Airspace, and what altitude limits are associated with the restricted areas?

A substantial area of Restricted Airspace (R-2303 A&B) has been established specifically to accommodate the unique requirements of UAV training and testing. All of the UAV testing, evaluation,and training airspace is RESTRICTED. The envelope for UAV operations is 3000 feet (AGL) to 15,000 feet (MSL).

- 3.1.G.4 Do you have special use airspace other than supersonic airspace? Yes/No. If yes, for what types of test (e.g., terrain following radar)?

Yes. As reported by the Department of the Army Regional Representative, FAA Western-Pacific Region, Fort Huachuca/ Libby Army Airfield does have Special Use Airspace (R-2303 A&B). The special use airspace was incorporated to permit safe UAV and manned aircraft operations within the Fort Huachuca/Libby Army Airfield area. Safe simultaneous manned and unmanned air traffic

operations are regularly conducted, but priority of use within R-2303 A&B is exercised by UAV operations. The Special Use Airspace identified in/around Fort Huachuca, is as follows:

Restricted Area R2303:

R-2303A	261.9 square Statute Miles 1.95 Statute Miles (Altitude) 510.7 Cubic Square Statute Miles
R-2303B	891.5 Square Statute Miles 5.68 Statute Miles (Altitude) 5063.7 Cubic Square Statute Miles
Total R-2303A/B	5574.4 Cubic Square Statute Miles

- 3.1.G.5 Is the airspace over land or water? List the number of square miles over each.

All airspace discussed is over the land, in south-eastern Arizona.

- 3.1.G.6 Identify known or projected airspace problems that may prevent accomplishing your mission.

There are no known or projected airspace problems which presently prevent accomplishment of any of our aerial / airborne systems' testing missions. In the case of JSTARS testing, the approved orbit for the USAF JSTARS E-8 aircraft is 33 degrees 35 minutes North/110 degrees 57 minutes West (western edge) and 33 degrees 35 minutes North/109 degrees 00 minutes West (eastern edge). This route is roughly on the same latitude as Phoenix with a center point approximately 15 miles west and 50-60 miles north of Safford. This orbit is well north of and thus avoids the major commercial route "Phoenix, AZ, / Truth or Consequences, NM" (Read LA/Dallas etc.)

Additionally, Fort Huachuca/Libby Army Airfield is categorized by FAA as a "Low Use Airfield", despite the recent increase in USAF fighter training traffic. The density of daily/hourly air traffic within the airport traffic area is still considered to be LOW.

- 3.1.G.7 What is the maximum straight line segment in your airspace in nautical miles?

The actual maximum straight line segment of the air traffic control area of Libby Army Airfield is 46.8 nm.

With regard to the straight line data transmission distances involved during the JSTARS E-8 aircraft-to-Army ground station module (GSM) operational testing, the maximum operational straight line segment of the USAF E-8 orbit to systems on the ground at Fort Huachuca historically has been 100 nm, with the aircraft operating at altitudes of 35,000 - 40,000 feet (MSL).

- 3.1.G.8 What public airspace have you used for overflight of weapons systems in the past? What was the nature of those tests? Do you anticipate being able to use that same public airspace for similar tests in the future? Yes/No.

Yes. Airspace used is described above in 3.1.G.6. The nature of the JSTARS testing involves a Wide Area Surveillance Phased Array Radar. We anticipate using this orbit in Aug/Sep 94 and the latter half of FY 95 and FY 96.

3.1.H Geographic/Climatological Features (MV II) - Measure of Merit: Extent to which types of climatic/geographic conditions represent world-wide operational conditions.

- 3.1.H.1 Describe the topography and ground cover/vegetation within your test airspace (include nap-of-the-earth capability). Identify all of the following that apply: Mountains, forest/jungle, cultivated lowland, swamp/riverain, desert, and sea. State the area of each in square miles.

Topography: The northwest trending Huachuca Mountains are a complex of uplifted fault block granite and limestone rocks, conglomerate and claystone. Most of the installation is built on the lower slopes of the mountains. The basin and topography of southeastern Arizona containing the San Pedro and Sulphur Springs valleys are of gently sloping to rolling hills in alluvial basins, separated by uplifted fault blocks.

There are no restrictions on flying nap-of-the-earth at Fort Huachuca other than the standard FAA restriction of not flying less than 1000 ft over populated areas. Information on square miles of geographic features (extracted from Fort Huachuca BRAC 95 Installation Environmental Baseline Survey) is:

a. Installation total - 160.7 square miles

b. Desert - 105.8 sq miles (high desert includes maneuver area 31.7 sq miles; training lands 55.4 sq miles and ranges 18.7

sq miles)

c. Wetlands - .055 sq miles

d. Mountains/forest - 46.2 sq miles (categorized as other in the Fort Huachuca BRAC 95 Installation Environment Baseline Survey)

e. Cantonment area - 8.6 sq miles

Vegetation at Fort Huachuca can be characterized by the following six different categories: (1) Chihuahuan desert scrub, (2) semi-desert grassland, (3) Encinal oak-pine woodland, (4) Pinon-Juniper, (5) mixed conifer forest, and (6) riparian habitat.

Southeastern and south-central Arizona was used to depict the areas of conflict defined in the scenarios. Southeastern Arizona consists of high desert terrain, while south-central Arizona is characterized by low desert terrain. Both areas have small mountain ranges with large valleys between the ranges. Vegetation in southeastern Arizona is native grasses, scattered trees, cactus, and the Coronado National Forest consisting of a mixture of deciduous and coniferous trees. The National Forest extends around the Huachuca Mountains and is thickly covered with trees, offering a wooded environment. The vegetation in south-central Arizona is similar except that the few trees there are located near Indian settlements. Visibility is approximately 50 miles under clear daylight conditions. The Fort Huachuca military reservation is geographically located in the inter-mountain desert plateau region between the southern most extent of the Rocky Mountains and the northern most extent of the Sierra Madras. The elevation of Fort Huachuca varies from 3,925 feet to 9,600 feet above sea level with 25 to 30 percent of the area located in rugged mountainous terrain above 5,000 feet. The remaining area of land is rolling hill country gradually sloping away from the Huachuca Mountain Range. Vegetation in the area is characterized by a wide variety of desert shrubs, cactus, and grasses at lower elevations. Above 5,000 feet, black oak and juniper are common; and above 6,500 feet, yellow pine predominates.

Southeastern Arizona is noted for thunderstorm activity from June to September. Eighty-five to ninety-nine percent of the annual lightning activity occurs during this time. Activity can range from isolated mountain thundershowers, to powerful mesoscale convective complexes (MCC). Precipitation at Fort Huachuca varies dramatically from season to season and from year to year. Measurable precipitation can occur during every month of the year, but it is most likely to occur in July and August. Fifty

to seventy-five percent of the annual precipitation that falls occurs during the summer rainy season beginning in late June or the first of July and continuing into the first part of September. The record maximum total precipitation for a year is 21.45 inches recorded in 1984. The record minimum total precipitation for a year is 9.11 inches recorded in 1973. The 30-year average precipitation total for the Fort Huachuca area is 14.47 inches based on data from 1956 to 1985. Snow can occur at Fort Huachuca as early as October and as late as May. Wind, windstorms, and canyon winds are another prominent weather feature in the Fort Huachuca area. The upper-level wind flow plays a very important role in the type and severity of the weather in southwestern United States. During the fall, winter, and spring, the wind flow aloft is predominately from the west and southwest. During the summer there is a shift aloft, and the upper-level wind flow is from the southeast. The wind direction and speed at the surface is generally influenced by the upper winds, but there can be a great variance in these parameters depending on the terrain of the site location and the time of day. Approximately 75 percent of the time during the morning hours at Fort Huachuca, a strong inversion layer develops to a height of between 100 to 1,000 feet above ground level. The wind flow below this layer is predominately from the northeast to the southeast at 2 to 4 miles per hour (mph). As the day progresses, surface temperature increases, the inversion disappears, and the surface winds shift in direction from the southwest to west at generally 7 to 14 mph with higher gusts late in the afternoon. Winds at times can be very strong with sustained average wind speeds of 25 to 40 mph with peak wind gusts measured to 83 mph and canyon wind gusts estimated in excess of 100 mph. From September through April, strong wind gusts are associated with the passage of frontal systems. Winds near the recorded peaks may occur for several hours. From May through August, very strong downbursts from thunderstorms and squalls from an MCC can create gusty winds with duration from a few minutes to several hours. Dust devils can occur almost any time of the year but are most prominent and powerful in May and June. Temperatures at Fort Huachuca can best be described as generally moderate with the extremes ranging from a high of 105° Fahrenheit (F) to a low of 9° F. Wintertime average temperatures range from lows in the middle 30s to highs in the upper 50s. Summertime average temperatures range from lows in the middle 60s to highs in the upper 80s. The average temperature for the year is 61.8° F.

A summary of climatological data observed during the Jun-Jul 92 test period for the UAV-SR Limited User Test, appears in tables 1

and 2.

- **3.1.H.2** Are there features of the local geology or soil conditions that enhance or inhibit any types of test?

Local geology enhances tests due to the variety that exist within short distances of each other. Desert, high desert, range, hill and mountain type terrain, is all present in/or around Post, allowing more diversity if required in a test. Also, this variety of terrain and soil content enhances signal testing due to extremely favorable soil composition for signal conductivity.

Local area is desert and as a result, has fairly uniform conductivity which enhances direction finding testing which is best conducted over surfaces uniform in physical and electrical characteristics. Only exception to this soil uniformity characteristic is near rock outcroppings, which are normally avoided because of the additional problem of signal reflections and multipaths from these geographic formations. Obviously, the effect on signals over wet lands cannot be tested here. Additional consideration of local soil conditions is its weight bearing capacity which is only lessened in the presence of flowing water that only occasionally occurs.

- **3.1.H.3** Did you have to go to other geographical locations to satisfy test requirements? Yes/No and explain. If yes, provide as a percent of overall workload per year for the past 8 years.

Yes. Approximately 21 percent of TEXCOM IEWTD tests over the last 8 years have been conducted at locations other than Fort Huachuca. The majority of these tests involved the evaluation of intelligence concepts, processes and procedures rather than equipment. The test issues created a test design which required data collection during large force-on-force exercises such as REFORGER in Europe or TEAM SPIRIT in Korea. Phases of two Special Electronic Mission Aircraft aircraft survivability equipment tests were conducted at Nellis AFB and China Lake during this period.

An alternate geographic location is required to test the UAV-SR in an environment which has relatively high temperatures coupled with high humidities. Southeast Arizona typically does not have high humidities during the hot season. Therefore, places like Eglin AFB, Florida, are planned for additional testing of the UAV-SR system.

- 3.1.H.4 What is the number of days per year the average temperature is below 32 degrees F? Between 32 and 95 degrees? Above 95 degrees?

All 365 days in an average year have a daily average temperature between 32 and 95 degree Fahrenheit. During the entire 35-year period covered by our climatological database, approximately 10 days had daily averages below 32 degrees which equates to one such day every 3-4 years. The highest daily average temperature during the same period has been 90 degrees which occurs once or twice each year. The hottest weather at this location is accompanied by low relative humidity which results in good nighttime cooling after a hot day.

- 3.1.H.5 What is the number of days per year the average relative humidity is below 30%? Between 30 and 80%? Above 80%?

The average number of days per year with an average relative humidity below 30% is 150. Humidity can occasionally fall below 10% during these days. An average of 194 days per year have average relative humidities between 30 and 80%. Finally, 21 days per year, on average, have an average relative humidity above 80%.

- 3.1.H.6 What is the number of test missions per year (1985 - 1993) cancelled due to weather?

Most weather-related test mission cancellations are a result of weather at locations other than Fort Huachuca. During the 35-year period of review, approximately 24 missions (all technical testing by the Electronic Proving Ground (EPG) and mostly remotely piloted vehicle ((RPV)/UAV missions) were cancelled due to adverse conditions. Generally, most test projects will go on temporary hold until the adverse weather conditions subside or they can be scheduled around the expected adverse weather conditions without having to cancel operations outright.

- 3.1.H.7 What is the number of test days per year (1985 - 1993) cancelled due to weather?

During the period of review, there have been no full 24-hour days during which testing could not be conducted due to adverse weather conditions. Local forecasting capability exists that allows weather-sensitive test operations to be scheduled around periods of expected adverse weather conditions.

- 3.1.H.8 What is the number of days per year the visibility is less than 1 mile? Between 1 and 3 miles? Greater than 3 miles?

Based upon the 35-year climatological database, there are no full 24-hour periods during which the visibility drops below three miles. Restricted visibilities occur most often during periods of showery types of precipitation which occur primarily during the winter and summer rainy seasons. Occurrence of fog occur only during the winter and are of short duration. Based upon climatology, 2.3% or 197.6 hours have visibilities below three miles in an average year. This equates to a total of 8.2 days. Visibilities of one to three miles occur, on average, a total of 109.6 hours, while visibilities less than one mile occur a total of 88.1 hours a year, or about 1% of the time on average. December is the month with the highest number of occurrences with 29.8 hours with visibilities of one to three miles and 14.9 hours with visibilities below one mile on average. Visibility below three miles has never been reported in June.

- 3.1.H.9 What is the average number of flying days available per year for flight test? Provide historical average from the past 8 years.

The average number of flying days available per year, based solely upon weather conditions during the period of review is 353. This equates to 96.7% of all days in a year being available. The primary weather condition that may make a day unavailable, is strong wind since all other adverse weather conditions are intermittent in nature in this area.

- 3.1.H.10 What percentage of the time are your test operations restricted due to weather?

Weather conditions that restrict test operations are: high winds, thunderstorms, and low visibilities. High winds occur, on average, 10% of all days of the year, and last about 8-hours per day for 3.3.% of the total numbers of hours in a year. Thunderstorms occur on 60 days a year with an average duration of 2 hours for 1.4% of the hours in a year. Low visibilities, as indicated above, occur 2.3% of the total number of hours in a year. This gives a total of 7% of all hours in a year where test operations would be restricted by weather. Heavy snow is very rare occurring much less than 1% of the time in a given year.

3.2. AIR VEHICLES

This functional area includes facilities involved in the testing of all air vehicles/subsystems/components whether fixed wing or rotary wing and test of major subsystems (e.g., avionics, engines, and sensors). This includes flight testing and the testing involving pre- and post-flight preparation and processing of the air vehicle.

3.2.A Supersonic Airspace (MV II) - Measure of Merit: Extent of range size to support weapon system requirements.

- 3.2.A.1 Do supersonic corridors or areas exist? Yes/No.

There are no supersonic corridors or areas within the Fort Huachuca controlled airspace. The closest supersonic ranges are approximately 70 nautical miles to the west and are controlled by the airspace management office of Luke AFB.

- 3.2.A.2 Where are they located relative to your airfield?

The closest supersonic airspace is located in the Sells Military Operations Area (MOA) located approximately 75 miles to the west of Ft Huachuca and continues out 75 to 85 nautical miles to the area around Ajo and Gila Bend.

- 3.2.A.3 At what altitude (upper and lower altitude)?

The altitude restrictions on this airspace are: Supersonic from 10,000 feet MSL to Flight Level (FL) 51.

- 3.2.A.4 Over land or water? What size and shape (length and width)?

Virtually all of this area is over land. The Sells MOA is approximately 50 NM X 70 NM in the shape of a trapezoid. The longest straight line distance is approximately 95 NM.

- 3.2.A.5 Are there restrictions you must observe to use this space? Yes/No. If yes, explain.

Yes, in addition to the altitude restrictions there is a "no fly" area within 5 NM of Kitt Peak Observatory and no supersonic overflight of the Organ Pipe National Monument or built-up areas around towns and villages.

- 3.2.A.6 What is the maximum number of simultaneous users?

The supersonic airspace lies in the Sells MOA and has no limit on the number of aircraft authorized to use that airspace. The operating criteria is that one must coordinate its use through Luke AFB, and once approved, operates under the MARSA principle, Military Assume the Responsibility of Separation of Aircraft ("see and be seen").

Additionally, since the U.S. Army does not have supersonic aircraft/air vehicles in its inventory, we do not execute any supersonic aircraft/air vehicle testing. The U.S. Army does not use the supersonic airspace structure.

- 3.2.B Airfield and Facility Characteristics (MV II) - Measure of Merit: Extent of air vehicle infrastructure to support T&E operations.

- 3.2.B.1 Provide a brief description of your airfield and support facilities, to include the following: Number and azimuth of runways, elevation, runway length (excluding overrun), overrun length, terminal and/or landing aids, arresting cable (yes/no, type), ramp area (in square feet), construction material (runway and ramps), load capability, and hangar space.

Airfield and Support Facilities: Libby Army Airfield: A joint use, military/civilian airfield located in southeastern Arizona. Elevation: 4716. Runways: one primary runway, 26/08, length 12000 feet with 1000 x 150 foot overrun on both ends; runway 29/11, length 5365 feet long with 200 x 75 foot overrun at either end; and runway 20/02, length 4300 feet long with 200 x 75 foot overruns. Precision and non-precision approaches exist at LAAF to include Instrument Landing System (ILS), VHF Omnidirectional Range (VOR), Nondirectional Beacon (NDB), as well as Radar assisted Airport Surveillance Radar (ASR)/Precision Approach Radar (PAR) approaches. A Bi-directional, Rotary Friction Brake, 1" arresting cable with a 950-foot runout and a 40,000 pound weight restriction is available. It is activated from the tower. There are approximately 82,000 square feet of hangar space on Libby AAF in four areas. The main runway is being refurbished at present, and when completed will accommodate all sizes of aircraft up to and including C-5 GALAXY aircraft.

- 3.2.B.2 How close and how many emergency runways or airfields are in your area of operation?

There are seven emergency VFR-type airfields within 25 nautical miles of Libby AAF. Davis-Monthan AFB and Tucson International Airport are less than 75 nautical miles away and both can provide emergency service. Additionally, there are approximately 14 other municipal and private airfields and airstrips (paved and unpaved) within a 50 nm radius of LAAF.

- 3.2.B.3 Where is your airfield situated relative to working areas (airspace) for supporting test operations?

Libby AAF is centrally located to the working areas (airspace) to better support test operations, on the north/northwest edge of the Post proper, but centrally located within the Post and its east and west maneuver areas.

- 3.2.B.4 What makes your airfield unique or at least suited for supporting test operations?

Libby AAF is ideally suited to support test operations. There are an average of 353 flying days per year, and the electro-magnetic environment is relatively clean, permitting the conduct of electronic warfare systems' testing under a simulated "jamming" environment. Additionally, the Army fixed and rotary wing aircraft traffic density is extremely low, and the addition of the relatively limited numbers of USAF fighter aircraft into the local traffic pattern, over the last ten years, permits the overall FAA classification of LAAF airspace usage in the "low density use airfield" category, appropriate for LAAF and its training and testing mission, and does not hinder manned nor unmanned aircraft test requirements. LAAF is located in the southeastern corner of the state, well south of the major commercial air corridors and air routes connecting the major cities/airports of Texas and New Mexico with Tucson and Phoenix, and destinations further west.

- 3.2.B.5 Is there a size, weight, maintenance, or mission limitation that would affect test operations? If so, describe the limitation(s).

The on-going surface upgrade to the 12,000 foot primary runway will increase the airfield capacity to the point that C-5 Galaxy aircraft will be able to operate from LAAF. Additionally, the capacity of LAAF is such that it has been designated as one of the alternate landing sites for an Edwards Air Force Base recovery of the Space Shuttle. The planned USAF-funded construction of additional hangar facilities should increase the potential of

future USAF support to Army testing, i.e., USAF support to strategic lift testing of Army systems (tactical airlift), as well as the possibility of joint program systems' staging (E-8 JSTARS aircraft) out of LAAF, if appropriate for test scenario.

3.2.B.6 Including hangars and ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise missiles?

No accurate data presently exists on the numbers of aircraft, by types listed above, that could be supported at LAAF and its several UAV/assault-type strips. But the following data may provide some insight into the facilities available.

LAAF has two large aircraft maintenance hangars and several smaller maintenance/administrative hangars on the military side of the airfield. Additionally, there is one five bay ramada-style, open-sided canopy designed to provide cover for the military C-12/RC-12 aircraft assigned to the USAIC and FH. The Army does not have individual aircraft hangars at LAAF, and the municipal airport on the northern side of the airfield also has very limited maintenance hangar space. There are indications that the USAF is coordinating for space to construct aircraft/maintenance hangar facilities in the near future to support the increased fighter training air traffic using LAAF for VFR traffic pattern and IFR Instrument Approach training.

As indication of the size of large multi-engine aircraft that can operate from LAAF, USAF, and Missouri Air National Guard (MoANG) C-130 aircraft operate regularly from LAAF, as well as German C-123 type aircraft.

LAAF has approximately 254,816 square yards of ramp space/parking apron space available on the military side of the airfield. The land on the municipal side of the airfield has been deeded by the US Government and belongs exclusively to the City of Sierra Vista.

West, southwest of LAAF, Fort Huachuca has two UAV-dedicated airstrips - Pioneer (paved runway) and Raven (unpaved runway). These runways are presently dedicated exclusively to UAV training and testing. Pioneer airstrip incorporates 2,000 feet of paved runway, and has a small maintenance/training support hangar contiguous to the runway. Raven is presently undergoing runway extension, which will result in a usable, unimproved dirt strip of approximately 2,000 feet in length; construction completion is scheduled for mid-Jun 94.

East, northeast of LAAF, lies Hubbard Landing Zone (Hubbard Assault Strip), which is an improved, dirt surface assault strip used primarily by C-130 Tactical Assault/Medium Lift Cargo from the USAF and the MoANG, but was also used during the Jun/Jul 92 UAV-SR LUT. Hubbard Landing Zone is oriented on a 160/340 axis, and includes a 4,000 foot strip, with 300 feet of overrun at each end.

- 3.2.C Test Operations (MV II) - Measure of Merit: Extent of T&E operations that the airspace can accommodate.

- 3.2.C.1 What types of air vehicle testing (fixed wing, rotary wing, unmanned vehicles, and cruise missiles) can be supported? (e.g., performance, handling, qualities, fatigue life, static, wheels and brakes, physical integration with external stores or avionics)

UAVs (of all types) have been tested at Fort Huachuca since 1953 with no known limitations. A mix of developmental, technical, and operational tests have been successfully completed. Fort Huachuca is capable of supporting all types of testing up through performance testing.

- 3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?

Yes, at LAAF, and at Pioneer, albeit, the facilities are limited. In the case of the airstrips at Hubbard and Raven, the facilities are installed as required, and are often temporary structures in nature to support UAV testing and training.

- 3.2.C.3 What kinds, numbers of aircraft and mix can be supported (manned and unmanned)?

Fort Huachuca and the LAAF Control Zone have supported mixed manned and unmanned air traffic for at least 20 plus years. Army manned aircraft training and the now-terminated USAF drone program existed together in the early-to-mid seventies, and the Army unmanned air vehicle programs (like the AQUILA) co-existed with Army, USAF, commercial, and private civilian manned aircraft from the mid-seventies, at least. The mixture today includes unmanned assets (the HUNTER and the PIONEER UAVs), and a wide variety of manned aircraft (jet fighter, turbine fixed, and rotary wing military, and turbine and gas reciprocating engine driven, single and multi-engine civil aircraft).

- 3.2.C.4 Does UAV and/or rotary wing operations pose any

limitation on other types of missions? If yes, explain.

No, not as long as the airspace has been coordinated. Additionally, UAV operations are conducted from airstrips/airfields other than LAAF (Hubbard Assault Strip, Pioneer, and Raven UAV airstrips, etc.) away from the main airfield. Rotary wing and fixed wing (jet and turbo prop/reciprocating engine aircraft), manned systems operate primarily from LAAF. All manned systems are notified whenever UAV operations (testing and/or training missions) are in progress and R2303 A&B are activated by ATC.

- 3.2.C.5 What sorts of missions (e.g., air-to-air, air-to-ground and refueling) can be flown within local airspace?

A variety of airborne missions are conducted within the Fort Huachuca/LAAF local flying area. US Army manned flight operations primarily involve intelligence/reconnaissance systems' training (Combat Surveillance course for Special Electronic Mission Aircraft (SEMA): EH-60 QUICKFIX, OV-1D MOHAWK side-looking airborne radar (SLAR), and camera (photo), RC-12D Improved GUARDRAIL V and RC-12N GUARDRAIL/COMMON SENSOR; RV-1D QUICKLOOK II mission training).

UAV unmanned flight operations presently include the PIONEER training conducted under the DoD National UAV Training Center program, as well as the HUNTER independent technical and operational testing programs.

Additionally, various active duty and reserve Army aviation units train on the military reservation's east and west ranges, to include AH-1 COBRA "gunship" support training to ground forces, in which live fire, aerial gunnery training is conducted.

- 3.2.C.6 What is the maximum number of simultaneous missions you can support that require telemetry?

In the unmanned arena, the airspace has supported both the DoD National UAV Training Center's requirements for PIONEER training, while operational testing of up to three HUNTER UAVs (in single ship and UAV relay missions) have been conducted without interference. Simultaneously, USAIC&FH and LAAF have conducted and supported manned training with both propeller-driven and jet air traffic operating in the control zone. When IEWTD conducts tests which require telemetry, we contract for that capability from USAEPG, who would determine the maximum number of simultaneous missions.

- 3.2.C.7 What is the largest number of simultaneous test missions you have supported in your airspace?

Reference above, a general description of past air traffic support is described, however, no finite data has been recorded. To date, no conflicts have been encountered that have prevented or cancelled any testing requirements.

- 3.2.C.8 Identify the number, types, and owners of aircraft at your installation.

Libby Army Airfield is host to a number of different types of military and privately-owned aircraft. The types of military aircraft presently resident include:

- o A-90 Beechcraft Utility/Cargo Aircraft
- o C-12D HURON Utility/Cargo Aircraft
- o EH-60 BLACKHAWK/QUICKFIX II Signals Intelligence Rotary Wing Aircraft
- o OV-1D MOHAWK SLAR/Imagery Intelligence Reconnaissance Aircraft
- o O-2 SKYMASTER Observation/Forward Air Control Aircraft
- o RV-1D MOHAWK/QUICKLOOK II Signals Intelligence Reconnaissance Aircraft
- o RC-12D&N HURON/GUARDRAIL Signals Intelligence Reconnaissance Aircraft
- o UH-1H HUEY Utility Rotary Wing Aircraft

All military aircraft permanently stationed at LAAF are the property of the US Army. Additionally, LAAF is frequently used as an enroute stopover point for military aircraft transitting to/from the National Training Center (NTC) at Fort Irwin, CA. This transient aircraft traffic is predominately rotary wing aircraft, and requires minimal parking space, and only occasionally requires hangar space (enroute emergency maintenance/repair activity).

A small number of military servicemembers have access to ramp space on the military side of the airfield for their privately owned light aircraft, e.g. Cessna 182, Beechcraft Bonanza, etc. Numbers vary, but rarely exceed half a dozen.

Libby Army Airfield is a joint military/civilian use airfield, supporting the City of Sierra Vista, AZ, on the municipal side of the airfield. Aviation assets include both commercial and privately owned aircraft, all of the light turbo or reciprocating

engine class. The largest aircraft regularly operated from the municipal airport is the Air West/ Mesa Airlines Beechcraft 1900 series, flying approximately six to eight regular Sierra Vista/Phoenix commercial flights per day. The privately owned or charter aircraft resident on the civilian side of the airfield number approximately 20-25 small single and twin-engine aircraft.

TABLE 1 - CLIMATOLOGICAL DATA

Date	Temperature (°F)			Wind			Humidity		
	Max	Min	Avg	Dir (deg)	Speed (mph)	Peak (mph)	Dew Pt (°F)	Rel Humid (%)	Prcip (in)
3 Jun	88.5	58.5	74.6	283	5.9	24.1	34	25	0.00
4 Jun	89.6	58.4	76.2	283	7.3	26.5	32	22	0.00
5 Jun	87.1	60.2	75.6	219	13.0	33.1	27	19	0.00
6 Jun	85.0	57.8	73.0	213	10.0	35.9	23	17	0.00
7 Jun	81.3	57.3	68.8	197	10.5	39.7	37	34	0.00
8 Jun	82.4	51.0	67.6	221	6.5	25.2	34	36	0.00
9 Jun	86.6	52.9	71.2	225	5.5	20.2	27	22	0.00
10 Jun	87.8	53.7	73.4	220	7.2	30.0	24	17	0.00
11 Jun	87.9	56.4	73.9	216	8.1	34.0	31	24	0.00
12 Jun	89.9	53.2	73.2	238	6.2	30.0	25	19	0.00
13 Jun	88.8	55.5	73.6	235	8.5	30.7	21	14	0.00
14 Jun	86.1	54.4	73.1	225	13.1	39.2	21	14	0.00
15 Jun	85.7	58.2	72.9	224	13.8	36.2	20	14	0.00
16 Jun	87.4	58.3	73.2	239	10.3	28.3	21	14	0.00
17 Jun	93.4	50.9	73.4	210	6.7	29.1	19	13	0.00
18 Jun	95.6	54.4	77.3	225	7.3	31.1	21	13	0.00
19 Jun	93.7	59.2	77.6	238	7.8	29.6	21	12	0.00
20 Jun	92.1	66.0	78.5	251	7.5	28.3	21	12	0.00

Date	Temperature (°F)			Wind			Humidity		
	Max	Min	Avg	Dir (deg)	Speed (mph)	Peak (mph)	Dew Pt (°F)	Rel Humid (%)	Prci p (in)
21 Jun	98.2	64.5	81.9	356	5.4	26.7	23	12	0.00
22 Jun	93.1	64.1	75.7	105	7.3	40.8	37	26	0.40
23 Jun	93.5	61.4	77.6	287	4.9	24.8	37	28	0.00
24 Jun	94.5	60.0	77.9	216	5.2	23.2	34	24	0.00
25 Jun	93.7	63.4	79.7	250	8.6	29.4	31	19	0.00
26 Jun	92.2	59.4	78.0	248	7.5	30.3	25	15	0.00
27 Jun	91.1	58.4	77.0	244	7.7	27.6	22	13	0.00
28 Jun	95.0	60.2	79.0	261	6.1	25.4	24	13	0.00
29 Jun	94.5	63.1	80.1	245	8.5	27.6	30	19	0.00
30 Jun	91.7	63.6	78.6	237	12.4	38.4	24	14	0.00
1 Jul	88.8	66.5	77.2	223	16.7	45.2	23	13	0.00
2 Jul	91.8	58.4	75.5	243	8.4	28.3	22	15	0.00
3 Jul	96.0	58.2	78.9	233	6.3	22.8	22	12	0.00
4 Jul	99.7	63.7	83.2	242	5.6	22.4	23	12	0.00
5 Jul	103.1	65.2	85.8	274	6.3	22.6	24	11	0.00
6 Jul	95.3	64.1	79.1	225	12.9	37.9	48	37	0.26
7 Jul	91.6	63.4	75.3	260	7.7	46.3	62	67	0.28

TABLE 2 - LIGHT DATA

Date	BMNT	BMCT	Sun Rise	Sun Set	EECT	EENT	Moon Rise	Moon Set	% Illum
3 Jun	0414	0448	0516	1923	1951	2025	0856	0002	55
4 Jun	0414	0448	0516	1924	1951	2026	1005	0036	66
5 Jun	0414	0448	0516	1924	1952	2026	1112	0110	76
6 Jun	0414	0448	0516	1925	1952	2027	1217	0145	84
7 Jun	0413	0447	1516	1925	1953	2028	1320	0223	91
8 Jun	0413	0447	0515	1926	1953	2028	1423	0305	96
9 Jun	0413	0447	0515	1926	1954	2029	1526	0351	99
10 Jun	0413	0447	0515	1927	1954	2029	1629	0440	100
11 Jun	0413	0447	0515	1927	1955	2030	1730	0534	99
12 Jun	0413	0447	0515	1927	1955	2030	1828	0630	96
13 Jun	0413	0447	0515	1928	1955	2030	1921	0726	92
14 Jun	0413	0447	0515	1928	1956	2031	2009	0822	86
15 Jun	0413	0447	0516	1928	1956	2031	2052	0917	78
16 Jun	0413	0447	0516	1929	1956	2032	2129	1011	70
17 Jun	0413	0447	0516	1929	1957	2032	2202	1104	61
18 Jun	0413	0448	0516	1929	1957	2032	2223	1157	51
19 Jun	0413	0448	0516	1930	1957	2032	2302	1253	41
20 Jun	0414	0448	0516	1930	1957	2033	2330	1350	31

INTELLIGENCE/ELECTRONIC WARFARE TEST DIRECTORATE

TABLE 2 (CONT) - LIGHT DATA

Date	BMNT	BMCT	Sun Rise	Sun Set	EECT	EENT	Moon Rise	Moon Set	% Illum
21 Jun	0414	0448	0516	1930	1958	2033	2359	1450	22
22 Jun	0414	0448	0517	1930	1958	2033	2359	1553	13
23 Jun	0414	0449	0517	1930	1958	2033	0029	1657	7
24 Jun	0415	0449	0517	1931	1958	2033	0103	1800	2
25 Jun	0415	0449	0517	1931	1958	2033	0142	1900	0
26 Jun	0415	0450	0518	1931	1958	2033	0226	1954	0
27 Jun	0416	0450	0518	1931	1958	2033	0319	2018	2
28 Jun	0416	0450	0518	1931	1958	2033	0420	2114	6
29 Jun	0416	0451	0519	1931	1958	2033	0527	2204	13
30 Jun	0417	0451	0519	1931	1958	2033	0639	2326	33
1 Jul	0417	0452	0520	1931	1958	2033	0637	2237	1
2 Jul	0418	0452	0520	1931	1958	2033	0749	2042	5
3 Jul	0418	0453	0520	1931	1958	2033	0858	2124	12
4 Jul	0419	0453	0521	1931	1958	2033	1007	2201	20
5 Jul	0419	0454	0521	1930	1958	2033	1112	2312	31
6 Jul	0420	0454	0522	1930	1958	2032	1217	2347	41
7 Jul	0420	0455	0522	1930	1957	2032	1320	--	52

NOTE: BMNT = Beginning morning nautical twilight
BMCT = Beginning morning civil twilight
EENT = Ending evening nautical twilight
EECT = Ending evening civil twilight

3.3 ELECTRONIC COMBAT
This functional area includes facilities involved in the testing of stand-alone electronic combat systems and electronic combat subsystems that are normally integrated into other weapon systems. It includes the testing of systems or subsystems that have as their primary mission threat warning, testing of systems that provide countermeasures in the RF (radio frequency) spectrum against radars and other RF sensors, systems that provide countermeasures that are used against sensors in the electro-optical or infrared spectrum as well as testing of electronic and C3 countermeasures.

3.3.A Threat Environment (MV I) - Measure of Merit: Extent to which the capability satisfies weapon system requirements.

- 3.3.A.1 What is the number of threats simulated?

The number is virtually unlimited. The systems may be configured and tailored to simulate any number of threat signals between the frequency ranges 2 MHz and 40 GHz.

- 3.3.A.2 How many simultaneous threats can be simulated? What type (e.g., AI, AAA, SAM)? What is maximum signal density? Average density? What power level? What band? Radiated or injected?

11 low power communications systems each of which is computer controllable to represent any number of threats one at a time;
3 high power ECM/ESM systems;
1 very sophisticated ESM threat (receive only);
4 less sophisticated ESM threats (receive only);
39 tactical radios each of which may represent a threat communications system.
Total 58

Maximum signal density: 54 simultaneous signals
Average signal density: 10 simultaneous signals

SYSTEM	NUMBER	TYPE	POWER LEVEL max watts	FREQUENCY BAND
AI/EWTS	11	Coms Signals	350	2-30 MHZ
			22	30-100
			80	100-1000
			5	1000-1300
VMT-A	1	ECM/ESM	3,550	20-100 MHz
			3,400	100-500
			3,300	500-700
			4,000	700-1000
VMT-B	1	ECM/ESM	316,000	1-2 GHz
			158,000	2-4
			63,000	4-8
			40,000	8-12.4
			50,000	12.4-18
			100	18-26.5
			80	26.5-40
VMT-C	1	ECM/ESM	17,000	2-4 MHz
			27,500	4-6
			55,000	6-30
EWMF	1	ESM	N/A	2 MHz-40 GHz
FIM	4	ESM	N/A	10 KHz-18 GHz
Tact Radios	39	Coms signals	140	2-88 MHz

All of the above systems produce radiated signals.

- 3.3.A.3 Are the threat software models and simulators (software/hardware) validated? Yes/No. If yes, by whom?

Threat simulators are validated by U.S. Army Operational Test and Evaluation Command (OPTEC) HQS.

- 3.3.A.4 Do you conduct open-loop testing? Reactive? Closed loop? Yes/No for each.

Open Loop Testing? YES. Reactive? YES. Closed Loop? NO.

- 3.3.A.5 What is the threat representation (fidelity) and density?

Threat Fidelity: Our ability to program and adjust virtually every characteristic of a signal allows us to reproduce threat signals well within the specifications of system exploitation documents. Since our transmitters are not designed to replicate a specific system, but rather are flexible to replicate numerous current and postulated threats, these transmitters are validated on a test-by-test basis.

Threat Density: Our automated systems give us the ability to transmit 14 threat signals simultaneously, with each transmitter able to change frequency, modulation, and message content within a second of the last transmission. This capacity allows us to replicate many different threats from each transmitter site. These automated systems may be augmented by the 39 tactical radios to provide an even larger number of simultaneous signals, however, these tactical radios each require a dedicated operator and may only represent one system.

- 3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/No. If yes, describe.

Yes, these systems are designed to simulate land threat communications and non-communication emitters. The flexibility of these systems allow them to be tailored to electronically simulate sea-based threats. They are mobile, configured within step vans and 40-foot semitrailers which may be carried on-board a ship to simulate sea-borne threats.

- 3.3.A.7 What geographic dispersion can be simulated?

The geographic potential is frequency dependent, see 3.3.A.7.B.

- 3.3.A.7.A Threat lay down?

Tailorable to represent the electronic elements of a threat regiment.

- 3.3.A.7.B Representative distance?

In high frequency (HF) testing these systems have transmitted from over 1200 miles away to receivers at Fort Huachuca. The very high frequency (VHF) and ultra high frequency (UHF) tests are all line of sight which varies from a nominal 20 miles on the ground to over 100 miles for airborne test systems.

- 3.3.A.8 Are the threats moveable (i.e., dynamic) within a test

scenario? Relocatable to new scenarios? Yes/No.

Yes, the tactical radios are the most mobile. Mounted in tactical vehicles, they may transmit on the move. The other systems must be stationary during operation, but are all mobile and may be moved to a new location as needed. The transmitters may very quickly change their transmitter personalities to represent many different threats within the same scenario or to contribute in different scenarios from one location.

- 3.3.A.9 Is the facility interlinked with off-site threats? Yes/No. If yes, how are you linked?

No, these systems may be interlinked with their central control, with each other, or may be programmed as independent, stand-alone transmitters. These systems have not been interlinked with other facilities.

- 3.3.A.10 Is there a limit on simultaneous users? Yes/No. If no, explain.

No, most of these systems transmit in all directions and may therefore be received by test systems anywhere within the geography of the test area.

3.3.B Test Article Support (MV II) - Measure of Merit: Extent to which test support satisfies weapon system test requirements.

- 3.3.B.1 Is there a size, weight, or other limitation on test operations the facility can support? Yes/No. If so, identify the limits and measures to remove them.

No, only frequency range.

- 3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

Up to eight (8) countermeasures systems may be received and evaluated simultaneously.

- 3.3.B.3 What range of spectra can be tested and evaluated?

In the radio frequency (RF) range these systems complement each other to transmit and receive across the entire range of 2 MHz to 40 GHz.

In the testing of reconnaissance systems, the visual and infrared spectrum are also utilized.

- 3.3.B.4 What are the available spectra?

Any portion of the electromagnetic spectrum may be requested and arrangements made to allow its use.

- 3.3.B.5 Do you have a scene generation capability? Yes/No. If yes, describe.

Yes, the AI/EWTS systems provide the ability to script a scenario to create an environment of threat communications traffic. The environment may be further enhanced with the tactical radios and the high power ECM systems.

IEWTD DIRECT LABOR FY 86 THROUGH FY 93

T TITLE	INCL DATES	TEST DAYS x 10 HRS	DIRECT LABOR (TOT PERS)	TOTAL (HRSxPERS
FY 86:				
NAP OF THE EARTH	21 OCT-1 NOV 85	12x10=120	12x120	= 1,440-EC
AN/TMQ-30	21 OCT-6 NOV 85	18x10=180	10x180	= 1,800-EC
RACAL JAMMER ULQ-19A	15-22 NOV 83	8x10=80	10x80	= 800-EC
RACAL JAMMER ULQ-19A	2-6 DEC 85	7x10=70	10x70	= 700-EC
C3CM (SPT)	15-22 NOV 85	8x10=80	10x80	= 800-EC
IGRV	24 FEB-15 MAR 86	20x10=200	81x200	= 16,200-AV
BAT-D	6-28 FEB 86	9x10=90	23x90	= 2,070-O
BAT-D	1 FEB-31 MAR 86	11x10=110	11x110	= 1,210-O
REMBASS SIMULATOR	6 MAY-12 JUN 86	32x10=320	94x320	= 30,800-EC
TRQ-37	11-25 JUN 86	11x10=110	21x110	= 2,310-EC
PRD-11	26 JUN-27 JUL 86	28x10=280	24x280	= 6,720-EC
CL-289 UAV	3-28 FEB 86	20x10=200	3x200	= 600-O
	21 APR-16 MAY 86	20x10=200	3x200	= 600-O
	25 AUG-7 OCT 86	32x10=320	3x320	= 960-O
ALQ-136(XE-3)	21 FEB-22 APR 86	38x10=380	35x380	= 13,300-AV
	22 APR-8 MAY 86	18x10=180	18x180	= 3,240-AV
	FY 86 TOTAL:	EC = 45,370		
		AV = 32,740		
		O = 5,440		
		TOTAL = 83,550		
87:				
PRD-11	5-12 DEC 86	13x10=130	19x130	= 2,470-EC
HACJAM, HFDF	16-30 OCT 86	16x10=160	25x160	= 4,000-EC
HMS (TENCAP)	16-19 NOV 86	6x10= 60	9x60	= 540-O
	17-18 DEC 86	3x10=30	9x30	= 270-O
	13-16 JAN 87	6x10=60	9x60	= 540-O
	16 MAR-16 APR 87	26x10=260	9x260	= 2,340-O
SASS	14 JAN-18 FEB 87	31x10=310	8x310	= 2,480-O
CHIEF	1 APR-24 MAY 87	45x10=450	15x450	= 6,750-EC
QUICKLOOK II	20 APR-17 JUL 87	70x10=700	32x700	= 22,400-AV
TRAFFIC JAM	13 MAY-24 JUN 87	36x10=360	33x360	= 11,880-EC
STAJ-IHFR	1-30 JUN 87	25x10-250	15x250	= 3,750-EC
EXDRONE UAV	10 AUG-10 SEP 87	19x10=190	30x190	= 5,700-AV
EXDRONE UAV	10 AUG-10 SEP 87	10x10=100	30x100	= 3,000-O
ALQ-136(XE-3)	6-20 OCT 86	11x10=110	35X110	= 3,850-AV
	7-10 JUL 87	5x10=50	35x50	= 1,750-AV
	17-25 AUG 87	8x10=80	35x80	= 2,800-O
CTT	30 MAR-4 APR 87	8x10=80	34x80	= 2,720-AV
	21-30 JUL 87	12x10=120	34x120	= 4,080-AV
	FY 87 TOTAL:	EC = 28,850		
		AV = 40,500		
		O = 11,970		
		TOTAL = 81,320		

IEWTD DIRECT LABOR FY 86 THROUGH FY 93

[redacted]T TITLE	INCL DATES	TEST DAYS x 10 HRS	DIRECT LABOR (TOT PERS)	TOTAL (HRSxPERS
FY 88:				
TOP GALLANT (SSP-S)	13-27 OCT 87	16x10=160	30x160 =	4,800-EC
CTT	14 JAN-18 FEB 88	25x10=250	34x250 =	8,500-AV
TEAMPACK (MSQ-103B)	13 OCT-18 NOV 87	32x10=320	60x320 =	19,200-EC
HMS	15-19 NOV 87	5x10=50	9x50 =	450-O
	15-28 FEB 88	14x10=140	9x140 =	1,200-O
UAV-M	15 FEB-3 MAR 88	19x10=190	37x190 =	7,030-AV
EO TDA	24 FEB-16 MAR 88	21x10=210	10x210 =	2,100-EC
PCC/SW TDA	21 MAR-5 APR 88	17x10=170	32x170 =	5,440-EC
ESP (TENCAP)	1-28 JUL 88	25x10=250	10x250 =	2,500-O
VISTA	9 JUN-3 AUG 88	44x10=440	48x440 =	21,120-EC
TEAMMATE (TRQ-32(V)2)	12 MAY-10 JUN 88	26x10=260	72x260 =	18,720-EC
EPLRS	17-19 AUG 88	4x10=40	6x40 =	240-EC
QUICKFIX II	29 FEB-14 APR 88	34x10=340	89x340 =	30,260-AV
	FY 88 TOTAL:	EC =	71,620	
		AV =	45,790	
		O =	4,150	
		TOTAL =	121,560	
FY 89:				
[redacted]CKFIX II	28 SEP-14 OCT 88	18x10=180	89x180 =	16,020-AV
	7 SEP-30 NOV 88	73x10=730	89x730 =	64,970-AV
RACJAM	1-5 MAY 89	7X10= 70	15X70 =	1,050-EC
FPDD	8 MAY-6 JUL 89	52x10=520	253x520 =	131,560-EC
TRAILBLAZER	5 JUN-28 JUL 89	45x10=450	135x450 =	60,750-EC
EFVS	5 JUL-5 AUG 89	29x10=290	7x290 =	2,030-EC
SMARTV EXDRONE	17 OCT-12 NOV 88	25x10=250	28x250 =	7,000-AV
	FY 89 TOTAL:	EC =	195,390	
		AV =	87,990	
		O =	0	
		TOTAL =	283,380	
FY 90:				
LCC ASAS	11 NOV-22 DEC 89	47x24=1128	276x1128=	310,500-O
COMPARE RECEIVERS	12-20 DEC 89	9x10=90	4x90 =	360-EC
EACTB-UIES	5-18 FEB 90	19x10=190	16x190 =	3,040-EC
CCO	4-28 MAR 90	23x10=230	46x230 =	10,580-EC
UAV MTI	26 MAR-30 APR 90	31x10=310	56x310 =	17,360-AV
PRD-12	30 JUL-31 AUG 90	30x10=300	91x300 =	27,300-EC
RAVEN UAV	31 AUG-28 SEP 90	25x10=250	56x250 =	14,000-AV
SANDCRAB	17-21 SEP 90	6x10=60	32x60 =	1,920-EC

[redacted]

IEWTD DIRECT LABOR FY 86 THROUGH FY 93

T TITLE	INCL DATES	TEST DAYS x 10 HRS	DIRECT LABOR (TOT PERS)	TOTAL (HRSxPERS
	FY 90 TOTAL:	EC = 43,200		
		AV = 31,360		
		O = 310,500		
		TOTAL = 385,060		
FY 91:				
APR-39A (XE-2)	13 NOV-20 DEC 90	29x10=290	34x290 =	9,860-AV
	26 JAN-5 FEB 91	10x10=100	34x100 =	3,400-AV
SSP-S	13 NOV-13 DEC 90	25x10=250	85x250 =	212,250-O
GRCS	10 OCT-15 NOV 90	32x10=320	39x320 =	12,480-O
SINCGARS	5-21 DEC 90	15x10=150	3x150 =	450-EC
JEWC ANT	7-10 JAN 91	6x10= 60	8x60 =	480-EC
SINCGARS	15-18 JAN 91	6x10= 60	3x60 =	180-EC
SINCGARS	25-28 FEB 91	6x10= 60	3x60 =	180-EC
PISCES	1-20 FEB 91	19x10=190	9x190 =	1,710-O
JEWC ADM	15-21 APR 91	9x10= 90	8x90 =	720-EC
SINCGARS	20-23 MAY 91	6x10= 60	3x60 =	180-EC
TOPHUNTER	28 MAY-2 JUL 91	31x10=310	75x310 =	23,250-EC
TRACKWOLF	22 JUL-20 AUG 91	27x10=270	94x270 =	25,380-EC
SPEC PROJ(TORPID SHADOW)	23 SEP-3 OCT 91	14x10=140	28x140 =	3,920-O
	FY 91 TOTAL:	EC = 50,820		
		AV = 13,260		
		O = 230,360		
		TOTAL = 294,440		
FY 92:				
PRD-12	10 SEP-29 OCT 91	41x10=410	102x410 =	41,820-EC
TRACKWOLF RETEST	2-13 MAR 92	18x10=180	94x180 =	16,920-EC
FEDD/CDS	2-30 MAR 92	20x10=200	119x200 =	23,800-EC
TOP HUNTER	30 APR-19 JUN 92	42x10=420	75x420 =	31,500-EC
SPEC PROJ(QUESTOR GRAIL)	3-14 MAY 92	17x10=170	30x170 =	5,100-O
UAV-SR	3 JUN-7 JUL 92	40x16=640	813x640 =	520,320-AV
ASAS	8 SEP-27 OCT 92	41x10=410	303x410 =	124,230-O
SINCGARS EC	8-26 JUN 92	17x10=170	20x170 =	3,400-
	FY 92 TOTAL:	EC = 117,440		
		AV = 520,320		
		O = 129,330		
		TOTAL = 767,090		

IEWTD DIRECT LABOR FY 86 THROUGH FY 93

TEST TITLE	INCL DATES	TEST DAYS x 10 HRS	DIRECT LABOR (TOT PERS)	TOTAL (HRSxPERS
FY 93:				
JSTARS GSM	31 JAN-26 FEB 93	32x10=320	221x320	= 70,720-AV
CTT	2-23 MAR 93	21x10=210	98x210	= 20,580-O
SSMS	5-16 APR 93	12x10=120	5x120	= 600-EC
SPEC PROJ (TMD 93)	5 JUL-14 AUG 93	36x10=360	27x360	= 9,720-O
TEAMMATE MC	16 AUG-25 SEP 93	36x10=360	107x360	= 38,520-EC
IFTX	11-15 JAN 93	5x10= 50	10x50	= 500-EC
	6-12 FEB 93	7x10=70	5x70	= 350-EC
	26-30 APR	8x10=80	5x80	= 400-EC
	12-15 JUL 93	4x10= 40	10x40	= 400-EC
	21-26 AUG 93	6x10= 70	10x70	= 600-EC

FY 93 TOTAL:
EC = 41,370
AV = 70,720
O = 30,300
TOTAL = 142,390

TEST TYPE FUNCTIONAL AREAS ARE:
AV - AIR VEHICLES
EC - ELECTRONIC COMBAT SYSTEM
O (OTHER)- TESTS CONDUCTED BY IEWTD AT LOCATIONS OTHER THAN FORT HUACHUCA

TEST DAYS INCLUDES: HISTORICAL AVERAGE OF FIVE DAYS FOR PILOT TEST AND THEN ACTUAL DAYS OF DATA COLLECTION. VULNERABILITY CUSTOMER TESTS INCLUDE TWO DAYS FOR PILOT TEST AND PERIOD OF DATA COLLECTION.

TEST HOURS ARE HISTORICALLY AVERAGED TO 10 HOURS PER DAY, EXCEPT FOR UAV-SR FY 92 WHICH WAS 16 HOURS PER DAY

FY 94 (projected as of 23 May 94):

GSD-I	94-CT-1192	CT	13-16 MAR 94
TROJAN SPIRIT II	94-OT-1767	IOTE	21 MAR-1 APR 94
GBCS-ONS	94-CT-1132	CT	5 JUL-18 AUG 94
ATCCS III ASAS IOTE-II	94-OT-1026D	IOTE-II	1 AUG-22 SEP 94
SPEC PROJ TMD 94	94-FD-0100C	FDTE	22 AUG-5 DEC 94
JSTARS LGSM	94-FD-0247	FDTE	6 SEP-13 OCT 94
IFTX	94-SPT-XX	TNG SPT	25-29 OCT 94
			27 FEB-4 MAR 94
			13-18 MAR 94

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GENERAL INFORMATION

Facility/Capability Title: TEXCOM IEWTD

Origin Date: 6 June 1994

Service: A

Organization/ Activity: IEWTD

Location: Ft Huachuca, AZ

T&E Functional Area: Air Veh / EC

UIC: W3Q2AA

T&E Test Facility Category: OAR

	T&E	S&T	DE	IE	T&D	OTHER = 100%
PERCENTAGE USE:	100					

BREAKOUT BY T&E FUNCTIONAL AREA (%):

Air Vehicles	29.5					
Armament						
EC	50					
Other	20.5					

Total in Breakout Must Equal "Percentage Use" on First Line

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TECHNICAL INFORMATION

FACILITY/CAPABILITY TITLE: TEXCOM IEWTD

Facility Description; including mission statement: Formulates test methodology, develops test plans, conducts tests and reports on assigned user tests, demonstrations, and experiments of Intelligence and Electronic Warfare (IEW) material, doctrine, organization, and training systems, JCS Special Projects, and electromagnetic vulnerability tests.
Interconnectivity/Multi-Use of T&E Facility. 1. Wide Area Network (14.4 KB modem via mhs server). 2. PROFS (9600 baud modem via PROFS GATEWAY from IEWTD to local DOIM, to Fort Leavenworth, to Fort Hood). 3. 19.2 KBPS Data Communications Circuit (on order). Intent is to replace 1 and 2 with this circuit for communications between IEWTD and Fort Hood.
Type of Test Supported: Army and Joint Service operational tests of IEW systems to include Joint Stars, Unmanned Aerial Vehicles (UAV), All Source Analysis System, Signals Intelligence Sensors and Jammers, Imagery sensors, UAV Payloads, SEMA Aircraft Survivability Equipment, TENCAP, and space systems.
Summary of Technical Capabilities: Automated IEW Test System, Electromagnetic Vulnerability Test Systems (See attached).
Keywords: IEW (Intelligence Electronic Warfare); ESM (Electronic Support Measures; ECM (Electronic Countermeasures); RF (radio frequency); DF (direction finding); C3I (Command, Control, Communications, Intelligence).

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TECHNICAL INFORMATION (Cont Page 1)

Summary of Technical Capabilities:

ELECTROMAGNETIC VULNERABILITY TEST SYSTEMS

These systems include ESM/ECM test facilities and RF field measurement equipment. The primary mission of these facilities is vulnerability assessments of tactical C3I systems against current and projected threat in support of operational testing and concept evaluations. Secondary functions include, but are not limited to, maintaining ground truth and replication of threat signals in support of testing. To minimize cost and maximize flexibility, these facilities have been assembled using commercial off-the-shelf equipment. In special cases to intercept, DF, and jam frequency hoppers, unique systems have been developed to TEXCOM IEWTD specifications to meet projected threat capabilities. These assets may be employed separately or in combination to provide additional capabilities. The facilities are transportable, configured in semitrailers (equipment vans), and the additional measurement equipment consists mostly of portable instruments.

These systems consist of one ESM van, three ECM vans, and portable RF equipment. The ESM van is called the Electronic Warfare Monitoring Facility (EWMF). It is configured in a 42-foot expandable semitrailer with full climate control and on-board generator. It is fully operational over the frequency range of 2 MHz to 18 GHz with collection, DF, recording, and analysis equipment/subsystems. Some capabilities extend down to 100 KHz and up to 40 GHz.

The ECM vans are each very similar in capability and operation with their major difference being in frequency range. The Vulnerability Mobile Transmitter (VMT-A) is a 40-foot van covering the VHF/UHF frequency band (20 to 1,000 MHz). The VMT-B is a 40-foot van covering the microwave frequency band (1 to 40 GHz). The VMT-C is a 22-foot van covering the HF frequency band (2 to 30 MHz). Each of these three facilities also has a near real-time integrated ESM capability with display, analysis, and recording systems to verify and document operational parameters as they occur.

Summary of Technical Capabilities:

The portable systems are called the Field Intensity Measurement (FIM) equipment and are used primarily for signal strength measurements. The systems are comprised typically of small, low-power, ruggedized measurement and analysis instruments. This equipment is usually deployed in pickup trucks or vans and powered by small (2 KW) electrical generators. Most of the FIM equipment may be automated with Hewlett-Packard (HP) instrument controllers through the IEEE-488 bus. The resulting measurements may be recorded on disk or dumped to a printer or plotter. Nominal measurement frequency range is 10 KHz to 26 GHz.

AUTOMATED INTELLIGENCE/ELECTRONIC WARFARE TEST SYSTEM (AI/EWTS)

AI/EWTS is an automated field instrumentation system which simulates an Electromagnetic (EM) environment and includes software driven scenarios and associated message scripts. AI/EWTS's primary mission is support of operational testing of IEW systems. Realistic testing of IEW systems' issues requires a realistic EM signature of threat forces. AI/EWTS can provide consistent repeatable EM environments that reflect various threat deployments and scenarios under the control of the test officer.

AI/EWTS consists of four major subsystems including the Operational Test Control Center (OTCC); a command, control, communications network; an array of eleven transmitters; and the associated remote message generator (RMG). The command control receiver/transmitter, Transportable Communication Simulator (TCS), and RMG are integrated within step vans which enhance flexibility, mobility, and transportability.

The OTCC is the focal point for the conduct of operational tests and performs such functions as command/control for the scenario/script generation, orchestration of the frequency/modulation from each simulator, and monitoring by the receiving systems of the electromagnetic signals being generated. The OTCC also serves as a data collection and analysis center by performing near-real-time and real-time recording, analysis, and display of test data and results.

TECHNICAL INFORMATION (Cont Page 3)

Summary of Technical Capabilities:

The communications network between the OTCC and the collocated simulators and message/script generators utilizes a packet radio concept operating at 9600 baud in the 400 to 450 MHz band. A higher capacity data link is planned for the future.

The mobile communications transmitters operate in the frequency range of 2 to 1,300 MHz with a very wide variety of modulation capabilities including, AM, FM, PM, FDM, burst, chirp, frequency hopping, and spread spectrum. These transmitters are, therefore, capable of portraying threat communications signals for use in the test and evaluation of IEW assets. The transmitter power is 20 watts from 2 to 1,000 MHz and 2 watts from 1 to 1.3 GHz. The power output is capable of being adjusted in 1 dB steps over a 63 dB dynamic range. Some of the transmitters have been modified to include 250 watt amplifiers for the HF frequency range (2 to 30 MHz).

The remote message generators (RMGs), located at each simulator, provide a capability for up to a 72-hour script to be transmitted over the selected frequency/modulation schemes. The message capability consists of analog and digital messages with voice traffic being ASCII-driven synthesized or digitally recorded voice.

The initial system configuration consists of one fixed and one mobile OTCC with an array of 11 communications simulators. This will allow for the orchestration of a threat regimental slice of communications in the FM push-to-talk portion of the spectrum and a much larger slice when AM and point-to-point communications are simulated. In addition, each simulator and message/script generator configuration has a stand-alone capability, without the OTCC. The remote/stand-alone feature, variety in modulation types, frequency synthesis of 1 KHz over the entire frequency band, the ability to store 100 frequencies/modulations in nonvolatile memory, and computer control provide the test director a great deal of flexibility with repeatability. Therefore, test directors can repeat a portion(s) of a test with minimal cost implications or repeat tests run years earlier on a system that has either been redesigned or modified.

TECHNICAL INFORMATION (Cont Page 4)

Summary of Technical Capabilities:

COMMUNICATION-ELECTRONICS (CE) SHOP

The CE Shop is an installation, maintenance, repair, and storage facility for the IEWTD'S tactical radio assets. The primary mission of these assets is to provide emitters in support of operational testing of IEW systems. They provide target communications links passing information to evaluate ECM systems. The ratio of received information to transmitted information is a measure of the ECM system's effectiveness. These radios are typically low and medium power push-to-talk radios. Test players are utilized to operate these radio assets in doctrinally correct scripted scenarios. The CE Shop provides training, support, and control on these radios before, during, and after the test. The IEWTD's tactical radios may be deployed individually, paired, or in doctrinally correct formations. Power outputs range from 0.5 to 100 watts. Modulation types include AM, FM, CW, FSK, and SSB. Also available are two frequency hoppers, each with an encrypted and non-encrypted mode of operation. Many of these assets are friendly radios with enough similarity to their threat counterparts to provide an adequate test target. The remainder are actual threat radios lending conclusive evidence to a test's results.

The CE Shop also supports the Global Position Satellite (GPS) location recording system and video assets. The location system is a GPS-based system that provides position location information on instrumented target vehicles for the testing of reconnaissance systems. The video assets are video recording and processing equipment used to document and review displayed information and the operator interface of systems under test.

ADDITIONAL INFORMATION

Facility/Capability Title: TEXCOM IEWTD

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	18	18	20	20	20	20	20
Enlisted	34	31	33	33	33	33	33
Civilian	51(33+18)	58(33+25)	71(35+36)	71(35+36)	50(35+15)	54(35+19)	53(35+18)
Contract	67	53	168	99	70	73	29
Total	170	160	292	223	173	180	135

Total Square Footage: 44,558

Test Area Square Footage: 16,775 Bunker/Motor Pool **Office Space Square Footage:** 27,783

Tonnage of Equipment: 463.8 (Tons) **Volume of Equipment:** 149,349 ft3

Annual Maintenance Cost: $636.1K **Estimated Moving Cost:** _____

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$551.6K	$238.5K	$952K	$1260K	$3000K	$3300K	$770K

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: TEXCOM IEWTD ELECTROMAGNETIC VULNERABILITY TEST SYSTEMS

AGE: 10 Years REPLACEMENT VALUE: $6,080K

MAINTENANCE AND REPAIR BACKLOG: $150K TWTAs for VMT-B

DATE OF LAST UPGRADE: May 1994

NATURE OF LAST UPGRADE: VMT-A 2KW VHF amplifier

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: EWMF Signal Processor Upgrade

   TOTAL PROGRAMMED AMOUNT: $150K FY 95

   SUMMARY DESCRIPTION: New wide bandwidth surveillance receiver and digital signal processor combination.

2. UPGRADE TITLE: VMT-C HF Fast Scan Receiver

   TOTAL PROGRAMMED AMOUNT: $900K FY 95

   SUMMARY DESCRIPTION: A fast scan analog HF receiver with a wide IF bandwidth and automated signal processing for use as a projected threat ESM/ECM against frequency agile and burst HF communications and data links.

FACILITY CONDITION (Cont Page 2)

3. **UPGRADE TITLE:** VMT-B Antenna Tracking Upgrade

TOTAL PROGRAMMED AMOUNT: $280K FY 95

SUMMARY DESCRIPTION: Modification to the antenna pedestal controller to provide an aircraft tracking capability to ensure an airborne test item is radiated.

4. **UPGRADE TITLE:** EWMF Microwave Wide Bandwidth Receiver

TOTAL PROGRAMMED AMOUNT: $170K FY 96

SUMMARY DESCRIPTION: Superheterodyne receiver with a 500 MHz wide IF bandwidth and frequency range of 1 to 40 GHz.

5. **UPGRADE TITLE:** VMT-B L Band TWT Amplifier

TOTAL PROGRAMMED AMOUNT: $400K FY 96

SUMMARY DESCRIPTION: Traveling wave tube amplifier with a power output of 2500 watts CW and frequency range of 1 to 2 GHz.

6. **UPGRADE TITLE:** Electro-Optics (EO) Facility

TOTAL PROGRAMMED AMOUNT: $1,100K FY97

SUMMARY DESCRIPTION: A mobile EO test facility with light-wave sensors, receivers, analyzers, recorders, image processors, and transmitters. Will provide the ability to test U.S. systems' vulnerability to current commercial technology in detection, identification, and blinding, or damage.

FACILITY CONDITION (Cont Page 3)

7. **UPGRADE TITLE:** VMT-B Band TWT Amplifier

TOTAL PROGRAMMED AMOUNT: $400K FY97

SUMMARY DESCRIPTION: Traveling wave tube amplifier with a power output of 2500 watts CW and frequency range of 2 to 4 GHz.

8. **UPGRADE TITLE:** Netted DF System

TOTAL PROGRAMMED AMOUNT: $400K FY 98

SUMMARY DESCRIPTION: A second fast line-of-bearing (LOB) system netted to an identical system in the EWMF to provide true direction finding. Specifications include 2-1200 MHz, 1 KHz resolution, 2 degree RMS accuracy, minimum signal duration 10 milliseconds.

9. **UPGRADE TITLE:** VMT-B C Band TWT Amplifier

TOTAL PROGRAMMED AMOUNT: $400K FY 98

SUMMARY DESCRIPTION: Traveling Wave Tube (TWT) Amplifier with a power output of 2500 watts CW and frequency range of 4 to 8 GHz.

10. **UPGRADE TITLE:** VMT-B K Band Pulse Mode TWT Amplifier

TOTAL PROGRAMMED AMOUNT: $70K FY 99

SUMMARY DESCRIPTION: Pulse mode Traveling wave tube amplifier with a power output of 2500 watts and frequency range of 18 to 27 GHz.

FACILITY CONDITION (Cont Page 4)

FACILITY/CAPABILITY TITLE: TEXCOM IEWTD Automated Intelligence Electronic Warfare Test System (AI/EWTS)

AGE: 6 Years **REPLACEMENT VALUE:** $4,200K

MAINTENANCE AND REPAIR BACKLOG: $2K

DATE OF LA3T UPGRADE: March 1994

NATURE OF LAST UPGRADE: New remote message generators (RMG) consisting of industrial 486-based computers with IEEE-488 bus, eight serial ports, digital sound cards, and read/write optical drive.

MAJOR UPGRADES PROGRAMMED:

1. **UPGRADE TITLE:** AI/EWTS Amplifier Upgrade

   TOTAL PROGRAMMED AMOUNT: $350K FY 95

   SUMMARY DESCRIPTION: Increase in VHF transmission power through addition of 100 watt, 20-500 MHz amplifier to each of 11 transmitters.

2. **UPGRADE TITLE:** AI/EWTS External Modulation Sources

   TOTAL PROGRAMMED AMOUNT: $190K FY96

SUMMARY DESCRIPTION: Three AI/EWTS transmitters will receive external modulation sources consisting of an arbitrary waveform generator and a vector signal generator. This will provide a capability to produce new complex modulations not built into the system.

3. UPGRADE TITLE: AI/EWTS Second Array of Transmitters

TOTAL PROGRAMMED AMOUNT: $3,800K FY 97

SUMMARY DESCRIPTION: Production of a second array of eleven transmitters utilizing the existing Government-owned design for commonality while taking advantage of new technology to enhance performance and long-term supportability. Additional transmitters are now needed to adequately stress the newer, higher capacity systems under test.

4. UPGRADE TITLE: AI/EWTS First Generation Upgrade

TOTAL PROGRAMMED AMOUNT: $600K FY 99

SUMMARY DESCRIPTION: An option in the production contract for a second array will be to upgrade the first generation with the new technology of the second generation to be fully compatible in hardware and functionality.

FACILITY CONDITION (Cont Page 6)

FACILITY/CAPABILITY TITLE: TEXCOM IEWTD COMMUNICATIONS-ELECTRONICS (CE) SHOP

AGE: 12 Years REPLACEMENT VALUE: $595K

MAINTENANCE AND REPAIR BACKLOG: $1K

DATE OF LAST UPGRADE: February 1990

NATURE OF LAST UPGRADE: Procurement of five AN/PRC-117A frequency hopping radios from Harris Corporation.

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: Threat System Adoption

   TOTAL PROGRAMMED AMOUNT: $0

   SUMMARY DESCRIPTION: IEWTD intends to acquire actual threat systems from the exploitation community as their work on the systems is completed and they no longer have a need for the systems.

2. UPGRADE TITLE: _____

   TOTAL PROGRAMMED AMOUNT: _____

   SUMMARY DESCRIPTION: _____

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HISTORICAL WORKLOAD

Facility/Capability Title: TEXCOM IEWTD

FISCAL YEAR

T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	Direct Labor	32740	40500	45790	87990	31360	13260	520320	70720
	Test Hours	766	1250	780	1160	560	390	400	320
	Missions								
EC	Direct Labor	45370	28850	71620	195390	43200	50820	117440	41370
	Test Hours	1240	1350	1600	1330	870	1060	1380	790
	Missions								
ARMAMENT/ WEAPONS	Direct Labor								
	Test Hours								
	Missions								
OTHER T&E	Direct Labor								
	Test Hours								
	Missions								
OTHER) (Tests conducted by IEWTD at other Locations)	Direct Labor	5440	11970	4150	0	310500	230360	129230	30300
	Test Hours	920	900	440	0	1128	900	580	570
	Missions								

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DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: TEXCOM IEWTD

ANNUAL HOURS OF DOWNTIME	1	893
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2	2.4
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	21.6

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7
OT	8	53	424
"TYPICAL"	1	389	389
		TOTAL	813

UNCONSTRAINED CAPACITY PER DAY (LINE 3 x TOTAL)
8 17,560.8

ANNUAL UNCONSTRAINED CAPACITY
9 6,409,692

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2.3 **TECHNICAL RESOURCES**

-2.3.A Does the facility have a specified war-time or contingency role established in approved war plans? Yes/no

No

-2.3.B Does the facility provide a T&E product or service, without which irreparable harm would be imposed on the test mission of the host installation?

Yes

-2.3.B.1 On the test mission of any other activity?

Yes.
- -Air Defense School
- -PEO, Command and Control Systems
  - -PM, ADCCS
  - -PM, FAAD
- -PEO, Intelligence and Electronic Warfare
  - -PM, Stingray
- -PEO, Missile Defense
  - -PM, Army Theater Missile Defense
  - -PM, Corps Sam
  - -PM, Patriot
  - -PM, THAAD
- -USA, TRADOC (Other Component Schools)

2.3.B.2 On any other mission deemed critical to the operational effectiveness of the armed forces of the United States?

Yes

AIR DEFENSE ARTILLERY TEST DIRECTORATE

Question	Answer
3.1.A.1	* Percentage total test workload --- ZERO * facilities interconnection --- NONE
3.1.A.2	NO
3.1.C.1	NO
3.1.C.2	0
3.1.C.3	Yes, A temporary agreement is established with the Director of Environment, Ft Bliss Tx. to cover the occupation period for each range in use.
3.1.C.4	50 mi = 3,000,000 100 mi = 3,200,000 150 mi = 3,250,000 200 mi = 4,000,000
3.1.C.5	NONE, we have restricted airspace with no commercial encroachment.
3.1.C.5.A.	NONE
3.1.C.6	NONE
3.1.D.1	Yes, facilities available at Ft Bliss and surrounding complexes to support any test requirements listed in paragraph as needed for a test.
3.1.D.2	* Yes, targets are augmented and flight profiles flown to support test requirements and coordinated with agencies having availability of the required assets within the Army or sister services.
3.1.D.2.A.	* Yes, validated by the threat agencies within TRADOC, OPTEC and Defense intelligence agencies.
3.1.E.1	* Yes * EC functional area
3.1.E.2	Yes, can increase airspace and land capabilities as needed by test requirements.
3.1.E.3	Yes, can establish up to "Special Access Required"

facilities if required by the test.

3.1.E.4 No

3.1.F.1 * No

3.1.F.2 Yes, FY92 - 5%, FY93 - 5%, Air Force

3.1.G.1 2000 square miles, Air and land
3.1.G.2 Bureau of Land Management (BLM) and DoD Ft. Bliss

3.1.G.3 * 1825 square miles
* no altitude limits, identified by test requirements

3.1.G.4 * No special use airspace
* no simultaneous user in same airspace

3.1.G.5 * Land
* area identified in previous question of square mileage of range capabilities.

3.1.G.6 Yes, projected major missile firings conducted at connecting facilities.

3.1.G.7 58 nautical miles

3.1.G.8 * air corridor between R5107 and R5103
* All testing requiring fixed or rotary wing aircraft
* Yes

3.1.H.1 * Desert, Mountains, 2000 square miles
* NOE Capability:
Fixed-wing, 100 ft; 200 ft over man-made objects
Rotary wing, no minimum ceiling

3.1.H.2 Yes. Desert warfare testing

3.1.H.3 * Yes
PLGR Test - Alaska and Hawaii
MSE test - Germany
Avenger - Huntsville, Al.
NLOS - Ft Hunter Ligget, Ca.
JADO - JEZ - Nellis AFB, Nv.
FAAD C3I - Ft Huachuca, Az.
SIMNET - Ft Knox, Ky.

* 10% per year

3.1.H.4
* 14 days 32 deg
* 261 day 32 - 95 deg
* 90 days > 95 deg.

3.1.H.5
* 351 days 30%
* None 30 - 80%
* 14 days > 80%

3.1.H.6 3 to 4 missions per year

3.1.H.7 None, air missions may be cancelled, however, other test event continue to be executed.

3.1.H.8
* 1 day when visibility less than 1 mile
* none, visibility 1 - 3 miles
* 364 days when visibility is > 3 miles

3.1.H.9 260 days per year (5 days per week minimum)
3.1.H.10 1%

3.4.A.1
* Yes
* 3 phase, 60 Hz, 115 VAC commercial Power
  3 phase, 60 Hz, 115 VAC 30 KW and 60 KW generators
  3 phase, 400 Hz, 115 VAC, 60 KW generator
  3 phase, 400 Hz, 480 VAC commercial power
  28 VDC commercial power
* Max downrange distance 8 Km

3.4.B.1.A
* Oro Grande Range Complex appox. 405 square miles
* SHORAD Range Complex approx. 600 square miles
* Maneuver area #1 approx. 72 square miles
* Maneuver area #2 approx. 103 square miles

3.4.B.1.B
* 2 available
  - Oro Grande Range complex; 259,200 acres
  - SHORAD Range Complex; 384,000 acres

3.4.B.1.C
* Chaparral, STINGER, REDEYE, MAVERICK, HELLFIRE, Foreign missile systems < 10 miles
* PATRIOT, HAWK < 42 miles

3.4.B.2.A
* Unguided 2000# - none
* Guided Weapons - none
* Stand Off weapons - none

* Short Range Missiles - < 5000 ft MSL, listed in paragraph 3.4.B.1.C
- none for other altitudes
* Long Range Missiles - none

3.4.B.2.B Yes

3.4.B.2.C No test requirements

3.4.B.2.D No

GENERAL INFORMATION

Facility/Capability Title: Air Defense Artillery Test Directorate (ADATD)

Origin Date: 05/19/94

Service: Army Organization/Activity: ADATD Location: Ft. Bliss

T&E Functional Area: A/W UIC = W3Q224

T&E Test Facility Category: OAR/MF

	T&E	S&T	DE	IE	T&D	OTHER	=100%
PERCENTAGE USE:	100						
BREAKOUT BY T&E FUNCTIONAL AREA (%):							
Air Vehicles							
Armanent/Weapons	100						
EC							
Other							

Total in Breakout Must Equal "Percentage Use" On First Line

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TECHNICAL INFORMATION

Facility/Capability Title: ADATD

Facility Description; Including Mission Statement:

Plans, conducts, and reports on user tests and field experiments involving doctrine, training, organization and materiel relating to air defense weapon systems, missiles, fire distribution systems, electronic countermeasures and counter-countermeasure equipment and devises, associated software, and target devices as directed by Test and Experimentation Command (TEXCOM) Commander. This includes the following types of equipment and subject areas: Air Defense Simulators and interaction with other combat simulators; all phases of Air Defense Artillery to include command and control tracking devices human limitations and capabilities. and crew procedures for both short range and high-medium altitude Air Defense operations.

Interconnectivity/ Multi-Use of T&E Facility:	The SHORAD and ORO GRANDE Ranges basically entail linking via voice commo to Ft. Bliss Range Command, North/South McGregor Range and WSMR (VHF & UHF as well as the inter range communication nets). Transmission of required data is over a microwave link established as required with use of existing resources at this facility. Future linkages will include the reception of FAA radar air traffic information. Data transmission requirements have not been defined, however, a fiber optics link is being proposed to link all range facilities within Ft. Bliss, McGregor and WSMR for digital and voice communication.
Type of Test Supported:	Plans, conducts and reports on user tests and field experiments involving doctrine, training, organization and materiel relating to Air Defense Weapon Systems, missiles, fire distribution systems, ECM, CCM equipment and devices, associated software and target devices. Includes, Air Defense Simulators, Command and Control Tracking devices, human limitations and capabilities and crew procedures for SHORAD, HIMAD, TMD and THAAD operations.
Summary of Technical Capabilities:	ADATD has the technical capability of providing Time Position & Space information at any of the range locations identified in this document. Other radar & Laser trackers can provide additional Target (FW or RW) & Missile tracking capabilities as required by test requirements. Instrumentation facilities provide for identification, development and installation of specialized instrumentation unique to systems under test. The classified & unclassified computer facility provides this organization with the process/storage power to develop large working databases required to support Division Slice FDT&E as well as IOT&E test in support of TRADOC and OPTEC.
Keywords:	ECM = Electronic Contermeasures; CCM = Counter-Countermeasures, SHORAD = Short Range Air Defense, HIMAD = High-Medium Altitude Air Defense, TMD = Theater Missile Defense, THAAD = Theater High Altitude Air Defense.

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ADDITIONAL INFORMATION

Facility/Capability Title: ADATD

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	12	8	8	8	8	8	8
Enlisted	26	16	12	12	12	12	12
Civilian	56	52	41	41	41	41	41
Contractor	75	100	111	70	146	84	95
Total	169	176	172	131	207	145	156

Total Square Footage: 94,300

Test Area Square Footage: 25,000

Tonnage of Equipment: 3,576 TONS

Annual Maintenance Cost: $450K

Office Space Square Footage: 47,600

Volume of Equipment: 140,126 CU FT

Estimated Moving Cost: Unable to determine

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$291.0K	$620.0K	$3533.3K	$3150.0K	$2280.0K	$1820.0K	$1720.0K

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FACILITY CONDITION

Facility/Capability Title: ADATD

AGE: 12-42 Years

REPLACEMENT VALUE: $59,020K, $10,220K (16 Bldgs), $48,800K (Equip/Instr Value, Property Book)

MAINTENANCE AND REPAIR BACKLOG: $68.1K

DATE OF LAST UPGRADE: Aug 1988

NATURE OF LAST UPGRADE: Upgrades in vault, cooling system and installation of air conditioning in vault.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Power, Lighting, Phone line, Ventilation

   TOTAL PROGRAMMED AMOUNT: $348.1K

   SUMMARY DESCRIPTION:

2. UPGRADE TITLE: Replace office Ceiling

   TOTAL PROGRAMMED AMOUNT: $83K

   SUMMARY DESCRIPTION:

HISTORICAL WORKLOAD

Facility/Capability Title: ADATD

T&E FUNCTIONAL AREA		FISCAL YEAR							
		FY86	FY87	FY88	FY89	FY90	FY91	FY92	FY93
AIR VEHICLES	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	160198	205690	199308	165508	169175	91355	76738	75203
	TEST HOURS	261375	333967	325186	271670	276023	268600	256120	278502
	MISSIONS								
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

Direct Labor = Support hours, indirect (38%)*

Test Hours = Direct labor, test mission (62%)*

test hours exceed annual unconstrained capacity in FY 87 + 88 — near capacity in other FYs — — implies range operates 24 hours/day?

* Direct/Indirect labor spread is based on a sampling of actual Test Resource Management System/Test Resource Cost Accounting System (TRMS/TRCAS) performance data for FY86-90.

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DETERMINATION OF UNCONSTRAINED CAPACITY

Facility/Capability Title: ADATD

ANNUAL HOURS OF DOWNTIME	1	730
AVERAGE DOWNTIME PER DAY (LINE 1+365	2	2
AVERAGE HOURS AVAILABLE PER DAY (24-LINE 2)	3	22

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL 10)
4	5	6	7	8 7920
OT	2	180	360	
				ANNUAL UNCONSTRAINED CAPACITY
				9 2,890,800
"TYPICAL"				
		TOTAL 10	360	

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2.0 Capacity & Technical

2.1.A.1 See Historical Workload Form.

2.1.B.1 Data not available to TEC.

2.1.B.2 See Historical Workload Form.

2.2.A See Determination of Unconstrained Capacity Form.

2.2.B The capacity is limited by technical difficulties of conducting more than one RTCA force-on-force test at a time and by physical size of the range.

2.3.A No war-time or contingency role established in approved war plans.

2.3.B Yes. TEC is the primary tenant on the host installation, Fort Hunter Liggett (FHL). Without TEC's presence, the host installation would have no test mission. Without a replacement tenant, the host installation would not be a sustainable training location.

2.3.B.1 Yes. Tests currently executed at Fort Hunter Liggett would have to be transferred to another installation. Fort Hunter Liggett is one of a very small number of installations world-wide where tests requiring free-play force-on-force with non-eyesafe lasers can be conducted. Additionally, terrain features which provide a natural backstop during laser use and Fort Hunter Liggett's isolation from densely populated or industrial areas provide protection against outside electromagnetic intrusion and allow a greater flexibility in frequency assignments.

Customers: No. Customers would be required to test on other installations.

2.3.B.2 No.

3.1 Over-Arching Measures of Merit

3.1.A.1 0%.

3.1.A.2 Not applicable.

3.1.B See Facility Condition Form.

3.1.C.1 Yes. Current limitations exist for the type and length of use of smoke and obscurants. A limited portion of the installation is restricted to protect Kit Fox during mating season (January through March) and for protection of historical and archeological sites.

3.1.C.2 Environmental restrictions do not limit workload, only flexibility of field testing.

3.1.C.3 No.

3.1.C.4 Total population figures are as follows:

Within 50 miles: 12,000.
Within 100 miles:1,560,000.
Within 150 miles: 7 million (approx.).
Within 200 miles: 10 million (approx.).

3.1.C.5 There are no commercial air/land/sea traffic routes affecting Fort Hunter Liggett. However, there are approximately 250 commercial airline overflights daily which may be redirected with sufficient coordination with the FAA.

3.1.C.5.A No test missions have been cancelled canceled due to commercial or public use activities on or near Fort Hunter Liggett.

3.1.C.6 No test missions have been cancelled due to encroachment during the last two years.

3.1.D.1 TEC has specialized computer facilities as well as extensive instrumentation fabrication and maintenance facilities required to support conduct of instrumented force-on-force testing at Fort Hunter Liggett or elsewhere.

3.1.D.2 Though sometimes used at Fort Hunter Liggett, specialized targets are not required to support TEC.

3.1.E.1 Yes. Fort Hunter Liggett has highly varied terrain which has proven useful for sensor testing in the past. The fact that access to Fort Hunter Liggett ranges can be tightly controlled had proven to be of benefit in previous testing.

3.1.E.1.A Fort Hunter Liggett could accept additional workload in developmental or science and technology testing, though not in the T&E functional areas narrowly defined by this data call.

3.1.E.2 Yes. Increased use could be made of nearby Camp Roberts, and the U.S. Forest Service has been very cooperative in allowing use of airspace over the adjacent National Forest for helicopter operations.

3.1.E.3 Yes. Fort Hunter Liggett has been used in the past for testing of systems requiring special access.

3.1.E.4 No.

3.1.F.1 Fort Hunter Liggett has terrain variety, frequency availability, and laser-safe (hot tactical laser) playing capability not currently available elsewhere within the US.

3.1.F.2 Not directly, but the Marines participated heavily in JAVELIN testing in 1993 and they could make greater use of TEC and Fort Hunter Liggett. Navy SEALs have also used Fort Hunter Liggett ranges in the past.

3.1.G.1 Fort Hunter Liggett has an approximate land mass of 265 square miles. Since the terrain is mountainous, armor cannot be used in all training areas, but there is an extensive road and trail network which provides experimentation sites with multiple avenues of engagement. The terrain is representative of Northwest Asia or Central Europe.

3.1.G.2 Fort Hunter Liggett has approximately 185 square miles of restricted airspace (R-2513), owned and controlled by the installation up to 8,000 feet.

3.1.G.3 Restricted airspace above the 185 square miles at Fort Hunter Liggett can be extended from ground to 24,000 feet with coordination through Oakland Center.

3.1.G.4 No special use airspace.

3.1.G.5 All airspace over land.

3.1.G.6 No known or projected airspace problems would prevent accomplishing TEC's mission.

3.1.G.7 The maximum straight line segment in our airspace is 19 nautical miles.

3.1.G.8 National Forest lands (Los Padres National Forest) and adjacent private lands have been overflown by helicopters and fixed wings in previous force-on-force tests (no live fire). It is anticipated that similar profiles could be flown in future tests.

3.1.H.1 The topography and ground cover/vegetation at Fort Hunter Liggett consists of lightly forested mountains and valleys.

3.1.H.2 Restrictions in trafficability at Fort Hunter Liggett are typical of many mountainous regions of the world. Armor cannot reach all points on Fort Hunter Liggett, and trafficability can deteriorate during the rainy season (January-April).

3.1.H.3 No.

3.1.H.4 The number of days per year the average temperature is below 32 degrees F is less than 1. The number of days per year the average temperature is between 32 and 95 degrees F is 365. The number of days per year the average temperature is above 95 degrees F is 0. (Based on data for 1964-1993.)

3.1.H.5 The number of days per year the average relative humidity is below 30% is 35. The number of days per year the average relative humidity is between 30% and 80% is 283. The number of days per year the average relative humidity is above 80% is 46. (Based on data for 1987-1993.)

3.1.H.6 No test missions were canceled due to weather from 1985-1993.

3.1.H.7 No test days were canceled due to weather from 1985-1993.

3.1.H.8 The number of days per year the visibility is less than 1 mile is 14. The number of days per year the visibility is between 1 and 3 miles is 18. The number of days per year the visibility is greater than 3 miles is 333. (Based on surface observations 1982-

1993.)

3.1.H.9 Not applicable. No flight testing is conducted at Fort Hunter Liggett, only operational testing.

3.1.H.10 Test operations at Fort Hunter Liggett are not restricted by weather. However, operations in MOPP IV gear can be limited by WBGT in the summer, and armor operations may have trafficability limitations from November through March.

3.2 Air Vehicles

3.2.A.2 No supersonic corridors exist at Fort Hunter Liggett.

3.2.A.2-6 Not applicable since supersonic corridors do not exist at Fort Hunter Liggett.

3.2.B.1 Airfield and support facilities at Fort Hunter Liggett (TUSI AAF) consist of the following:

36 helicopter aircraft pads
500 x 50 ft. asphalt lighted runway
Lighted wind sock
An approved Copter Nondirectional Beacon 300 approach
Prepared tower location
Prepared hot refueling area
Prepared hazardous waste collection point
Operations 24 hours per day, 7 days per week

3.2.B.2 Fort Hunter Liggett has an emergency unimproved runway (Schoonover Airstrip) approximately 2.5 miles from TUSI AAF.

3.2.B.3 TUSI AAF is located in the center of the operational test areas at Fort Hunter Liggett, within the installation cantonment area.

3.2.B.4 TUSI AAF is particularly well suited for supporting test operations because of its close proximity to the test and engagement areas.

3.2.B.5 TUSI AAF is classified as a Heliport with minimum support facilities available and limited fixed hanger space.

3.2.B.6 Fort Hunter Liggett is not well-suited for support of fixed-wing aircraft except perhaps UAV. Schoonover Airstrip is used by Guard and Reserve and active duty C-130 aircraft for field tactical training. Approximately 36 rotor wing aircraft can be supported at TUSI AAF. Cruise missiles cannot be supported at Fort Hunter Liggett.

3.2.C.1 Fort Hunter Liggett is not suited for technical testing of air vehicles. Historically it has proven to be an excellent location for operational testing of close air support aircraft.

3.2.C.2 No special facilities for pre-flight checkout or rehearsal of test missions exist at Fort Hunter Liggett.

3.2.C.3 Fort Hunter Liggett can support 36 helicopters during force-on-force testing, supplemented by 3 sets of 2-aircraft sorties of close air support or attack fixed-wing aircraft.

3.2.C.4 UAV and rotary wing operations are the primary missions flown at Fort Hunter Liggett.

3.2.C.5 Air-to-ground force-on-force missions have been flown frequently at Fort Hunter Liggett. Any live firings of air-to-ground weapons occurred prior to 1986.

3.2.C.6 "Telemetry" at Fort Hunter Liggett is limited to instrumented data collection supporting Real Time Casualty Assessment (RTCA). Currently, about 150 players is the maximum which can be instrumented.

3.2.C.7 Fort Hunter Liggett can currently support one RTCA test at a time. Within that test 3 sets of 2-aircraft sorties can be supported.

3.2.C.8 No aircraft are currently stationed at Fort Hunter Liggett.

GENERAL INFORMATION

Facility/Capability Title: TEXCOM Experimentation Center
Origin Date 6/6/94

Service: A Organization/Activity: TEC Location: Fort Hunter Liggett

T&E Functional Area: Air Vehicles UIC: W3Q225

T&E Test Facility Category: OAR

	T&E	S&T	DE	IE	T&D	OTHER =100%
PERCENTAGE USE:	61.53%				21.43%	17.05%

Based on Historical Workload FY 86-93

Breakout by T&E Functional Area(%):

OTHER	56.22%				21.43%	17.05%
Air Vehicle Force-On-Force	5.31%					

Total in Breakout Must Equal "Percentage Use" On First Line

TECHNICAL INFORMATION

FACILITY/CAPABILITY TITLE: TEXCOM Experimentation Center (TEC)

Facility Description,including mission statement: The mission of TEC is to

- Conduct high quality field experiments and tests in a unique test environment using very precise instrumentation
- Provide high resolution data for model simulation/war games
- Test options for system development, and verify proposed solution to system development challenges
- Develop test instrumentation

TEC and Fort Hunter Liggett provide a highly instrumented test range especially suited to high resolution force-on-force experimentation.

Interconnectivity/Multi-Use of T&E Facility: TEC sometimes shares instrumentation with other DOD T&E facilities.

Type of Test Supported: Operational tests - especially force-on-force test using Real-Time Casualty Assessment (RTCA), and force development tests. TEC also performs or supports other field tests.

Summary of Technical Capabilities: TEC has approximately $42M of computerized instrumentation used in RTCA and a 54,800 square foot facility for developing, fabricating, and maintaining RTCA instrumentation.

Keywords: RTCA, OTE, FDTE

FACT SHEET

TEXCOM Experimentation Center

1. The TEXCOM Experimentation Center, located at Fort Hunter Liggett, California, has the unique capability to provide a total test/experimentation package. It possesses on-site capabilities required for comprehensive test/experiment execution: an instrumentation system for real time casualty assessment, an experimentation battalion of trained armor/mechanized infantry soldiers with operational equipment, a data collection/reduction/assessment capability, and appropriate logistics support. It possesses the expertise and facilities to evaluate materiel, doctrine, tactics, training, and organization in a real world operational environment.

2. As a battlefield laboratory, TEC has experience in a broad variety of combat and combat support missions. Its civilian work force, a combination of Department of the Army civilians and contractor personnel, possesses years of experience in innovative operational testing and experimentation and is integrated with an outstanding military cadre. TEC's high performing team is capable of expert test planning, effective test execution, and offers a future vision of improved test instrumentation. The highly trained experimentation battalion (Armor/Mechanized) provides subordinate elements which are capable of executing both friendly and enemy tactics. The instrumentation development and fabrication facility possesses a unique ability to design, modify, and fabricate instrumentation to meet test needs almost over night.

3. TEC's isolated location provides unequaled access to extremely versatile training areas with a wide variety of weather and terrain conditions, controlled airspace to 24,000 feet, a 360 degree high energy laser play area, isolation from ambient light, and minimal radio frequency (RF) interference. Its location also provides a test location in which to conduct independent operational tests much like the National Training Center provides an independent training facility for the US Army. Additionally, the Fort Hunter Liggett training area provides a C-130 capable dirt airstrip, a Multipurpose Range Complex (MPRC) for tank gunnery, and personnel and equipment drop zones for airborne operations. In proximity to Fort Hunter Liggett is Lemoore Naval Air Station for high performance aircraft staging and a C-5A capable runway, the Fort Ord Military Operations in Urban Terrain (MOUT) site, and additional maneuver area and a railhead on the California Army National Guard installation at Camp Roberts (which is connected to Fort Hunter Liggett by tank trail).

4. TEC's greatest asset/attribute is its flexibility to quickly

respond to customer specific tests and off-cycle test requirements. This can be accomplished because of the unique capabilities described above.

5. TEC's diverse, unique, and cost effective instrumentation capability provides a long term benefit to the US Army. This instrumentation capability is currently renowned for Real Time Casualty Assessment (RTCA) applications during Operational Tests; however, there are many other aspects being developed that will lead the way toward future cost savings and technical efficiencies.

6. Force on Force RTCA testing using TEC instrumentation has evolved over the years into an exceptionally adaptive and responsive capability. Current development incorporates Global Positioning System (GPS) applications for test player location. This allows an expanded realistic battlefield environment to be created, in which soldiers employ new weapons systems or technologies. A component based approach has proven successful in the creation and employment of the instrumentation inventory. This enables the tailoring of the instrumentation suite to meet the unique data collection requirements set forth for each test. Modification, replacement, interfacing, programming, or upgrading decisions are done at the component level, which constrains risk, reduces cost, and increases responsiveness.

7. Development work is currently underway to expand the TEC instrumentation capability into the world of modeling and simulation. TEC has recently been involved in a tri-service project entitled Environmental Effects for Distributed Interactive Simulation (E2DIS). This project centers around the unique capability to quantify environmental effects on weapon systems. It links Fort Hunter Liggett into the DIS network, resulting in the potential for significant cost savings. Twenty years of historical data on Army sensors tested in field conditions against Fort Hunter Liggett terrain and various threat arrays exists, which can be compared with models. There is a unique one meter resolution data base of every feature in the exercise area, with which field data can be rigorously analyzed. There is a system which interfaces simulation with field exercises in real time, forming a "Bridge to Reality." The most significant capability is that simulation validation can be improved from one-on-one acquisition scenarios to full scale Force on Force, where analysis is carried through to full combat effectiveness.

8. In summary, TEC and Fort Hunter Liggett are a special combination of personnel, terrain, and technology that contributes significantly to the Army and Defense mission. This capability ensures both the accomplishment of cost effective experimentation and testing in an operational environment and the appropriate link of simulations and models to actual field exercises for realism and validation.

ADDITIONAL INFORMATION

Facility/Capability Title: TEXCOM Experimentation Center (TEC)

Personnel

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	56	56	43	40	35	24	24
Enlisted	382	382	324	210	180	157	157
Civilian	72	72	64	43	42	24	24
Contractor	166	166	UNK	UNK	UNK	UNK	UNK
TOTAL	676	676	431+	293+	257+	205+	205+

Total Square Footage: 381,416
Office Space Square Footage: 153,525
Test Area Square Footage: N/A (Open Air Range)
Volume of Equipment: 1,000,000 cf
Tonnage of Equipment: 3200 tons
Estimated Moving Cost: Unknown
Annual Maintenance Cost: $2.4M

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$1.3M	$1.4M	$3.0M	$3.3M	$3.0M	UNK	UNK

FACILITY CONDITION

Facility/Capability Title: TEXCOM Experimentation Center (TEC)
(Provided by Fort Hunter Liggett Installation)

AGE: 54 Replacement Value: NOT KNOWN

MAINTENANCE AND REPAIR BACKLOG: $6M

DATE OF LAST UPGRADE: 1994

NATURE OF LAST UPGRADE: SEWER/ELECTRICAL

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Primary electrical

Total programmed amount: Not Known
Summary Description:

2. UPGRADE TITLE:

Total programmed amount:
Summary description:

HISTORICAL WORKLOAD

Facility/Capability Title: TEXCOM Experimentation Center (TEC)

FISCAL YEAR

		86	87	88	89	90	91	92	93
OTHER T&E	DIRECT LABOR	389492	58904	509712	166788	374112	425674	963112	73660
	TEST HOURS	1908	336	2000	820	1080	1330	2520	580
	MISSIONS								
OTHER AIR VEHICLE FORCE-ON-FORCE	DIRECT LABOR	0	149248	0	0	0	0	0	0
	TEST HOURS	0	528	0	0	0	0	0	0
	MISSIONS								

Based on direct labor hours expended during test only
(Government, Contractor and Player hours included)

HISTORICAL WORKLOAD

Facility/Capability Title: TEXCOM Experimentation Center (TEC)

FISCAL YEAR

		86	87	88	89	90	91	92	93
OTHER T&E	DIRECT LABOR	665812	112344	830832	425188	663872	629834	1045032	104860
	TEST HOURS	1908	336	2000	820	1080	1330	2520	580
	MISSIONS								
OTHER AIR VEHICLE FORCE-ON-FORCE	DIRECT LABOR	0	225408	0	0	0	0	0	0
	TEST HOURS	0	528	0	0	0	0	0	0
	MISSIONS								

Based on direct labor hours expended before, during, and after test (Government, Contractor and Player hours included)

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: TEXCOM Experimentation Center (TEC)

ANNUAL HOURS OF DOWNTIME: 1 0
AVERAGE DOWNTIME PER DAY (LINE 1+365) 2 0
AVERAGE HOURS AVAILABLE PER DAY (24-LINE 2) 3 24

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST FACILITY HOUR	WORKLOAD PER FACILITY HOUR
4	5	6*	7*
FORCE ON-FORCE	1	296.56	296.56
OTHER	2	176.41	352.82

* Based on direct labor hours expended during test only.

Line 7: Total = 649.38
Line 8: Unconstrained = 15,585.12
Line 9: Annual Unconstrained Capacity = 5,688,568.80

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: TEXCOM Experimentation Center (TEC)

ANNUAL HOURS OF DOWNTIME:	1	0
AVERAGE DOWNTIME PER DAY (LINE 1+365)	2	0
AVERAGE HOURS AVAILABLE PER DAY (24-LINE 2)	3	24

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST FACILITY HOUR	WORKLOAD PER FACILITY HOUR
4	5	6*	7*
FORCE ON-FORCE	1	453.33	453.33
OTHER	2	341.90	683.80

* Based on direct labor hours expended before, during and after test.

Line 7: Total = 1,137.13
Line 8: Unconstrained = 27,291.12
Line 9: Annual Unconstrained Capacity = 9,961,258.80

Document Separator

Test and Evaluation Requirements Form
(Attachment 1)

Requirement Areas	Air-to-Air	Air-to-Surface	Surface-to-Air	Cruise Missiles	Theater Short Range	Missile Medium Range	Defense Long Range	Air Vehicles	Electronic Combat
	Armamental Weapons								
1. Required Air Space									
a. Total Square (nmi)								2457	13958
b. Downrange (nmi)								91	80
c. Crossrange (nmi)								27	25.4
d. System/Scenario Driving Req								UAV	JSTARS/Compass Call EPLRS
2. Restricted Air Space									
a. Total Square (nmi)								1896	86
b. Downrange (nmi)								68	9
c. Crossrange (nmi)								27	12
d. System/Scenario Driving Req								UAV	Band IV MILES 2000
3. Required Total Land									
a. Total Square (nmi)								136	13,900
b. Downrange (nmi)								17	53.9
c. Crossrange (nmi)								15	25.4
d. System/Scenario Driving Req								UAV	JSTARS/UAV EPLRS
4. Required DoD Land									
a. Total Square (nmi)								105	105.4
b. Downrange (nmi)								15	12.4
c. Crossrange (nmi)								7	8.5
d. System/Scenario Driving Req								UAV	JSTARS/ MILES 2000/ AGES II
5. Required Sea Space									
a. Total Square (nmi)								N/A	N/A
b. Downrange (nmi)									
c. Crossrange (nmi)									
d. System/Scenario Driving Req									

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09/23/94 08:28 SEP-22-94 THU 15:30 TOPD P.13 12 09/23/94 06:07AM 02789170 P.03

Test and Evaluation Requirements Form
(Attachment 1)

Requirement Areas	Air-to-Air	Armament/ Weapons Air-to-Surface	Surface-to-Air	Cruise Missiles	Theater Short Range	Missile Medium Range	Defense Long Range	Air Vehicles	Electronic Combat
								91	98
6. Required Straight Line Segment								N/A	N/A
a. Total Requirement (nmi)								UAV	EA6B/
b. Supersonic Corridor Req (nmi)									EC-130H
c. System/Scenario Driving Req									

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White Sands Missile Range
BRAC Data Call Number 7–Test and Evaluation Supplement
(US Army Electronic Proving Ground)

1. Attachment 1, Test and Evaluation Requirements Form is modified in accordance with the following guidance from Mr. Gary Holloway:

a. The data on the SR71 and Shuttle are not to be considered as test and evaluation requirements.

b. The straight line distance required for the EA6B and EC-130H to reach the test area should not be reflected on Attachment 1.

2. Other corrections to Attachment 1 have been made as a result of cross checking Attachment 2, Description of Requirements and Methodology Forms.

WAYNE L. SITTLER
COL SC
Commanding

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY TEST AND EVALUATION COMMAND
ABERDEEN PROVING GROUND, MARYLAND 21005-5055

REPLY TO ATTENTION OF

AMSTE-TA-O (5-10c)

MEMORANDUM FOR Commander, U.S. Army Materiel Command, ATTN: AMCRD-IT, 5001 Eisenhower Avenue, Alexandria, VA 22333-0001

SUBJECT: BRAC 95 Data Call #7 - Test and Evaluation (Supplement)

1. This memorandum forwards the TECOM response to the BRAC 95 Data Call #7 - Test and Evaluation (Supplement).

2. The TECOM response to subject data call has been crosswalked for consistency with prior TECOM responses.

3. The response itself consists of:

a. TECOM certification (enclosure 1).

b. Certification, data and unique considerations from TECOM's test centers that were appropriate for this data call (Aviation Technical Test Center, Combat Systems Test Activity, Redstone Technical Test Center, White Sands Missile Range, and Yuma Proving Ground). Data for the Electronic Proving Ground is separately certified in order to meet suspense, but should be considered along with the data from White Sands Missile Range per TECOM's business plan to consolidate these test centers in FY95.

c. Data from White Sands Missile Range on the Patriot Missile System will be provided on 24 Aug 94.

d. Hardcopies (5 copies) and computer disks (2 copies, WordPerfect) will be forwarded as soon as possible.

4. My staff points of contact at this headquarters are Mr. Brian M. Simmons or Mr. James F. Fisher, AMSTE-TA-O, amstetao@apg-9.apg.army.mil, DSN 298-1417, COMM (410) 278-1417.

FOR THE COMMANDER:

2 Encls

JAMES R. KING
Colonel, GS
Deputy Commander

BRAC 95 DATA CALL #7 - Test and Evaluation (Supplement)

CERTIFICATION

The information contained in this memorandum is accurate and complete to the best of my knowledge.

JAMES R. KING
Colonel, GS
Deputy Commander

DEPARTMENT OF THE ARMY
U. S. ARMY COMBAT SYSTEMS TEST ACTIVITY
ABERDEEN PROVING GROUND, MARYLAND 21005-5059

REPLY TO
ATTENTION OF

STECS-RM-T (70-10p)

18 AUG 1994

MEMORANDUM FOR Commander, U.S. Army Test and Evaluation Command,
ATTN: AMSTE-TA-O

SUBJECT: BRAC 95 Data Call #7 - Test and Evaluation, Supplemental

1. Reference memorandum, AMSTE-TA-O, no date, subject as above.

2. The U.S. Army Combat Systems Test Activity (CSTA) submits the enclosed data package (five copies plus two disks in Word Perfect) detailing our requirements for air/land/sea assets with supporting rationale. This data covers Air Base Range 8 as well as our Multispectral Signature Acquisition Systems capability.

3. The information contained in this report is accurate and complete to the best of my knowledge and belief.

4. The technical point of contact for this action is Mr. Frank Carlen, extension 3-2325. The administrative point of contact is Mrs. Sue Sanderson, extension 3-4639.

Encl
as

JAMES KRIEBEL
Colonel, FA
Commanding

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WHEN SEPARATED FROM ENCLOSURES

3

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TEST AND EVALUATION REQUIREMENTS FORM

ATTACHMENT 1

USACSTA

Defense REQUIREMENT AREAS Vehicles	Air Combat	Electronic Air-to-Air	Air-to-Surface	Armaments/ Weapons Surface-to-Air Range	Categories Missiles Range	Cruise Short Range	Theater Medium	Missile Long
1. Required Air Space								
a. Total Square (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None
b. Downrange (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None
c. Crossrange (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None
d. Sys/Scenario Driving Requirement*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None
2. Restricted Air Space (to include Warning Areas)								
a. Total Square (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	56
b. Downrange (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8
c. Crossrange (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7
d. Sys/Scenario Driving Requirement*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	See Attch
3. Required Total Land Space (to include Warning Areas)								
a. Total Square (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30
b. Downrange (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
c. Crossrange (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
d. Sys/Scenario Driving Requirement*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	See Attch
4. Required DoD Land Space (to include Warning Areas)								
a. Total Square (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30
b. Downrange (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6
c. Crossrange (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5
d. Sys/Scenario Driving Requirement*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	See Attch
5. Required Sea Space (to include Warning Areas)								
a. Total Square (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None
b. Downrange (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None
c. Crossrange (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None
d. Sys/Scenario Driving Requirement*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None
6. Required Straight Line Segment								
a. Total Requirement (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3
b. Supersonic Corridor Requirement (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	None
c. Sys/Scenario Driving Requirement*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	See Attch

*Use as many copies of that attached form as required to provide an explanation of the requirements driver(s) and the method(s) used to determine the numerical values.

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Description of Requirements Drivers and Methodology Form

USACSTA

Category: EC

Subcategory: LAND COMBAT

Requirements Area: 2, 3, 4 & 6

a. System Description:

1. Signature Management Technology of Land Combat Vehicles
2. M1A2 (Abrams)
3. M8 (AGS)

b. Engagement/Scenario Description:

Line-Of-Sight (LOS) on land **DOWNRANGE** to 3 Nautical Miles (nm) in an enclosed (secured) arena to include temperate foliage consisting of tree line (forest) and grassy terrain. **CROSSRANGE** requirement for a 2 nm LOS. A separate area required for mmw and specification compliance testing to include similar terrain features as previously noted and tower with mobile turntable combination. Additional area required for cross country and obstacle course, required for RAM studies of land combat systems needed in determining degradation of these systems, similar to the Munson Test Course at APG, MD.

c. Description of Method Used to Determine Space Requirements:

Restricted Space requirements were determined by adding 1 nm to either perimeter required for a specific area. The areas are dictated by the tactical engagement range for a land combat system.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E X

OT&E ____

Both ____

ATTACHMENT 2

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DEPARTMENT OF THE ARMY

UNITED STATES ARMY YUMA PROVING GROUND

YUMA, ARIZONA 85365

REPLY TO ATTENTION OF

STEYP-MT-EA (70-10r)

MEMORANDUM FOR Commander, U.S. Army Test and Evaluation Command, ATTN: AMSTE-TA, Aberdeen Proving Ground, MD 21005-5055

SUBJECT: BRAC 95 Data Call #7 - Test and Evaluation, Supplemental

1. Enclosed is the Yuma Proving Ground response to the referenced data call. The information contained in this report is accurate and complete to the best of my knowledge and belief.

2. POC for this action is Scott Dellicker, STEYP-MT-EA, DSN 899-6102.

Charles Walker LTC, AD

for RICHARD R. WALKER
Colonel, Aviation
Commanding

45? USATPG

Requirement Areas	Categories								
	Armament/Weapons (Air)			Cruise Missiles	Theater Missile Defense			Air Vehicles	Electronic Combat
	Air-Air	Air-Surface	Surface-Air		Short Range	Med Range	Long Range		
1. Required Air Space									
a. Total Square NMi	504	504	N/A	N/A	N/A	N/A	N/A	3750	N/A
b. Downrange (NMi)	42	42	N/A	N/A	N/A	N/A	N/A	250	N/A
c. Crossrange (NMi)	12	12	N/A	N/A	N/A	N/A	N/A	15	N/A
d. System/Scenario Driving Reqmt	ATAS	R/W-FC	N/A	N/A	N/A	N/A	N/A	UAV-MAE	N/A
2. Restricted Air Space									
a. Total Square NMi	504	504	N/A	N/A	N/A	N/A	N/A	1806	N/A
b. Downrange (NMi)	45	42	N/A	N/A	N/A	N/A	N/A	42	N/A
c. Crossrange (NMi)	12	12	N/A	N/A	N/A	N/A	N/A	43	N/A
d. System/Scenario Driving Reqmt	ATAS	R/W-FC	N/A	N/A	N/A	N/A	N/A	UAV-MAE	N/A
3. Required Total Land Space									
a. Total Square NMi	504	504	N/A	N/A	N/A	N/A	N/A	1806	N/A
b. Downrange (NMi)	45	42	N/A	N/A	N/A	N/A	N/A	42	N/A
c. Crossrange (NMi)	12	12	N/A	N/A	N/A	N/A	N/A	43	N/A
d. System/Scenario Driving Reqmt	ATAS	R/W-FC	N/A	N/A	N/A	N/A	N/A	UAV-MAE	N/A
4. Required DoD Land Space									
a. Total Square NMi	504	504	N/A	N/A	N/A	N/A	N/A	630	N/A
b. Downrange (NMi)	45	42	N/A	N/A	N/A	N/A	N/A	42	N/A
c. Crossrange (NMi)	12	12	N/A	N/A	N/A	N/A	N/A	15	N/A
d. System/Scenario Driving Reqmt	ATAS	R/W-FC	N/A	N/A	N/A	N/A	N/A	UAV-MAE	N/A
5. Required Sea Space									
a. Total Square NMi	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
b. Downrange (NMi)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
c. Crossrange (NMi)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
d. System/Scenario Driving Reqmt	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6. Required Straight Line Segment									
a. Total Requirement (NMi)	42	42	N/A	N/A	N/A	N/A	N/A	42	N/A
b. Supersonic Corridor (NMi)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
c. System/Scenario Driving Reqmt	ATAS	R/W-FC	N/A	N/A	N/A	N/A	N/A	UAV-MAE	N/A

ATAS = Air-Air Stinger R/W-FC = Rotary Wing - Fire Control UAV-MAE = Unmanned Air Vehicle Medium Altitude Endurance

7

USATPG

Description of Requirements Drivers and Methodology Form

Category: Armament/Weapons

Subcategory: Air-to-Air

Requirement Area: All (excluding sea space)

a. System Description:

ATAS: Air-to-Air Stinger

Testing of the Air-to-Air Stinger missile system including air drop certification, weapons integration, and system modifications.

b. Engagement/Scenario Definition:

Firing of missile on fixed and aerial targets with firing aircraft velocities from hover to 100NMi/Hour.

c. Description of Method Used to Determine Space Requirements:

Review of established missile and designation laser safety fans. Range requirement is driven primarily by the laser operations necessitating protection up to 80 kilometers.

d. DT&E or OT&E Requirements

DT&E x

OT&E _____

BOTH _____

USATPO

Description of Requirements Drivers and Methodology Form

Category: Armament/Weapons

Subcategory: Air-to-Surface

Requirement Area: All (excluding sea space)

a. System Description:

R/W - FC: Rotary Wing - Fire Control

Testing of advanced air to ground munitions such as the Longbow Hellfire missile system, weapons integration, and fire control acquisition systems.

b. Engagement/Scenario Definition:

Performance evaluations of the Longbow Fire Control Radar and Missile System including interoperability testing. Maximum requirements are driven from targeting scenarios of multiple (up to 25) and aerial (up to 15) target vehicles simultaneously. Multiple lines of fire for Hellfire/gun engagements are included. Test area must include multiple target aspect radials against target arrays.

c. Description of Method Used to Determine Space Requirements:

Review of established missile, fire control radar, and laser safety footprints. System scenario defined by existing Longbow test plans and system capabilities. Range requirement is driven primarily by the laser operations necessitating protection up to 80 kilometers. With proper terrain backgrounds, range requirement could be reduced to 22 kilometers if terrain termination of laser energy can be ensured.

d. DT&E or OT&E Requirements

DT&E _____

OT&E _____

BOTH ___X___

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Description of Requirements Drivers and Methodology Form

Category: Air Vehicle

Subcategory: none

Requirement Area: All (excluding sea space)

a. System Description:

UAV-MAE: Unmanned Air Vehicle - Medium Altitude Endurance

The Unmanned Air Vehicle - Medium Altitude Endurance system is an long range unmanned air vehicle system to be used for reconnaissance activities.

b. Engagement/Scenario Definition:

The test scenario includes launch operations, aircraft vehicle performance evaluations within restricted airspace to prove the vehicles airworthiness, target sensor evaluations using multiple ground target vehicles, navigation systems accuracy, and air vehicle endurance operations with flight profiles up to 250 NMi.

c. Description of Method Used to Determine Space Requirements:

Review of established system safety fans. Range requirement is driven primarily by the long range endurance operations with the vehicle required to operate for over 12 hours.

d. DT&E or OT&E Requirements

DT&E x

OT&E_____

BOTH_____

DEPARTMENT OF THE ARMY
U.S. ARMY AVIATION TECHNICAL TEST CENTER
FORT RUCKER, ALABAMA 36362-5276

Cairns Army Airfield
Fort Rucker, AL 36362-5276

75 North Flightline Road
Edwards Air Force Base, CA 93524-6100

STEAT-TS-R (70) 19 August 1994

MEMORANDUM FOR Commander, U.S. Army Test and Evaluation Command, ATTN: AMSTE-TA-OP, Aberdeen Proving Ground, MD 21005-5055

SUBJECT: BRAC 95 Data Call #7 - Test and Evaluation Supplemental

1. Reference memorandum, HQ TECOM, AMSTE-TA-O, undated, SAB.

2. ATTC's response to subject data call is enclosed.

3. To further amplify our requirement, we feel we need the following:

a. An area of controlled airspace, 20x50 nautical miles to 10,000 feet AGL (1000 square miles) is needed to facilitate flight testing requiring extended flight with eyes-in-the-cockpit for data acquisition. Ideally, an area of at least 30x20 nautical miles to 10,000 AGL (600 square miles) within the controlled airspace should be restricted airspace.

b. Approved nap-of-the-earth routes for flight testing within the above airspace.

c. An airfield with a runway at least 6000 feet long, within 20 nautical miles (0-10 minutes flight time) of the above airspace.

4. Point of contact is Ms. Eileen West, DSN 558-8056.

Encl

for JOSEPH L. BERGANTZ
COL, AV
Commanding

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TEST AND EVALUATION REQUIREMENTS FORM
(Categories)

USA ATTC

Requirement Areas	Armaments/ Weapons: Air-to-Air	Air-to-Surface	Surface-to-Air	Cruise Missile	Theater Missile Defense: Short Range	Medium Range	Long Range	Air Vehicle	Electronic Combat
1. Required Air Space									
a. Total Square(NM)								1000	
b. Downrange(NM)								50	
c. Crossrange(NM)								20	
d. System/Scenario Driving Requirements								Longbow AH-64D RAH-66 Comanche	
2. Restricted Air Space (to include warning areas)									
a. Total Square(NM)								600	
b. Downrange(NM)								30	
c. Crossrange(NM)								20	
d. System/Scenario Driving Requirements								Longbow AH-64D RAH-66 Comanche	
3. Required Total Land Space (to include warning areas)									
a. Total Square(NM)								1000	
b. Downrange(NM)								50	
c. Crossrange(NM)								20	
d. System/Scenario Driving Requirements								Longbow AH-64D RAH-66 Comanche	
4. Required DoD Land Space (to include warning areas)									
a. Total Square(NM)								600	
b. Downrange(NM)								30	
c. Crossrange								20	
d. System/Scenario Driving Requirements								Longbow AH-64D RAH-66 Comanche HELLFIRE	
5. Required Sea Space (to include warning areas)									
a. Total Square(NM)								NA	
b. Downrange(NM)								NA	
c. Crossrange(NM)								NA	
d. System/Scenario Driving Requirements								NA	
6. Required Straight Line Segment									
a. Total Requirement(NM)								NA	
b. Downrange(NM)								NA	
c. Crossrange								NA	
d. System/Scenario Driving Requirements								NA	

NOTE: The only category that applies to ATTC is Air Vehicles all others not applicable.

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USATTC

Description of Requirements Drivers and Methodology Form

Category: Air Vehicles

Subcategory:

Requirements Area: Required Air Space

a. System Description:

RAH-66 Comanche & associated subsystems.
AH-64D Longbow & associated subsystems.

b. Engagement/Scenario Description:

Performance Handling Qualities
Subsystems Evaluation
Armament System Evaluation

c. Description of Method Used to Determine Space Requirements:

Altitude, airspace, and turning radius needed to assess performance handling qualities of the aircraft and associated systems and subsystems in an environment free from interfering air traffic.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E: X
OT&E: ___
Both: ___

Attachment 2

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USAATTC

Description of Requirements Drivers and Methodology Form

Category: Air Vehicles

Subcategory:

Requirements Area: Restricted Air Space

a. System Description:

RAH-66 Comanche & associated subsystems.
AH-64D Longbow & associated subsystems.

b. Engagement/Scenario Description:

Performance Handling Qualities
Subsystems Evaluation
Armament System Evaluation

c. Description of Method Used to Determine Space Requirements:

Altitude, airspace, and turning radius needed to assess performance handling qualities of the aircraft and associated systems and subsystems in an environment free from interfering air traffic.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E: X
OT&E: ___
Both: ___

Attachment 2

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USAATTC

Description of Requirements Drivers and Methodology Form

Category: Air Vehicles

Subcategory:

Requirements Area: Required Total Land Space

a. System Description:

RAH-66 Comanche & associated subsystems.
AH-64D Longbow & associated subsystems.

b. Engagement/Scenario Description:

Performance Handling Qualities
Subsystems Evaluation
Armament System Evaluation

c. Description of Method Used to Determine Space Requirements:

Altitude, airspace, and turning radius needed to assess performance handling qualities of the aircraft and associated systems and subsystems in an environment free from interfering air traffic.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E: X
OT&E: ___
Both: ___

Attachment 2

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USA ATTC

Description of Requirements Drivers and Methodology Form

Category: Air Vehicles

Subcategory:

Requirements Area: Required DoD Land Space

a. System Description:

RAH-66 Comanche & associated subsystems.
AH-64D Longbow & associated subsystems.
HELLFIRE

b. Engagement/Scenario Description:

Performance Handling Qualities
Subsystems Evaluation
Armament System Evaluation

c. Description of Method Used to Determine Space Requirements:

Altitude, airspace, and turning radius needed to assess performance handling qualities of the aircraft and associated systems and subsystems in an environment free from interfering air traffic.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E: X
OT&E: ___
Both: ___

Attachment 2

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DEPARTMENT OF THE ARMY
U.S. ARMY REDSTONE TECHNICAL TEST CENTER
REDSTONE ARSENAL, ALABAMA 35898-8052

REPLY TO ATTENTION OF

STERT-TE

22 August 1994

MEMORANDUM FOR Commander, U.S. Army Test and Evaluation Command, ATTN: AMSTE-TA, Aberdeen Proving Ground, Md 21005-5055

SUBJECT: BRAC 95 Data Call #7 - Test and Evaluation Supplemental

1. Enclosed is the Redstone Technical Test Center response to the referenced data call. The information contained in this report is accurate and complete to the best of my knowledge and belief.

2. POC for this action is Carl Roberts, STERT-TE, DSN 746-3468.

Jerry B. Farris
for CARL E. ROBERTS
Deputy Director
Redstone Technical Test Center

USARTTC

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TEST AND EVALUATION REQUIREMENTS FORM
(ATTACHMENT 1)

Categories

Requirement Areas	Air-to-Air	Armaments/ Weapons Air-to-Surface	Surface-to-Air	Cruise Missiles	Theater Short Range	Missile Medium Range	Defense Long Range	Air Vehicles	Electronic Combat
1. Required Air Space									
a. Total Square (NM)	N/A	.303	1.2	N/A	N/A	N/A	N/A	N/A	N/A
b. Downrange (NM)	N/A	.74	3.6	N/A	N/A	N/A	N/A	N/A	N/A
c. Crossrange (NM)	N/A	.41	.65	N/A	N/A	N/A	N/A	N/A	N/A
d. System/Scenario Driving Requirement*	N/A	(See Attached)	(See Attached)	N/A	N/A	N/A	N/A	N/A	N/A
2. Restricted Air Space (to include Warning Areas)									
a. Total Square (NM)	N/A	19.9	19.9	N/A	N/A	N/A	N/A	N/A	N/A
b. Downrange (NM)	N/A	5.7	5.7	N/A	N/A	N/A	N/A	N/A	N/A
c. Crossrange (NM)	N/A	3.5	3.5	N/A	N/A	N/A	N/A	N/A	N/A
d. System/Scenario Driving Requirement*	N/A	(See Attached)	(See Attached)	N/A	N/A	N/A	N/A	N/A	N/A
3. Required Total Land Space (to include Warning Area)									
a. Total Square (NM)	N/A	303	1.2	N/A	N/A	N/A	N/A	N/A	N/A
b. Downrange (NM)	N/A	.74	3.6	N/A	N/A	N/A	N/A	N/A	N/A
c. Crossrange (NM)	N/A	.41	.65	N/A	N/A	N/A	N/A	N/A	N/A
d. System/Scenario Driving Requirement*	N/A	(See Attached)	(See Attached)	N/A	N/A	N/A	N/A	N/A	N/A
4. Required DoD Land Space (to include Warning Area)									
a. Total Square (NM)	N/A	.303	1.2	N/A	N/A	N/A	N/A	N/A	N/A
b. Downrange (NM)	N/A	.74	3.6	N/A	N/A	N/A	N/A	N/A	N/A
c. Crossrange (NM)	N/A	.41	.65	N/A	N/A	N/A	N/A	N/A	N/A
d. System/Scenario Driving Requirement*	N/A	(See Attached)	(See Attached)	N/A	N/A	N/A	N/A	N/A	N/A
5. Required Sea Space (to included Warning Area)									
a. Total Square (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
b. Downrange (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
c. Crossrange (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
d. System/Scenario Driving Requirement*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6. Required Straight Line Segment									
a. Total Requirement (NM)	N/A	.74	3.6	N/A	N/A	N/A	N/A	N/A	N/A
b. Separation Corridor Requirement (NM)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
c. System/Scenario Driving Requirement*	N/A	(See Attached)	(See Attached)	N/A	N/A	N/A	N/A	N/A	N/A

* Use as many copies of this attached form as required to provide an explanation of the requirements driver(s) and the method(s) used to determine the numerical values.

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USA RTTC

Description of Requirements Drivers and Methodology Form

Category: Armaments/Weapons

Subcategory: Air-to-Surface

Requirements Required: Required Airspace

a. **System Description:**

AGMS (HELLFIRE Missile Warhead)
Please Note: Primary facility function is test of surface to surface weapons systems and components.

b. **Engagement/Scenario Description:**

Warhead test involving use of a sled vehicle traveling down a 2000 foot sled track at missile velocities delivering AGMS warhead to a defined target to assess warhead performance.

c. **Description of Method Used to Determine Space Requirements:**

Memorandum for Chief, MICOM Safety Office, dated 5 January 1994, specifies maximum fragmentation distance at 1250 feet for warhead. Safety fan is therefore 4500 feet (.74 Nm) by 2500 feet (41 Nm) with an area of .303 Nm. This area is extended vertically to define airspace required.

d. **DT&E or OT&E Requirements (check whichever applies):**

DT&E: X

OT&E: _____

Both: _____

Attachment 2

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USATTC

Description of Requirements Drivers and Methodology Form

Category: Armaments/Weapons

Subcategory: Air-to-Surface

Requirements Required: Restricted Airspace

a. **System Description:**

AGMS (HELLFIRE Missile Warhead)
Please Note: Primary facility function is test of surface to surface weapons systems and components.

b. **Engagement/Scenario Description:**

Warhead test involving use of a sled vehicle traveling down a 2000 foot sled track at missile velocities delivering AGMS warhead to a defined target to assess warhead performance

c. **Description of Method Used to Determine Space Requirements:**

Testing requires activation of R2104A restricted airspace. This airspace is irregularly shaped, has approximate dimensions of 35,000 feet (5.7 Nm) by 21,000 feet (3.5 Nm) with area of 19.9 Nm.

d. **DT&E or OT&E Requirements (check whichever applies):**

DT&E: X

OT&E: ____

Both: ____

Attachment 2

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USARTTC

Description of Requirements Drivers and Methodology Form

Category: Armaments/Weapons

Subcategory: Air-to-Surface

Requirements Required: Required Total Land Space/Required DoD Land Space

a. **System Description:**

AGMS (HELLFIRE Missile Warhead)
Please Note: Primary facility function is test of surface to surface weapons systems and components.

b. **Engagement/Scenario Description:**

Warhead test involving use of a sled vehicle traveling down a 2000 foot sled track at missile velocities delivering AGMS warhead to a defined target to assess warhead performance.

c. **Description of Method Used to Determine Space Requirements:**

Memorandum from Chief, MICOM Safety Office, dated 5 January 1994, specifies maximum fragmentation distance at 1250 feet for warhead. Safety fan is therefore 4500 feet (.74 Nm) by 2500 feet (.41 Nm) with an area of .30 Nm.

d. **DT&E or OT&E Requirements (check whichever applies):**

DT&E: X

OT&E: ____

Both: ____

Attachment 2

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Description of Requirements Drivers and Methodology Form

USARTTC

Category: Armaments/Weapons

Subcategory: Air-to-Surface

Requirements Required: Required Straight Line Segment

a. **System Description:**

AGMS (HELLFIRE Missile Warhead)
Please Note: Primary facility function is test of surface to surface weapons systems and components.

b. **Engagement/Scenario Description:**

Warhead test involving use of a sled vehicle traveling down a 2000 foot sled track at missile velocities delivering AGMS warhead to a defined target to assess warhead performance.

c. **Description of Method Used to Determine Space Requirements:**

Memorandum for Chief, MICOM Safety Office, dated 5 January 1994, specifies maximum fragmentation distance at 1250 feet for warhead. Straight line segments are therefore 2000 feet + 1250 feet + 1250 feet = 4500 feet (.74 Nm).

d. **DT&E or OT&E Requirements (check whichever applies):**

DT&E: X

OT&E: _____

Both: _____

Attachment 2

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Description of Requirements Drivers and Methodology Form

USA RTTC

Category: Armaments/Weapons

Subcategory: Surface-to-Air

Requirements Required: Required Airspace

a. **System Description:**

AVENGER M3P Machine Gun.
Please Note: Primary facility function is test of surface to surface weapons systems and components.

b. **Engagement/Scenario Description:**

Machine gun on the AVENGER is tested for reliability by firing large numbers of rounds into a bermed area or back stop.

c. **Description of Method Used to Determine Space Requirements:**

SOP STERT-TE-F-FL-385-14, dated May 1992, states that open air maximum range is 6655 meters. Elevation limits and azimuth limits (+ or - 5 degrees) result in a worse case safety fan approximately 6655 m (3.6 Nm) by 1200 m (65 Nm) extending upward to 10,000 feet (area 1.2 Nm).

d. **DT&E or OT&E Requirements (check whichever applies):**

DT&E: X

OT&E: _____

Both: _____

Attachment 2

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Description of Requirements Drivers and Methodology Form

USARTTC

Category: Armaments/Weapons

Subcategory: Surface-to-Air

Requirements Required: Restricted Airspace

a. **System Description:**

AVENGER M3P Machine Gun.
Please Note: Primary facility function is test of surface to surface weapons systems and components.

b. **Engagement/Scenario Description:**

Machine gun on the AVENGER is tested for reliability by firing large numbers of rounds into a bermed area or back stop.

c. **Description of Method Used to Determine Space Requirements:**

Testing requires activation of R2104A restricted airspace. This airspace is irregularly shaped having approximate dimensions of 35,000 feet (5.7 Nm) by 21,000 feet (3.5 Nm) with area of 19.9 Nm.

d. **DT&E or OT&E Requirements (check whichever applies):**

DT&E: X

OT&E: ____

Both: ____

Attachment 2

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Description of Requirements Drivers and Methodology Form

USARTTC

Category: Armaments/Weapons

Subcategory: Surface-to-Air

Requirements Required: Required Total Land Space/Required DoD Land Space

a. **System Description:**

AVENGER M3P Machine Gun.
Please Note: Primary facility function is test of surface to surface weapons systems and components.

b. **Engagement/Scenario Description:**

Machine gun on the AVENGER is tested for reliability by firing large numbers of rounds into a bermed area or back stop.

c. **Description of Method Used to Determine Space Requirements:**

SOP STERT-TE-F-FL-385-14, dated May 1992, states that open air maximum range is 6655 meters. Elevation limits and azimuth limits (+ or - 5 degrees) result in a worse case safety fan approximate 6655 m (3.6 Nm) by 1200 m (.65 Nm) with area 1.2 Nm

d. **DT&E or OT&E Requirements (check whichever applies):**

DT&E: X

OT&E: _____

Both: _____

Attachment 2

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Description of Requirements Drivers and Methodology Form

USARTTC

Category: Armaments/Weapons

Subcategory: Surface-to-Air

Requirements Required: Required Straight Line Segment

a **System Description:**

AVENGER M3P Machine Gun.
Please Note: Primary facility function is test of surface to surface weapons systems and components.

b. **Engagement/Scenario Description:**

Machine gun on the AVENGER is tested for reliability by firing large numbers of rounds into a bermed area or back stop.

c. **Description of Method Used to Determine Space Requirements:**

SOP STERT-TE-F-FL-385-14, dated May 1992, states that open air maximum range is 6655 meters. This defines the maximum straight line segment 6655 m (3.6 Nm).

d. **DT&E or OT&E Requirements (check whichever applies):**

DT&E: X

OT&E: ____

Both: ____

Attachment 2

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DEPARTMENT OF THE ARMY

UNITED STATES ARMY YUMA PROVING GROUND
YUMA, ARIZONA 85365

REPLY TO ATTENTION OF
STEYP-MT-EA (70-10r)

MEMORANDUM FOR Commander, U.S. Army Test and Evaluation Command, ATTN: AMSTE-TA, Aberdeen Proving Ground, MD 21005-5055

SUBJECT: BRAC 95 Data Call #7 - Test and Evaluation, Supplemental

1. Enclosed is the Yuma Proving Ground response to the referenced data call. The information contained in this report is accurate and complete to the best of my knowledge and belief.

2. POC for this action is Scott Dellicker, STEYP-MT-EA, DSN 899-6102.

Charles Walk LTC, AD
for RICHARD R. WALKER
Colonel, Aviation
Commanding

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USA YPG

Requirement Areas	Categories								
	Armament/Weapons (Air)			Cruise Missiles	Theater Missile Defense			Air Vehicles	Electronic Combat
	Air-Air	Air-Surface	Surface-Air		Short Range	Med Range	Long Range		
1. Required Air Space									
a. Total Square NMi	504	504	N/A	N/A	N/A	N/A	N/A	3750	N/A
b. Downrange (NMi)	42	42	N/A	N/A	N/A	N/A	N/A	250	N/A
c. Crossrange (NMi)	12	12	N/A	N/A	N/A	N/A	N/A	15	N/A
d. System/Scenario Driving Reqmt	ATAS	R/W-FC	N/A	N/A	N/A	N/A	N/A	UAV-MAE	N/A
2. Restricted Air Space									
a. Total Square NMi	504	504	N/A	N/A	N/A	N/A	N/A	1806	N/A
b. Downrange (NMi)	45	42	N/A	N/A	N/A	N/A	N/A	42	N/A
c. Crossrange (NMi)	12	12	N/A	N/A	N/A	N/A	N/A	43	N/A
d. System/Scenario Driving Reqmt	ATAS	R/W-FC	N/A	N/A	N/A	N/A	N/A	UAV-MAE	N/A
3. Required Total Land Space									
a. Total Square NMi	504	504	N/A	N/A	N/A	N/A	N/A	1806	N/A
b. Downrange (NMi)	45	42	N/A	N/A	N/A	N/A	N/A	42	N/A
c. Crossrange (NMi)	12	12	N/A	N/A	N/A	N/A	N/A	43	N/A
d. System/Scenario Driving Reqmt	ATAS	R/W-FC	N/A	N/A	N/A	N/A	N/A	UAV-MAE	N/A
4. Required DoD Land Space									
a. Total Square NMi	504	504	N/A	N/A	N/A	N/A	N/A	630	N/A
b. Downrange (NMi)	45	42	N/A	N/A	N/A	N/A	N/A	42	N/A
c. Crossrange (NMi)	12	12	N/A	N/A	N/A	N/A	N/A	15	N/A
d. System/Scenario Driving Reqmt	ATAS	R/W-FC	N/A	N/A	N/A	N/A	N/A	UAV-MAE	N/A
5. Required Sea Space									
a. Total Square NMi	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
b. Downrange (NMi)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
c. Crossrange (NMi)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
d. System/Scenario Driving Reqmt	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6. Required Straight Line Segment									
a. Total Requirement (NMi)	42	42	N/A	N/A	N/A	N/A	N/A	42	N/A
b. Supersonic Corridor (NMi)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
c. System/Scenario Driving Reqmt	ATAS	R/W-FC	N/A	N/A	N/A	N/A	N/A	UAV-MAE	N/A

ATAS = Air-Air Stinger R/W-FC = Rotary Wing - Fire Control UAV-MAE = Unmanned Air Vehicle Medium Altitude Endurance

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USATPG

Description of Requirements Drivers and Methodology Form

Category: Armament/Weapons

Subcategory: Air-to-Air

Requirement Area: All (excluding sea space)

a. System Description.

ATAS: Air-to-Air Stinger

Testing of the Air-to-Air Stinger missile system including air drop certification, weapons integration, and system modifications.

b. Engagement/Scenario Definition:

Firing of missile on fixed and aerial targets with firing aircraft velocities from hover to 100NMI/Hour.

c. Description of Method Used to Determine Space Requirements:

Review of established missile and designation laser safety fans. Range requirement is driven primarily by the laser operations necessitating protection up to 80 kilometers.

d. DT&E or OT&E Requirements

DT&E_x_

OT&E_____

BOTH_____

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USA YPG

Description of Requirements Drivers and Methodology Form

Category: Armament/Weapons

Subcategory: Air-to-Surface

Requirement Area: All (excluding sea space)

a. System Description:

R/W - FC: Rotary Wing - Fire Control

Testing of advanced air to ground munitions such as the Longbow Hellfire missile system, weapons integration, and fire control acquisition systems.

b Engagement/Scenario Definition:

Performance evaluations of the Longbow Fire Control Radar and Missile System including interoperability testing. Maximum requirements are driven from targeting scenarios of multiple (up to 25) and aerial (up to 15) target vehicles simultaneously. Multiple lines of fire for Hellfire/gun engagements are included. Test area must include multiple target aspect radials against target arrays.

c. Description of Method Used to Determine Space Requirements:

Review of established missile, fire control radar, and laser safety footprints. System scenario defined by existing Longbow test plans and system capabilities. Range requirement is driven primarily by the laser operations necessitating protection up to 80 kilometers. With proper terrain backgrounds, range requirement could be reduced to 22 kilometers if terrain termination of laser energy can be ensured.

d. DT&E or OT&E Requirements

DT&E _____

OT&E _____

BOTH ___X___

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USA YP G

Description of Requirements Drivers and Methodology Form

Category: Air Vehicle

Subcategory: none

Requirement Area: All (excluding sea space)

a. System Description:

UAV-MAE: Unmanned Air Vehicle - Medium Altitude Endurance

The Unmanned Air Vehicle - Medium Altitude Endurance system is an long range unmanned air vehicle system to be used for reconnaissance activities.

b. Engagement/Scenario Definition:

The test scenario includes launch operations, aircraft vehicle performance evaluations within restricted airspace to prove the vehicles airworthiness, target sensor evaluations using multiple ground target vehicles, navigation systems accuracy, and air vehicle endurance operations with flight profiles up to 250 NMi.

c. Description of Method Used to Determine Space Requirements:

Review of established system safety fans. Range requirement is driven primarily by the long range endurance operations with the vehicle required to operate for over 12 hours.

d. DT&E or OT&E Requirements

DT&E x

OT&E_____

BOTH_____

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WHITE SANDS MISSILE RANGE
BRAC Data Call Number 7 -- Test and Evaluation Supplement
(White Sands Missile Range Geographic Management Area)

22 August 1994

CERTIFICATION STATEMENT

This report comprises the WSMR Geographic Management Area input to the WSMR BRAC 95 Data Call Number 7 -- Test and Evaluation Supplement. The input for the Electronic Proving Ground/Ft. Huachuca Geographic Management Area was separately prepared, certified, and submitted. In the preparation of this report tenant and DoD RDTE and OT&E programs were not examined or reviewed. Instead, a directorate level review was performed to determine which specific programs were "drivers" for establishing land and air space requirements for WSMR operations and these were then analyzed to prepare the data submitted as Attachment 1.

US Navy data was provided on the STANDARD Block 4 Missile System RDTE/OT&E program, as it provides the major land/air space "driver" for WSMR ground-air missile system testing. No data was provided for this report by the US Air Force. Information related to USAF RDTE/OT&E requirements for air and land space at White Sands Missile Range should be obtained directly from the USAF.

Data on the PATRIOT missile system is in development and a supplemental submission covering the medium range theater missile land/air requirements will be submitted no later than 24 August 1994.

Within the constraints identified above, the information contained in this report is accurate and complete to the best of my knowledge and belief.

GEORGE A. ORLICKI
Technical Director / Chief Scientist

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WHITE SANDS MISSILE RANGE
BRAC Data Call Number 7 -- Test and Evaluation Supplement
(White Sands Missile Range Geographic Management Area)

23 August 1994

CERTIFICATION STATEMENT

This report provides a significant update to the 19/22 August inputs to the WSMR Geographic Management Area BRAC 95 Data Call Number 7 -- Test and Evaluation Supplement.

The PATRIOT - ERINT/STORM programs are now included in the medium range theater missile defense entries, and the US Air Force 46th Test Group has provided inputs on their requirements for use of WSMR land/air space. These have been incorporated in the air vehicle, air-to-air, and air-to-surface entries on Attachment 1.

In the preparation of this report all tenant and DoD RDTE and OT&E programs were not examined or reviewed for inclusion in the data base. Instead, a directorate level review was performed to determine which specific programs were "drivers" for establishing land and air space requirements for WSMR operations. These were then analyzed to prepare the data submitted as Attachment 1.

Within the constraints identified above, the information contained in the attached report at this time is accurate and complete to the best of my knowledge and belief.

GEORGE A. ORLICKI
Technical Director / Chief Scientist

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TEST AND EVALUATION REQUIREMENTS FORM

(ATTACHMENT 1)

WHITE SANDS MISSILE RANGE GEOGRAPHIC MANAGEMENT AREA

Requirements Areas	Categories: Armaments/Weapons: air-to-air	Armaments/Weapons: air-to-surface	Armaments/Weapons: Surface-to-air	Cruise missiles	Theater Missile Defense: short range	Theater Missile Defense: medium range	Theater Missile Defense: long range	air vehicles	Electronic combat
1. Required Air Space									
a. Total Square (NM)	2045.1	7000.0	11358.0	(not submitted, no program as a driver)	(not submitted, no program as a driver)	4223.3	5990.8		(not sub.)
b. Downrange (NM)	69.1	100.0	240.0			121.6	138.9		
c. Crossrange (NM)	29.6	70.0	50.0			52.6	48.6		
d. System/Scenario Driving Requirement	UDS 36208A (TAB A)	AGM-142/B-52 (TAB F)	UDS 81398A (TAB C)			UDS 08904 UDS 01202 (TAB H)	Straight Line Engagement (TAB D)		
2. Restricted Air Space									
a. Total Square (NM)	2045.1	4900.0	5188.0			4223.3	5990.8		
b. Downrange (NM)	69.1	70.0	121.0			121.6	138.9		
c. Crossrange (NM0)	29.6	70.0	45.0			52.6	48.6		
d. System/Scenario Driving Requirement	UDS 36208A (TAB A)	AGM-142/B-62 (TAB F)	UDS 81398A (TAB C)			UDS 08904 UDS 01202 (TAB H)	Straight Line Engagement (TAB D)		
3. Required Total Land Space									
a. Total Square (NM)	1138.0	4900.0	5083.0			4223.3	4502.3		
b. Downrange (NM)	70.0	70.0	121.0			121.6	138.9		
c. Crossrange (NM)	30.0	70.0	45.0			52.6	28.1		
d. System/Scenario Driving Requirement	AIM-120 (TAB E)	AGM-142/B-52 (TAB F)	UDS 81398A (TAB C)			UDS 08904 UDS 01202 (TAB H)	Straight Line Engagement (TAB D)		
4. Required DOD Land Space									
a. Total Square (NM)	1138.0	4900.0	3142.0			3016.6	4219.3		
b. Downrange (NM)	70.0	70.0	88.0			86.8	104.2		
c. Crossrange (NM)	30.0	70.0	37.0			34.7	34.7		
d. System/Scenario Driving Requirement	AIM-120 (TAB E)	AGM-142/B-52 (TAB F)	UDS81398A (TAB C)			UDS 08904 UDS 01202 (TAB H)	Straight Line Engagement (TAB D)		
5. Required Sea Space	N/A	N/A	N/A			N/A	N/A		
6. Required Straight Line Segment									
a. Total Requirement (NM)	60.0	100.0	249.8			78.2	(See TAB D)	550.0	
b. Supersonic Corridor Requirement (NM)	N/A	N/A	215.8			N/A	N/A	N/A	
c. System/Scenario Driving Requirement	UDS 36208A (TAB A)	AGM-142/B-52 (TAB F) (Also TAB B)	UDS 81398A (TAB C)			UDS 08904 UDS 01202 (TAB H)		INS Test (TAB G)	

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TEST AND EVALUATION REQUIREMENTS FORM

(ATTACHMENT 1)

WHITE SANDS MISSILE RANGE GEOGRAPHIC MANAGEMENT AREA

Requirements Areas	Categories: Armaments/Weapons: air-to-air	air-to-surface	Surface-to-air	Cruise missiles	Theater Missile Defense: short range	medium range	long range	air vechicles	Electronic combat
1. Required Air Space				(not submitted)	(not submitted)	(PATRIOT [illegible] be submitted on Monday)		(not submitted) (awaiting USAF determination on data submission for tests peformed at WSMR)	(not sub.)
a. Total Square (NM)	2045.1	4165.9	1358.0				5990.8		
b. Downrange (NM)	69.1	115.1	240.0				138.9		
c. Crossrange (NM)	29.6	36.2	50.0				48.6		
d. System/Scenario Driving Requirement	UDS 36208A	UDS 35307	UDS 81398A				Straight Line Engagement		
2. Restricted Air Space									
a. Total Square (NM)	2045.1	4165.9	5188.0				5990.8		
b. Downrange (NM)	69.1	115.1	121.0				138.9		
c. Crossrange (NMR)	29.6	36.2	45.0				48.6		
d. System/Scenario Driving Requirement	UDS 36208A	UDS 35307	UDS 81398A				Straight Line Engagement		
3. Required Total Land Space									
a. Total Square (NM)	1656.5	1874.7	5303.0				4302.3		
b. Downrange (NM)	62.2	65.9	121.0				138.9		
c. Crossrange (NM)	26.6	28.4	45.0				28.1		
d. System/Scenario Driving Requirement	UDS 36208A	UDS 35307	UDS 81398A				Straight Line Engagement		
4. Required DOD Land Space									
a. Total Square (NM)	1656.5	1874.7	3142.0				4219.3		
b. Downrange (NM)	62.2	65.9	88.0				104.2		
c. Crossrange (NM)	26.6	28.4	37.0				34.7		
d. System/Scenario Driving Requirement	UDS 36208A	UDS 35307	UDS81398A				Straight Line Engagement		
5. Required Sea Space	N/A	N/A	N/A				N/A		
6. Required Straight Line Segment									
a. Total Requirement (NM)	60.0	30.0	240.0				(See TAB D)		
b. Supersonic Corridor Requirement (NM)	N/A	N/A	215.0						
c. System/Scenario Driving Requirement	UDS 36208A	UDS 35307	UDS 81398A						
	(See TAB A)	(See TAB B)	(See TAB C)				(See TAB D)		

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WJMR

Description of Requirements Drivers and Methodology Form

Category: Armaments/Weapons

Subcategory: Air-to-Air

Requirement areas: Air Space, Restricted Air Space, Total Land Space, DOD Land Space, Sea Space, and Straight Line Segment

a. System Description: Universal Documentation System (UDS): 362 and 370 - Advanced Medium Range Air-to-Air Missile (AMRAAM), 359 - BRIGHT EYES, 364 - HAVE DASH, 380 - ASRAAM, 561 - AIM 9, 425 - ILLUMINATOR II
The programs above all utilize resources described in the requirement areas, and AMRAAM is the program that uses the maximum safety footprint and fight envelope. The AMRAAM is an all-weather, radar-guided, air-to-air missile. It will be employed on the f-14, f-15, f16, f/a-18 and follow-on fighter aircraft against air vehicles operating from very low to high altitudes in a variety of weather and electronic combat conditions. It has the capability of engaging multiple targets (QF-106 w/ECM, MQM-107) with multiple missiles simultaneously. Descriptions of the other programs listed above are furnished in the UDS program descriptions document.

b. Engagement/ Scenario Description:

Requirement Area	Sq. NM	Down Range (NM)	Cross Range (NM)
AMRAAM*			
Air Space	2045.1	69.1	29.6
Restricted Air Space	2045.1	69.1	29.6
Total Land Space	1656.5	62.2	26.6
DOD Land Space	1656.5	62.2	26.6
Straight Line Engagement	N/A	60	N/A
* UDS 36208A was used for this scenario.			
The altitude engagement can take place between .5-30FT AGL.			
Possible Targets: QF106 & MQM107			

Safety Footprint and Flight Envelopes:
Refer to enclosure 1.
NOTE: If captive flights are conducted, this can double the parameter in the table above.

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TAB A-1

WSMR

Description of Requirements Drivers and Methodology Form

c. Description of Method Used to Determine Space Requirement:

Conducting tests in a safe manner is a part of the WSMR mission. Since weapon testing carries inherent dangers, every precaution must be taken to minimize risks. All lethal test debris from test events must impact within WSMR-controlled land and airspace. Air space requirements must be planned so that normal flight and impact dispersion areas do not endanger on-range sensitive areas of the Range boundaries. WSMR evaluates the program requirements and processes and approves operational requirements. Refer to encl 1 for scenario description.

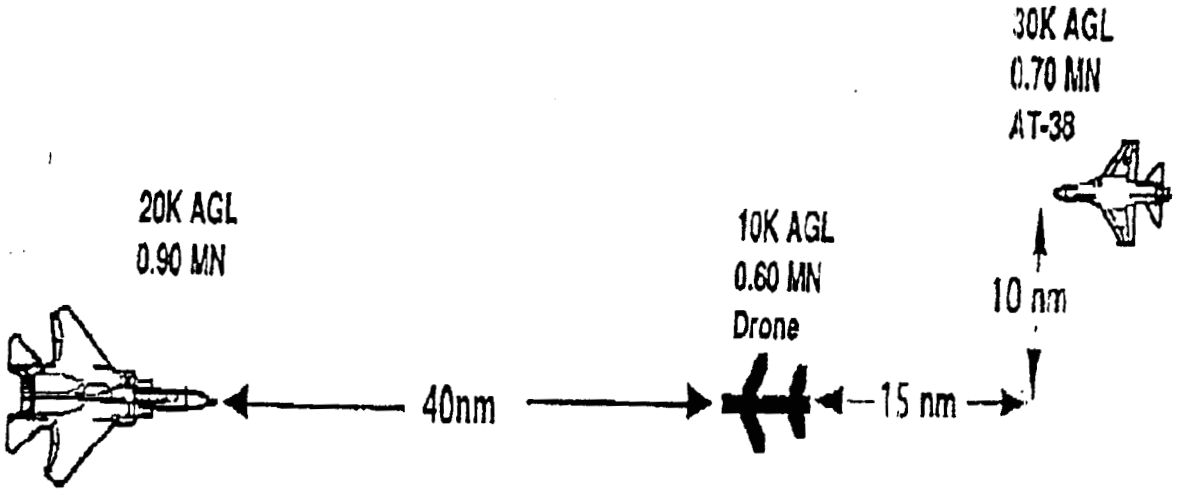
d. DT&E or OT&E Requirements (check whichever applies):

DT&E _____
OT&E _____
Both __x__

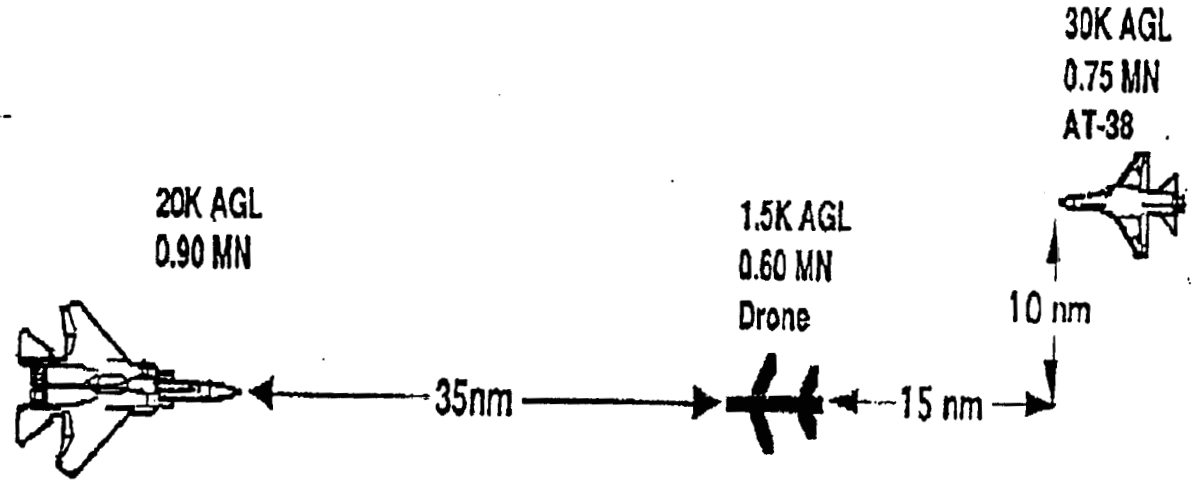
TAB A-2

WSMR

PROGRAM TITLE: AMRAAMFlight Test



GPS 1



GPS 2

TAB - A3

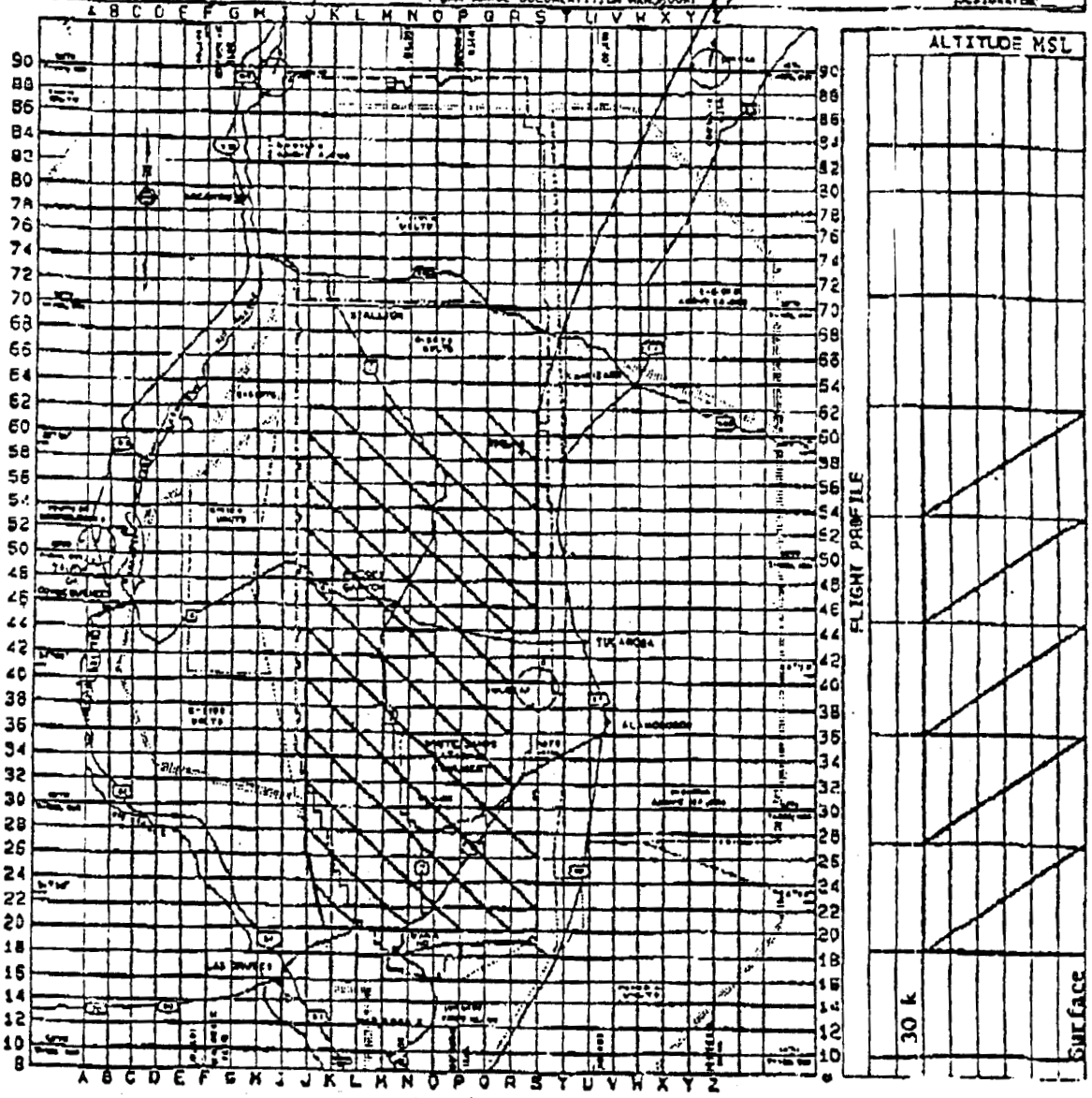
PROGRAM TITLE: AMRAAM FOT&E 2
GD [illegible]

300,000 WSMR 560,000

AIRSPACE OPERATIONS REQUIREMENTS

(WSMR RANGE DOCUMENTATION HANDBOOK)

DATE
PROGRAM
MAP NO. 3
TEST:
DESIGNATOR:



MISSION PROFILE

	VEHICLE 1	VEHICLE 2	VEHICLE 3	VEHICLE 4
SPEED				
CLIMB RATE				
TURN RATE				
BEARING				
CRITICAL POINTS				
TIME ON STATION				
CHANGE A/C REQ.				
MEASUREMENT REQ.				

REMARKS

Airspace: J-5, 20-82
Surface to 30 k ft MSL
except stay west of R
30-44.

TAB A-4

WSMR

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Description of Requirements Drivers and Methodology Form

Category: Armaments/Weapons

Subcategory: Air-to-Surface

Requirement areas: Air Space, Restricted Air Space, Total Land Space, DOD Land Space, Sea Space, and Straight Line Segment

a System Description: Universal Documentation System (UDS): 353 - HAVE NAP, 881 - Standoff Land Attack Missile (SLAM), 965 - Precision Guided Missile (PGM), 489 - TAC Training Program.

The programs above all utilize resources described in the requirement areas, and HAVE NAP is the program that has been identified as the one requiring the maximum safety footprint and fight envelope. HAVE NAP is an Israeli-developed air-to-ground missile system for use by USAF. Captive and live firing tests will be conducted from a B-52 aircraft. The system consists of a 3,000 lb TV guided missile and and aircraft communications pod to transmit and receive data from the missile while in free-flight. Range support willl consist of radar, telemetry, optecs, revovery and data reductions. The missile carries a flight termination system. Descriptions of the other programs listed above are furnished in the UDS program descriptions document.

b. Engagement/ Scenario Description:

Requirement Area	Sq. NM	Down Range (NM)	Cross Range (NM)
HAVE NAP			
Air Space	4165.9	115.1	36.2
Restricted Air Space	4165.9	115.1	36.2
Total Land Space	1874.7	65.9	28.4
DOD Land Space	1874.7	65.9	28.4
Straight Line Engagement	N/A	30.0	N/A
* UDS 35307 was used for this scenario.			
The drop can take place at 3200FT AGL.			
Possible Targets: Concrete slaps			

Safety Footprint and Flight Envelopes:
Refer to enclosure 1.
NOTE: If captive flights are conducted, this can increase the parameter in the table above. TAB B-1

WSMR

FOR OFFICIAL USE ONLY

Description of Requirements Drivers and Methodology Form

c. Description of Method Used to Determine Space Requirement:

Conducting tests in a safe manner is a part of the WSMR mission. Since weapon testing carries inherent dangers, every precaution must be taken to minimize risks. All lethal test debris from test events must impact within WSMR-controlled land and airspace. Air space requirements must be planned so that normal flight and impact dispersion areas do not endanger on-range sensitive areas of the Range boundaries. WSMR evaluates the program requirements and processes and approves operational requirements. Refer to encl 1 for scenario description.

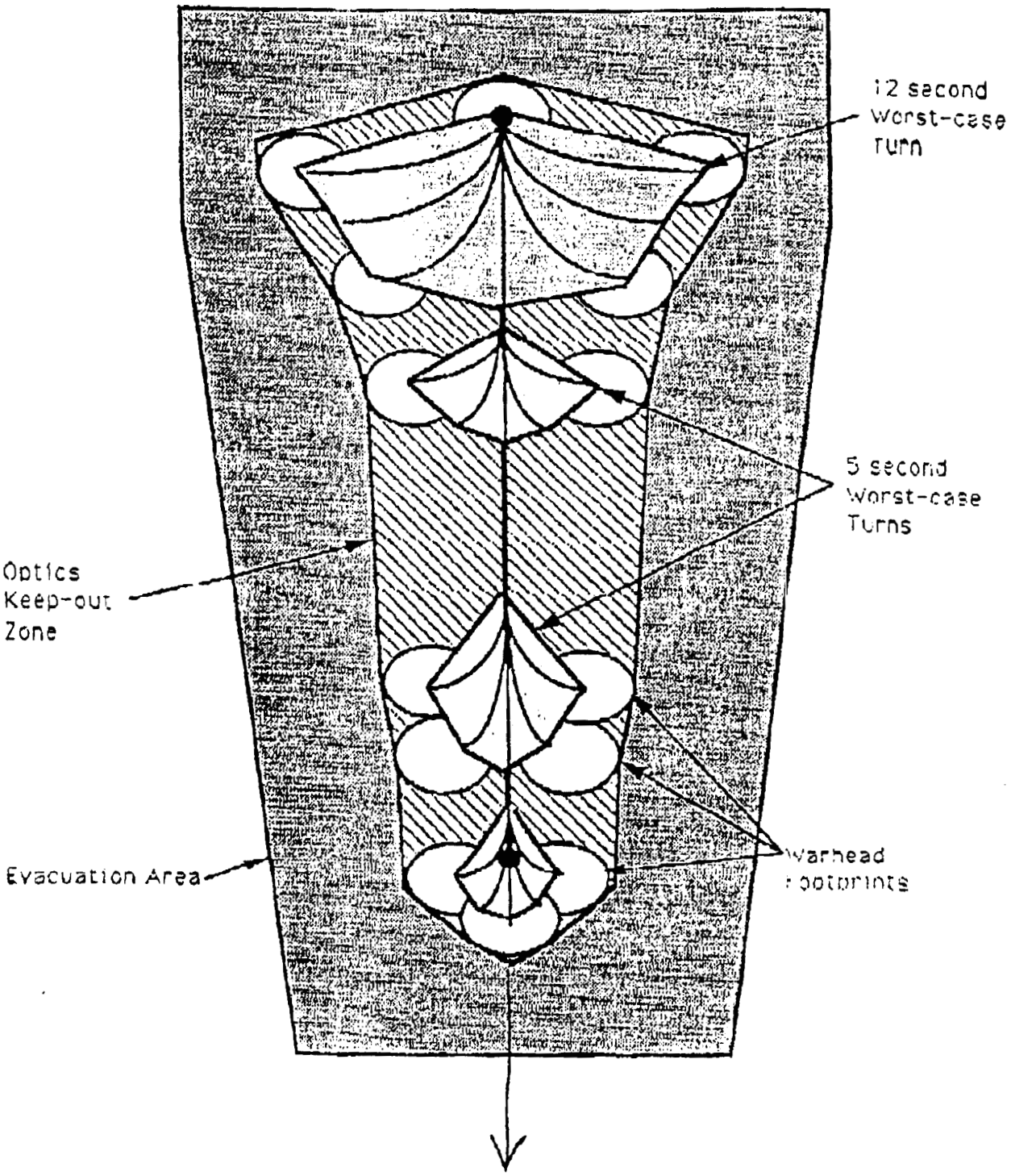
d. DT&E or OT&E Requirements (check whichever applies):

DT&E _____
OT&E _____
Both __x__

TAB B-2

WSMR

HAVE NAP FOOTPRINT & EVACUATION AREA



TAB 8-3 7

T-0 seconds — Announce missile separation (KICK-OFF) on safety net (NR-CE).

B. Test Limits - 1700

1. Heading at launch: 345°T.

2. Altitude at launch: 7,200 ft. MSL.

3. Velocity at launch: 380 Knots.

4. Position at launch: X = 506,122 Y = 455,936 (WSTM).

5. Target position: X = 458,364 Y = 632,093 (WSTM).

C. Operating Limits - 2000

1. Missile flight will be terminated by the MFTSM if tracking data on a missile is lost; if a missile endangers a sensitive area or WSMR range boundary; or under any circumstances where, in the judgment of the MFTSM, continuation of the flight would create a hazardous situation.

2. All data sources and plotting displays must be functional, and destruct system verified flightworthy, before a launch will be allowed.

V RANGE DERIVED REQUIREMENTS 2099

A. Roadblocks and Evacuations -

1. Roadblocks will be set as follows:

a. Public highways - N/A.

b. Special roadblock instructions - N/A.

c. NR-CR will establish internal roadblocks as required to ensure the integrity of the evacuation area.

2. Evacuate the following:

a. Evacuate all non-mission essential personnel from an area bounded by the following WSTM coordinate lines:

(1) X = 530,000 Y = 430,000

(2) X = 530,000 Y = 480,000

(3) X = 480,000 Y = 650,000

(4) X = 430,000 Y = 650,000

(5) X = 430,000 Y = 540,000

(6) X = 490,000 Y = 430,000

b. Evacuation area is shown on Attachment 1.

c. The following manned optics sites are exceptions to the evacuation area:

T-470	RUSS	T-492	WEAP
T-553	COWAN	T 610	FRAN
T-659	NW70	T-660	NE70
T-662	SE70	T-722	STRONG
T-751	GILL	T-755	MINNOW
T-801	VICK	T-860	WOOD
T-875	SW50	T-876	NW50
T-877	NE50	T-~~844~~ 884	TELLES
T-918	SALINAS		

d. Recovery standby point is ZURF Site.

e. Project personnel located at Millers Watch are exempt from the evacuation.

B. Tracking Sites -

1. One radar assigned to transponder track the launch aircraft.

2. A minimum of two radars to provide positive transponder track of the missile from launch to impact. (Radars assigned to the missile must not be co-located).

3. One radar to skin track the missile from launch to impact.

C. Communications - OCDF, Bldg 300 (voice communications)

1. Main floor of the OCDF -

a. MFS nets R0060 and R0061.

b. Isolation net with Range Control .

c. Monitor of Command Isolation net.

d. Monitor of shooter/missile project UHF net.

2. Project room in the OCDF -

a. MFS nets R0060.

b. Monitor of Command Isolation net

c. Monitor of shooter/missile project UHF net.

WS MR

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Description of Requirements Drivers and Methodology Form

Category: Armaments/Weapons

Subcategory: Surface-to-Air

Requirement areas: Air Space, Restricted Air Space, Total Land Space, DOD Land Space, Sea Space, and Straight Line Segment

a. System Description: Universal Documentation System (UDS). 813 - Standard Missile (SM-2), 012 - Extended Range Intercept Technology (ERINT), 089 - PATRIOT, 144 - STINGER, 301 - HAWK HIP, 084 - CHAPARRAL.

The programs above all utilize resources described in the requirement areas, and the Standard Missile is the program that has been identified as the one requiring the maximum safety footprint and fight envelope. The purpose of this program is to test ship-to-air defense missiles in the Standard Missile series. The Standard Missile is a sold fuel missile with and infrared and/or a semi-active radar guidance system and a blast/fragmentation high explosive warhead. A solid fuel booster can be added for extended range. Range Area: From LC-35 uprange as far as Northern Range Extension. Major Support: Radar, RTDS, optics, telemetry, communications, drone control, and data reduction. The missile carries a flight termination system. Descriptions of the other programs listed above are furnished in the UDS program descriptions document.

b. Engagement/ Scenario Description:

Requirement Area	Sq. NM	Down Range (NM)	Cross Range (NM)
STANDARD MISSILE			
Air Space	NAVY submitted parameters		
Restricted Air Space			
Total Land Space			
DOD Land Space			
Straight Line Engagement			
* UDS 81398A was used for this scenario.			
The altitude engagement can take place between,			
(see NAVY input).			
Possible Targets; AQM-37C			

Safety Footprint and Flight Envelopes:
Refer to enclosure 1.

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TAB C-1

WSMR

NOTE: If captive flights are conducted, this can increase the parameter in the table above

Description of Requirements Drivers and Methodology Form

c. Description of Method Used to Determine Space Requirement:

Conducting tests in a safe manner is a part of the WSMR mission. Since weapon testing carries inherent dangers, every precaution must be taken to minimize risks. All lethal test debris from test events must impact within WSMR-controlled land and airspace. Air space requirements must be planned so that normal flight and impact dispersion areas do not endanger on-range sensitive areas of the Range boundaries. WSMR evaluates the program requirements and processes and approves operational requirements. Refer to encl 1 for scenario description.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E _____
OT&E _____
Both __x__

2098 - FLIGHT SAFETY OPERATIONAL CONCEPTS (CONTINUED)

2. AQM-37C

Verification of the AQM-37C F S will be in accordance with preflight checkout procedures approved by NR-CE.

C. Roadblocks

1. Highway 380 will be blocked at Gold and Silver at T-1 hour and 20 minutes.

2. Brass and Barney roadblocks will be set at T-1 hour.

3. Highway 70 will be blocked at Red and Yellow at T-55 minutes.

4. The road at Copper roadblock will be barricaded and the area vacated at T-35 minutes.

5. NR-CR will establish internal roadblocks as required to ensure the integrity of the evacuation area. Internal roadblocks will be set at T-3 hours and 30 minutes.

D. Evacuations. See map on next page.

1. On-Range

a. All non-mission essential personnel will be evacuated from the area bounded by the following (WSIM) coordinates:

X	Y
550,000	160,000
550,000	420,000
East Range Boundary	420,000
East Range Boundary	North Range Boundary
West Range Boundary	North Range Boundary
West Range Boundary	190,000
460,000	190,000
480,000	160,000

b. LC-38, Rhodes Canyon, RAMS, RATSCAT, Salinas Peak and White Sands National Monument will be evacuated.

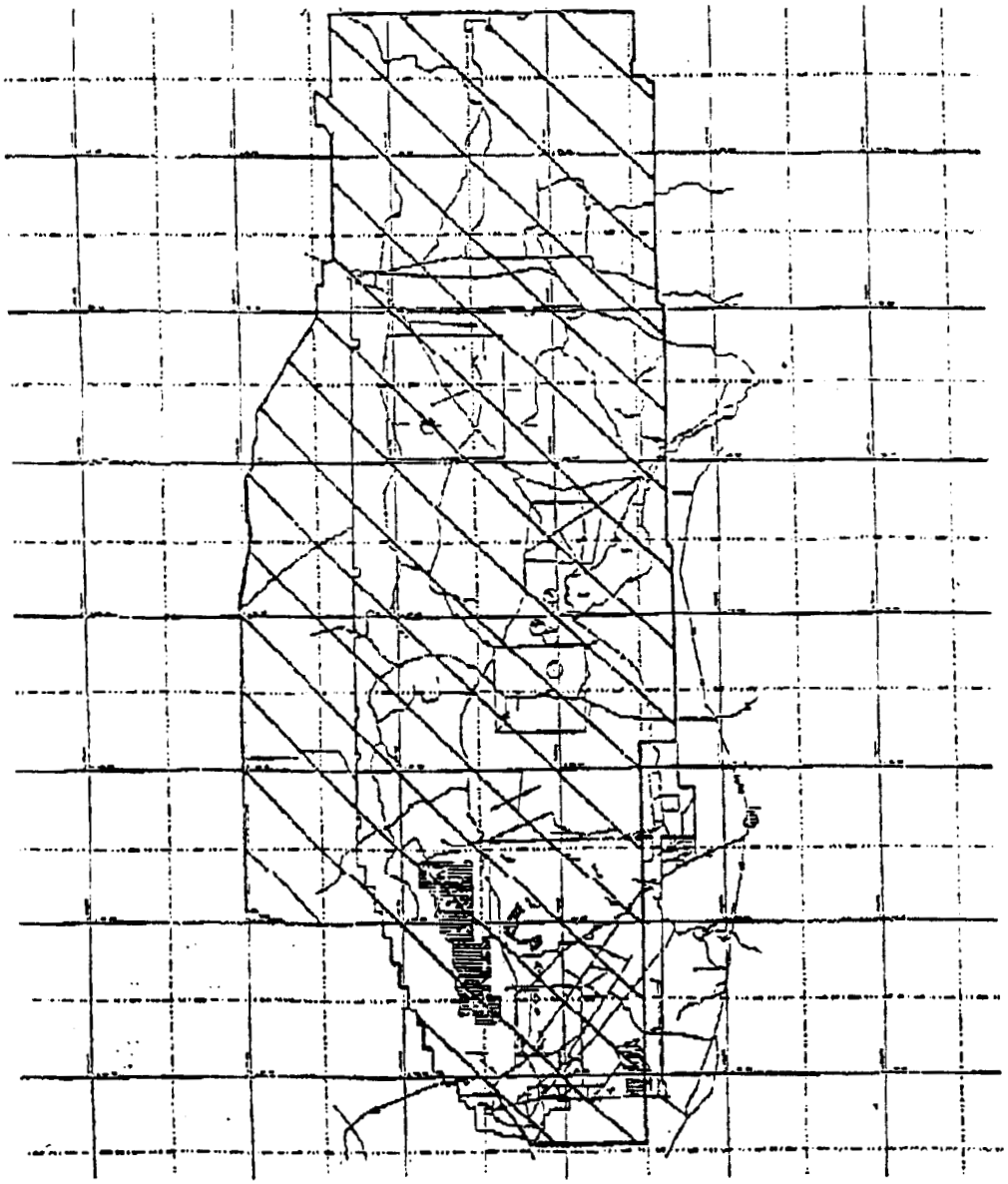
(Continued)

TAB C-3

WS MR

PROGRAM TITLE: STANDARD MISSILE
DOC NO.: OD 81398A

EVACUATION AREA



TAB-C-4

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WSMR

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Description of Requirements Drivers and Methodology Form

Category: Armament/Weapons

Subcategory: Surface-to-Air

Requirements Area: Air Space/Land Space

a. System Description: CNO Projects 463 and 623-2. AEGIS STANDARD Missile 2 (SM-2) Block IV testing utilizing Desert Ship (LLS-1) AEGIS Fire Control System and the MK 41 Vertical Launching System.

b. Engagement/Scenario Description: SM-2 Block IV Missile vs air-launched, high altitude, supersonic target with Top Level Requirement airborne Standoff Jammer in the background.

c. Description of Method Used to Determine Space Requirements:
Scenario
Aircraft Flight Envelopes
Missile Safety Footprint
Target Safety Footprint

d. DT&E or OT&E Requirements (check whichever applicable):

DT&E X

OT&E ____

Both ____

Attachment 2

FOR OFFICIAL USE ONLY

TAB-C-5

WSMR

FOR OFFICIAL USE ONLY

Description of Requirements Drivers and Methodology Form

Category: Armament/Weapons

Subcategory: Air-to-Surface

Requirements Area: Air Space/Land Space

a. System Description: The Standoff Land Attack Missile (SLAM) missile is launched from A-6 or F/A-18 aircraft. SLAM consists of a Harpoon missile body and propulsion system, a Global Positioning System receiver, a data link and a Maverick infrared seeker.

b. Engagement/Scenario Description: A SLAM mission consists of up to six aircraft and one missile launched against a ground target. Airspace Used: R5103B/C, R5107A and R5107B in addition to FAA airspace southeast of WSMR.

c. Description of Method Used to Determine Space Requirements:
Scenario
Aircraft Flight Envelopes
Missile Safety Footprint

d. DT&E or OT&E Requirements (check whichever applicable):

DT&E ____

OT&E ____

Both X

Attachment 2

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TAB - C - 6

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TEST AND EVALUATION REQUIREMENTS FORM
(ATTACHMENT I)

Requirement Areas	Categories: Armament/Weapons: Air-to-Air	Armament/Weapons: Air-to-Surface	Armament/Weapons: Surface-to-Air	Civic Missiles	Theater Missile Defense: Short Range	Theater Missile Defense: Medium Range	Theater Missile Defense: Long Range	Air Vehicles	Electronic Combat
1. Required Air Space									
a. Total SQ Miles (NM)		3620	11,358						
b. Down Range (NM)		162	240						
c. Cross Range (NM)		37	50						
d. System/Scenario Driving Requirements		Scenario, Mx Safety & Footprint	Scenario						
2 Restricted Air Space									
(To Include Warning Areas)									
a. Total SQ Miles (NM)		3420	5188						
b. Down Range (NM)		130	121						
c. Cross Range (NM)		37	45						
d. System/Scenario Driving Requirements		Scenario, Mx Safety & Footprint	Scenario						
3 Required Total Land Space									
a. Total SQ Miles (NM)		3120	5002						
b. Down Range (NM)		88	121						
c. Cross Range (NM)		37	45						
d. System/Scenario Driving Requirements		Scenario, Mx Safety & Footprint	Scenario, Mx & Tgt Safety Footprints						
4 Required DOD Land Space									
a. Total SQ Miles (NM)		3120	3142						
b. Down Range (NM)		88	88						
c. Cross Range (NM)		37	37						
d. System/Scenario Driving Requirements		Scenario, Mx Safety & Footprint	Scenario, Mx Safety & Tgt. Footprint						
5 Required Sea Space									
a. Total SQ Miles (NM)									
b. Down Range (NM)		NA	NA						
c. Cross Range (NM)									
d. System/Scenario Driving Requirements									
6 Read Straight Line Segment									
a. Total SQ Miles (NM)		151	240						
b. Supersonic Corridor Requirement (NM)		NA	215						
c. System/Scenario Driving Requirements		Scenario	Scenario						

TAB C-7

NOT AN ORIGINAL

WSMR

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Description of Requirements Drivers and Methodology Form

Category: Theater Missile Defense (TMD)

Subcategory: Long Range

Requirement areas: Air Space, Restricted Air Space, Total Land Space, DOD Land Space, Sea Space, and Straight Line Segment

a. System Description: Universal Documentation System (UDS): 020 - Theater High Altitude Area Defense (THAAD), and 007 - HERA.
The THAAD missile is an upper tier defense for Tactical Missile Defense (TMD). The program will develop a transportable missile with a kinetic kill vehicle. The mission of THAAD is to extend the anti-tactical ballistic missile (ATBM) capabilities of air defense forces in various theaters of operation. The HERA is a theater missile defense target. The HERA program will provide tactical ballistic missile reentry vehicle targets and conduct target missions in support of the THAAD interceptor flight test programs.

b. Engagement/ Scenario Description:

Requirement Area	Sq. NM	Down Range (NM)	Cross Range NM
THAAD			
Air Space	5990.8	136.9	48.6
Restricted Air Space	5990.8	136.9	48.6
Total Land Space	4502.3	136.9	28.1
DOD Land Space	4219.3	104.2	34.7
Straight Line Engagemen	N/A	60-70	N/A
	FT WINGATE/ GREEN RIVER/ WSMR	FT WINGATE/ GREEN RIVER TO WSMR	FT WINGATE/ GREEN RIVER TO WSMR
HERA			
Air Space	3637.5	173.5/346.8**	4.0/4.0
Restricted Air Space*	3637.5	173.5/346.8*	4.0/4.0
Total Land Space	3637.5	15/15	4.0/4.0
DOD Land Space	3079.6	0/10	0/10
Straight Line Engagemen	N/A	173.5/346.8**	N/A
* The HERA target will rich 80kft (uncontrolled air space)			
while within the launch hazard area.			
** The HERA target will utilize requirement areas already called out by			
THAAD			

Safety Footprint and Flight Envelopes:
Refer to enclosure 1.

TAB D-1

WSMR

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Description of Requirements Drivers and Methodology Form

c. Description of Method Used to Determine Space Requirement:

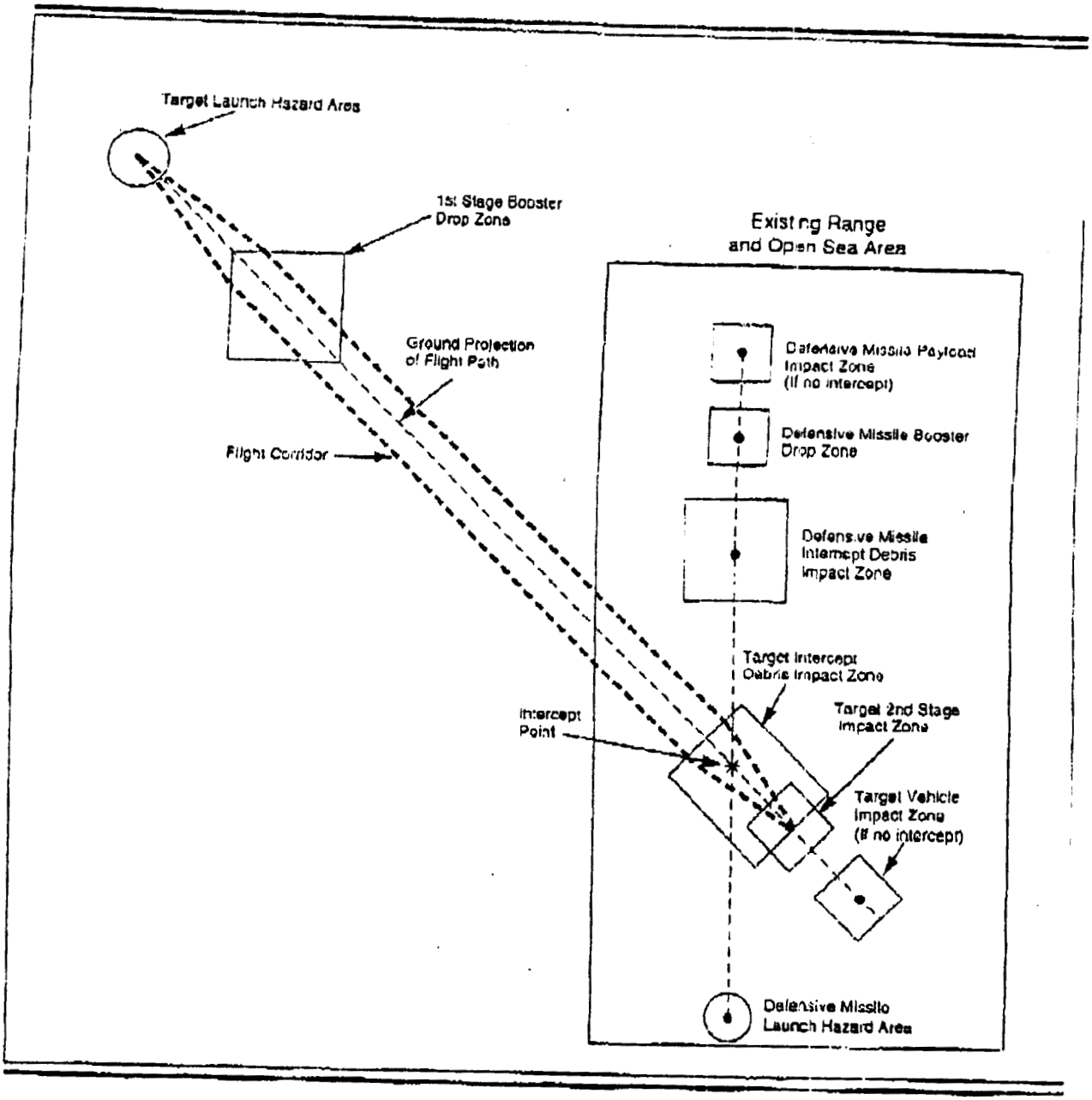
The Ballistic Missile Defense Organization (BMDO) has requested WSMR initiate the necessary evaluations that would ensure the safe and successful T&E of the TMD program. WSMR is evaluating the requirements and is in the process of formulating the operational requirements. Refer to encl 1 for scenario description.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E ____
OT&E ____
Both x

TAB - D-2

WSMR



Representative Impact Zones

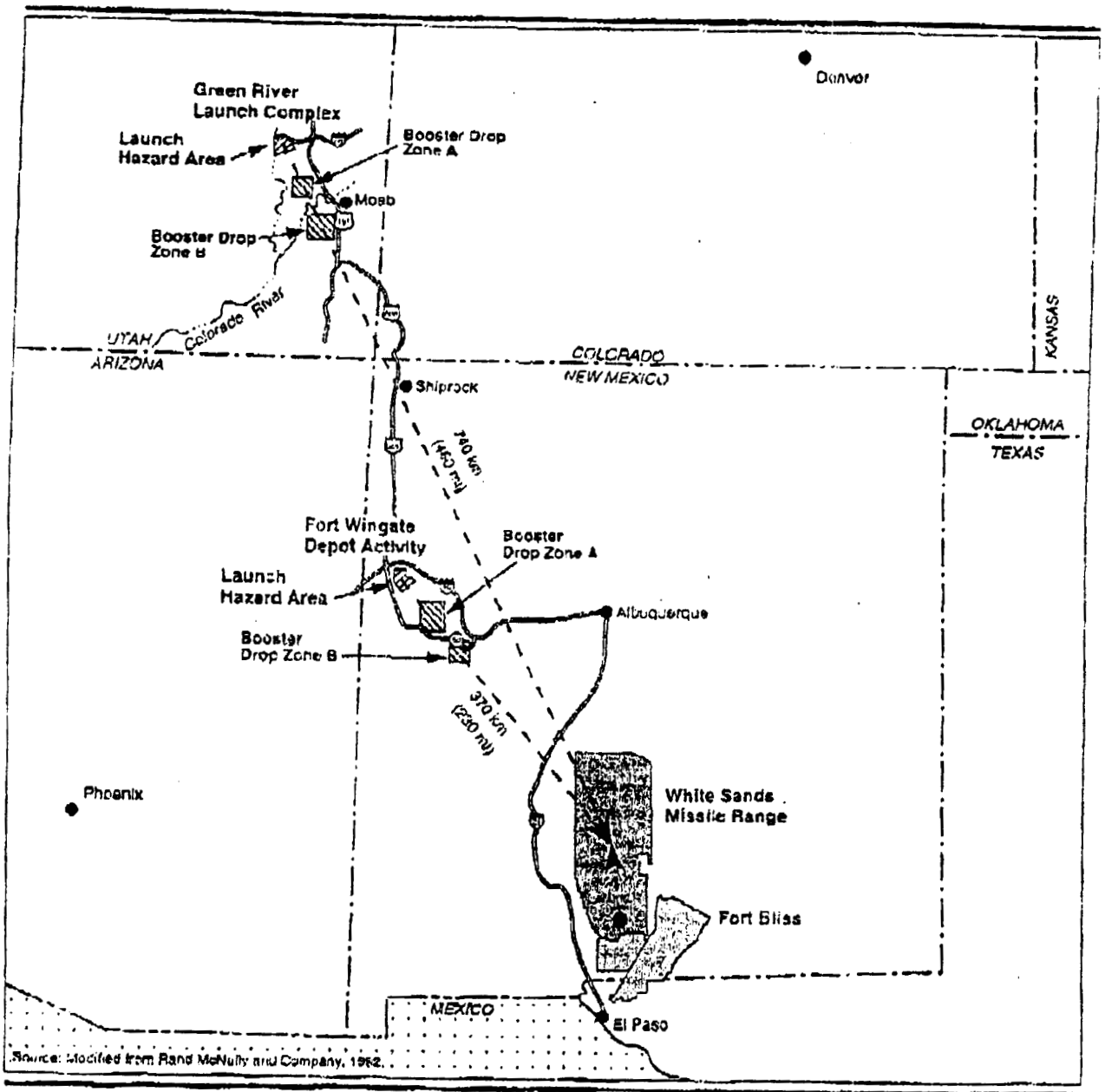
Not To Scale

Figure 2.1-6

TAB D-3
ENCL 1

52

WSMR



EXPLANATION

- Alternative First Stage Booster Drop Zone
- Launch Hazard Area
- Potential Missile Flight Paths

0 75 150 Kilometers
0 50 100 Miles

Candidate Test Area Activities

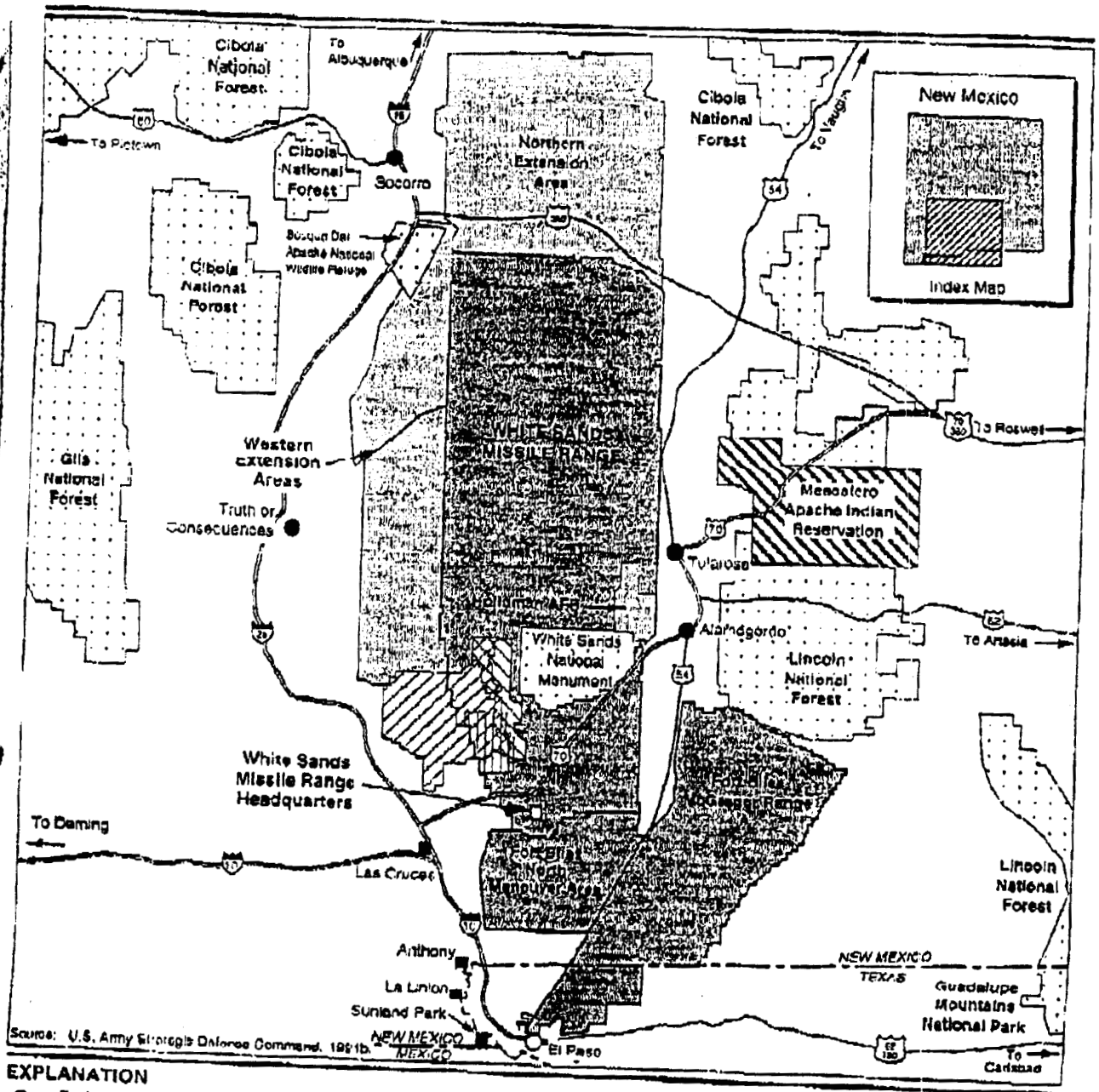
White Sands Missile Range
Candidate Test Area

Figure 2.2-1

TAB D-4

53

WSMR



Source: U.S. Army Strategic Defense Command, 1991b.

EXPLANATION

- Environmental Protection Agency Air Quality Data Collection Site
- New Mexico State Air Quality Data Collection Site
- NASA White Sands Test Facility
- San Andres National Wildlife Refuge
- Jornada Experimental Range
- Indian Reservation

0 20 40 Kilometers
0 15 30 Miles

Vicinity Location Map, White Sands Missile Range

White Sands Missile Range Candidate Test Area

Figure 2.2-2

TAB D-5

54

WSMR

Table 3.1-9: White Sands Missile Range and Fort Bliss Restricted Airspace

Restricted Area	Altitude		Area		Operations			Hours in Use
	Lower	Upper	km²	mi²	Aircraft[a]	Missile[b]	Other[c]	
R-5107B	Surface	Unlimited	9,075	3,504	9,715	235	126	8,784[d]
R-5107C	9,000	Unlimited	3,035	1,172	3,816	yes[e]	yes	2,717
R-5107D	Surface	22,000	1,901	734	2,669	yes	yes	3,406
R-5107E	Surface	Unlimited	438	169	860	yes	yes	212
R-5107F	FL240	FL450	4,113	1,588	0	none	none	0
R-5107G	FL240	FL450	3,292	1,271	0	none	none	0
R-5107H	Surface	9,000	2,800	1,081	3,309	none	none	2,661
R-5107J	Surface	9,000	220	85	4,140	yes	yes	3,264
R-5108A	24,000	Unlimited	5,814	2,245	875	none	none	160
R-5109B	24,000	Unlimited	3,450	1,336	840	none	none	180
R-5111A	13,000	Unlimited	1,502	580	1,467	yes	yes	1,213
R-5111B	Surface	13,000	1,502	580	871	yes	none	225
R-5111C	Surface	Unlimited	1,191	460	858	yes	none	134
R-5103A	Surface	18,000	-	-	830	yes	none	1,000
R-5103B	Surface	12,500	-	-	689	yes	yes	1,707
R-5103C	12,500	Unlimited	-	-	483	yes	none	1,723
R-5103D	18,000	Unlimited	-	-	389	yes	none	804
R-5107A	Surface	Unlimited	-	-	747	yes	yes	3,489

[a]Aircraft include helicopters, drones, fighter/bomber/cargo aircraft, high-flying test aircraft, and test track ejection components.
[b]Missiles include air-to-air, air-to-surface, surface-to-air, and surface-to-surface missiles and ordnance.
[c]Other includes remote-controlled vehicles, ground explosive tests, launches of high-altitude balloon research tests, and laser operations.
[d]As utilized by WSMR, 8,784 hours equals one full year (1992 was a leap year).
[e]"Yes" indicates that the area was used for that purpose but numbers are not available
Source: White Sands Missile Range, 1992b; Fort Bliss, 1992.

Bliss. Areas within the complex are combined when necessary to support missions which may require more space than is available within only one area. Activities which occur in various sections of the Fort Bliss McGregor Range fall into three main categories: aircraft, missile and artillery, and other, which were noted previously for WSMR operations (table 3.1-9).

There is a narrow corridor of Class E airspace floored at 365 m (1,200 ft) (with Class G airspace below) between WSMR and the McGregor Range. This corridor serves as a VFR flyway between the El Paso and Alamogordo areas. Approximately 85 km (53 mi) long and 3.7 to 9.3 km (2.3 to 5.7 mi) wide, it is the only feasible air route between these two areas (National Oceanic and Atmospheric Administration, 1993a).

3.1.1.3 Biological Resources – White Sands Missile Range and Fort Bliss McGregor Range

Several Federal agencies oversee various aspects of biological resource management. The Endangered Species Act declares that it is the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species (16 USC 1531 et seq.). Further, the act directs Federal agencies to use their

TAB-D-6

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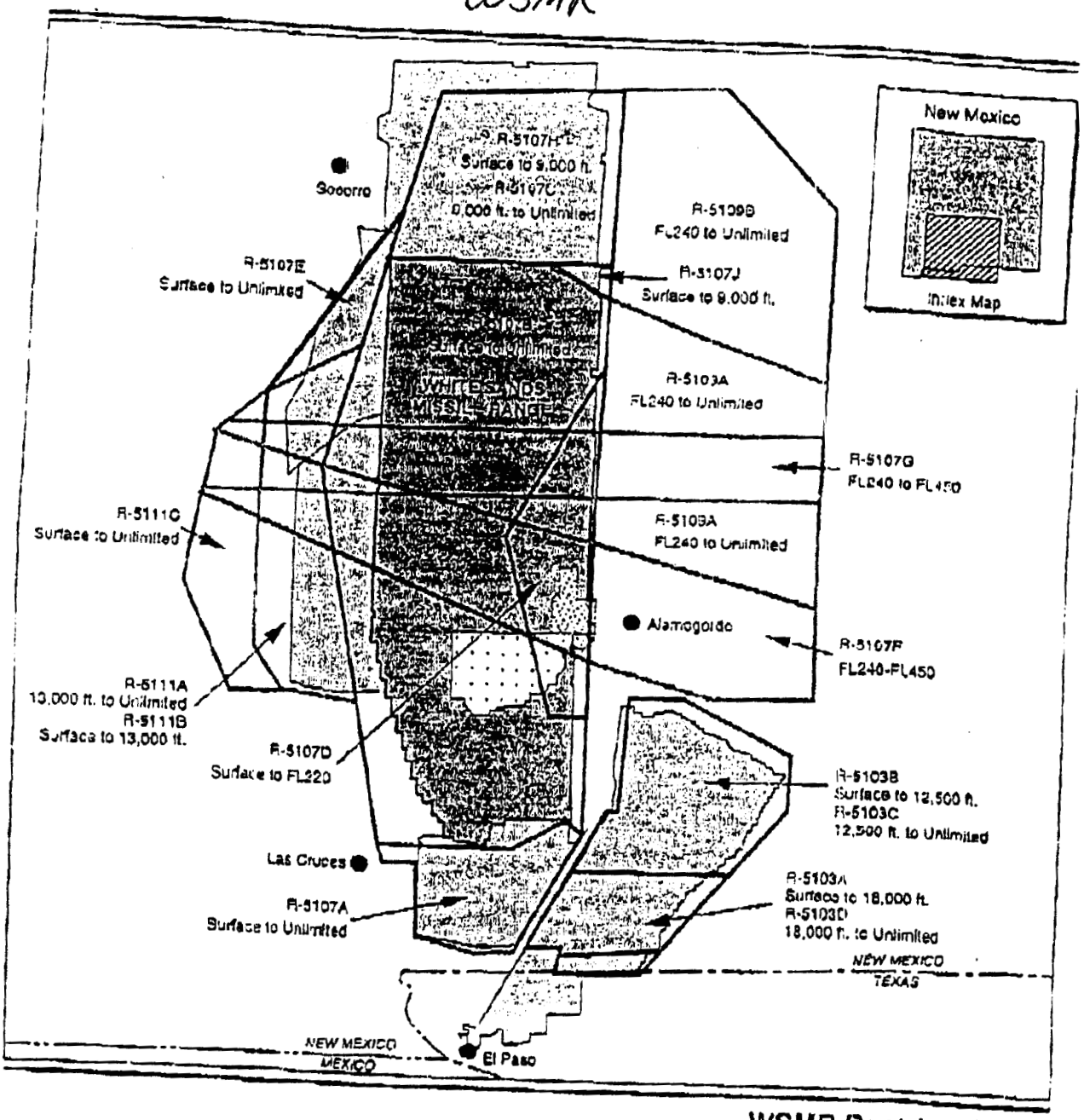
WSMR



WSMR Restricted Airspace

White Sands Missile Range
Candidate Test Area

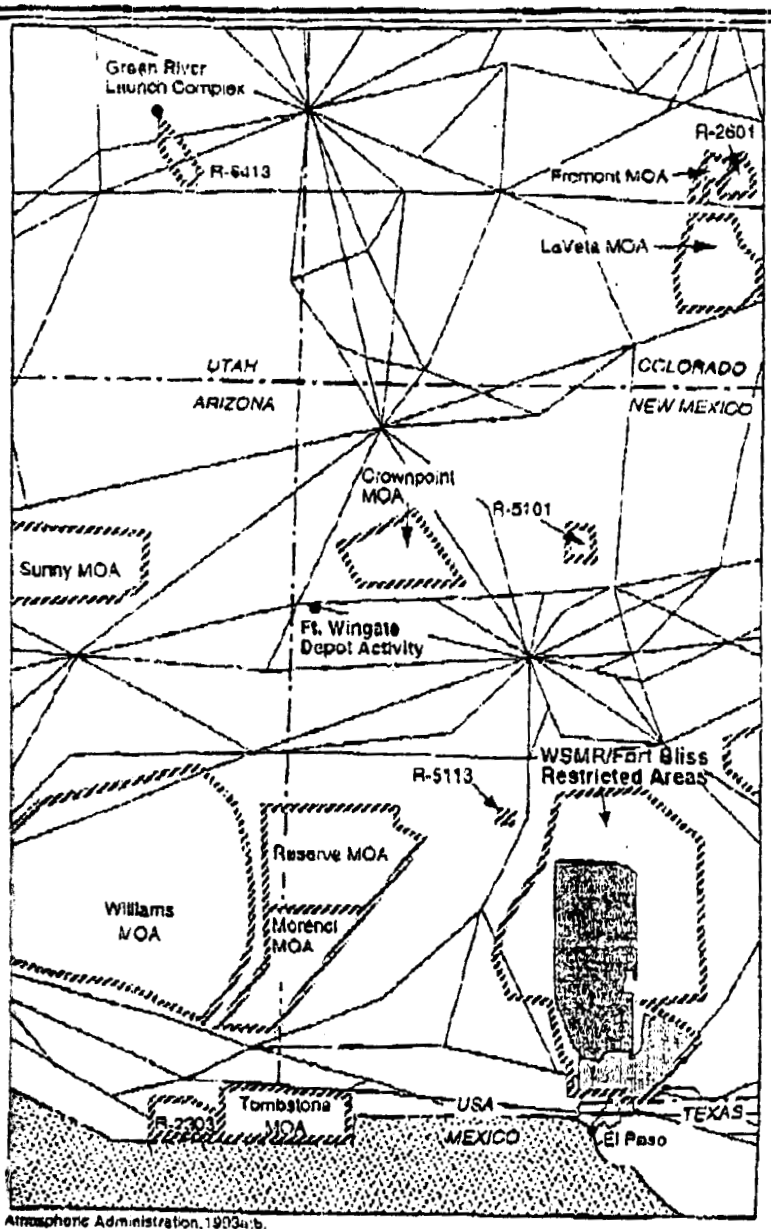
0 20 40 Kilometers
0 18 30 Miles

Figure 3.1-1

TAB D-7

56

WSMR



Source: National Oceanic and Atmospheric Administration, 1993a,b.

EXPLANATION

Restricted Areas and MOA Boundaries

Low Altitude Airways, Restricted Areas, Military Operations Areas

White Sands Missile Range
Candidate Test Area

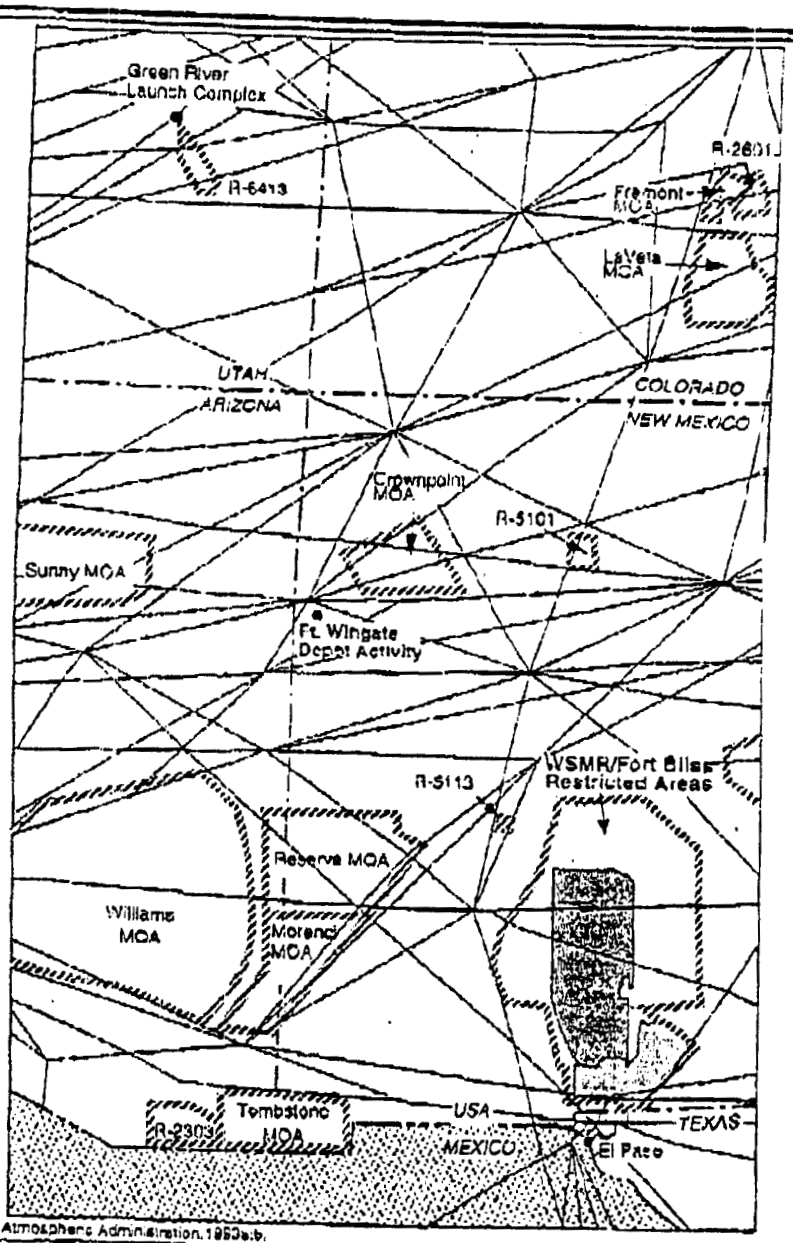
0 50 100 Kilometers
0 30 60 Miles

Figure 3.1-10

TAB D-8

52

WSMR



Source: National Oceanic and Atmospheric Administration, 1993a,b.

EXPLANATION

Restricted Area and MOA Boundaries

High Altitude Jet Routes, Restricted Areas, Military Operations Areas

White Sands Missile Range Candidate Test Area

0 50 100 Kilometers
0 30 60 Miles

Figure 3.1-11

TAB D-9

58

UNCLASSIFIED

FOR OFFICIAL USE ONLY 08/19/94 8:54 PM

Description of Requirements Drivers and Methodology Form (U)

(U) Category: Armament/Weapons

(U)Subcategory: Air-to-Air

(U)Requirements Area: Land 4

a. (U) System Description: AIM-120 AMRAAM. The AIM-120 AMRAAM is a medium range air-to-air missile powered by a rocket motor. It is capable of being launched from all inventory fighters (including the F-14D, all F-15 models, all F-16 models, and all F/A-18 models) and is compatible with the F-22. It receives a pre-launch message and post-launch data link messages from the launch aircraft before finding the target with its own onboard radar.

b. (U) Engagement/Scenario Description: Look-down, shoot-down scenario at subsonic speed on both launch aircraft and target. Target is in the ground clutter return at 75 feet above ground level (AGL). Launch aircraft at 29K feet altitude. Launch under head-on, medium range conditions. This is an actual launch in the AMRAAM F^3I test program which was conducted at White Sands Missile Range (WSMR). Actual profile was LP-188. Missile must be equipped with a Flight Termination System. All land ranges capable of supporting AIM-120 air-to-air missile launches require a Flight Termination System installed on both the missile and the drone target aircraft.

c. (U) Description of Method Used to Determine Space Requirements: Used the evacuation requirements for LP-188 conducted at WSMR under the above conditions. Evacuation requirements were determined by range safety. The evacuation area for the above launch was 1,138 sq. NM (Source: WSMR Operations Directive 37830A, AMRAAM LP-188 Launch).

d. (U) DT&E or OT&E Requirements (Check Whichever Applies):

DT&E:
OT&E:
BOTH: X

(U) POINT OF CONTACT: Mr. Tom LaMonica, 460G/OGM, DSN 872-5751

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TAB E

58A

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Description of Requirements Drivers and Methodology Form (U)

(U) Category: Armament/Weapons

(U) Subcategory: Air-to-Surface

(U) Requirements Area: 1 through 6

a. (U) System Description: The AGM-142 (HAVE NAP) program is an Air Force (AF) acquisition of the Israeli-built POPEYE, medium range, standoff missile. HAVE NAP provides long range bombers with a conventional precision strike capability. Primary carrier aircraft are dedicated B-52s. AGM-142 is powered by a solid-propellant rocket motor. Guidance is inertial, with data link, TV or IIR homing. The weapon weighs 3,300 lb. and has a 750 lb-class blast/fragmentation or penetrator warhead.

b. (U) Engagement/Scenario Description: The AGM-142 is employed against high value targets and delivered from a subsonic B-52 at high altitude (≤ 40K ft.). The test scenario usually involves an extended straight-line run-in of approximately 30 NM prior to weapon release. Test missiles can have live warheads and/or UHF Flight Termination Systems for command destruct.

c. (U) Description of Method Used to Determine Space Requirements: The HAVE NAP Operational Requirements document, dated 1 Dec 89 was used as reference for the scenario described above. The weapon footprint and range/airspace requirements were derived from the AGM-142 System Program Office's (ASC/YHH) Missile Mission Planning System which is a 6 degree-of-freedom flyout simulation (Version 3.7, dated Jun 94).

d. (U) DT&E or OT&E Requirements (Check Whichever Applies):

DT&E:
OT&E:
BOTH: X

(U) POINT OF CONTACT: Mr. Tom LaMonica, 460G/OGM, DSN 872-5751

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TAB F

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58B

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Description of Requirements Drivers and Methodology Form

Category: Air Vehicles

Subcategory: N/A

Requirement Areas: Required Straight Line Segment

a. System Description: C-141 aircraft loaded with multiple navigational systems under test and a reference system.

b. Engagement/Scenario Description: To separate different navigation system errors and to test specific parameters, it is necessary to fly cardinal headings in both the East/West and the North/South directions. These flights should be an integer multiple of a schuler period (84 minutes) of an INS.

c. Description of Method used to Determine Space Requirements: The C-141 flies west 550 nautical miles to California and then heads north 520 nautical miles. This is approximately 2 schuler periods, depending upon the speed of the aircraft. The aircraft then returns along the same route taken.

d. DT&E or OT&E Requirements (check whichever applicable):

DT&E _____

OT&E _____

Both Both

POINT OF CONTACT: Capt Anthony Popovich, 46TG/XPX, DSN 867-1230.

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TAB G

58C

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Description of Requirements Drivers and Methodology Form

Category: Theater Missile Defense (TMD) and Armaments/Weapons

Subcategory: Medium Range TMD and Surface-to-Air

Requirement areas: Air Space, Restricted Air Space, Total Land Space, DOD Land Space, Sea Space, and Straight Line Segment

a. System Description: Universal Documentation System (UDS): 089 - Phased Array Tracking to Intercept of Target (PATRIOT), 012 - Extended Range Intercept Technology (ERINT), 813 - Standard Missile (SM-2), 144 - STINGER, 301 - HAWK HIP, 084 - CHAPARRAL.

The programs above all utilize resources described in the requirement areas, and the Standard Missile (SM - The NAVY'S TMD SYSTEM) is the program that has been identified as the one requiring the maximum safety footprint and flight envelope (UDS 81398A - SM BLK 4 VS AQM-37C). In addition, PATRIOT and ERINT (The Army's TMD system) are systems that utilize range resources to the maximum similar to SM. The SM system has been described in another description of requirements drivers and methodology form. This description looks at the PATRIOT and ERINT systems:

1. PATRIOT is an advanced surface-to-air missile system capable of operation in an electronic countermeasure environment that can conduct multiple simultaneous engagements against high performance targets likely to be encountered in the 1990-2000 time frame. The test program is designed to develop and demonstrate the PATRIOT system capability to meet the required military specifications. Specific types of tests are: Ground system checks, target acquisition tests, target tracking tests, missile firing tests, and large scale target (approximately 50 aircraft) search/track tests. The PATRIOT system undergoing tests at WSMR is located at LC-38. Range instrumentation support consists of radars, telescopes, cinetheodolites, telemetry, drone formation control system, drone tracking control system, and real-time control. Active flight safety support consists of an on-board destruct system which is a command guidance failsafe and voltage failsafe destruct system, initiation results in warhead detonation, with resultant missile breakup and thrust termination. Range Area: From LC-38 uprange as far as Northern Range Extension or the western extension area, depending on target(PATRIOT, QF-100). Descriptions of the other programs listed above are furnished in the UDS program descriptions document.
2. ERINT will develop and demonstrate technology and hardware which can be used for the protection of theater-wide areas against ballistic missile attack. The Extended Range Intercept Technology program entails flight tests of a single-stage, agile hypervelocity, terminal homing missile which uses the high energy generated in a body-to-body intercept to destroy the target. The flight test program will demonstrate tactical ballistic intercept at mid-endoatmospheric altitudes.

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58D

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b. Engagement/ Scenario Description:

Requirement Area	FIX + WSMR	WEST EXT + WSMR	Down Range	Down Range	Cross Range
	Sq NM	Sq NM	FIX (NM)	WEST EXT (NM)	FIX/WEST EXT (NM)
PATRIOT VS CF-100 (FIX or WEST EXT are used depending on target flight pattern)					
Air Space	4223.3	3991.5	121.6	[illegible]	34.7/62.6
Restricted Air Space	4223.3	3991.5	121.6	[illegible]	34.7/62.6
Total Land Space	4223.3	3991.5	121.6	[illegible]	34.7/62.6
DOD Land Space	3016.6	3016.6	[illegible]	[illegible]	34.7
Straight Line Engagement	N/A	N/A	78.2	51.3	N/A
NOTE: UDS # 089/9 and 089/1 (PATRIOT VS CF100), 0890A (PATRIOT VS PATRIOT), and 01202 (ERINT VS STORM)					
WERE USED IN THIS EVALUATION					
The ERINT VS STORM scenario will utilize all of WSMR without FIX and WEST EXT AREAS					

Safety Footprint and Flight Envelopes:
Refer to enclosure 1.

Description of Requirements Drivers and Methodology Form

c. Description of Method Used to Determine Space Requirement:

The Ballistic Missile Defense Organization (BMDO) has requested WSMR initiate the necessary evaluations that would ensure the safe and successful T&E of the PATRIOT mid - range TMD program. Refer to encl 1 for scenario description. Conducting tests in a safe manner is a part of the WSMR mission. Since weapon testing carries inherent dangers, every precaution must be taken to minimize risks. All lethal test debris from test events must impact within WSMR-controlled land and airspace. Air space requirements must be planned so that normal flight and impact dispersion areas do not endanger on-range sensitive areas of the Range boundaries. WSMR evaluates the program requirements and processes and approves operational requirements.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E _____
OT&E _____
Both __x__

TAB H-2 58E

E/X

No. 08979	MISSILE FLIGHT SAFETY OPERATIONAL PLAN	Test Designator: A
Title: PATRIOT vs LONGRANGE QF-100 (E-24)		Page: 6 of 11
Para		UDS REP

d. A QF-100 may be destroyed by the Air Force in accordance with WSMR/ADWC Memorandum of Agreement.

e. Other operational constraints are given in the WSMR AFSWC Memorandum of Agreement.

f. If an emergency landing at White Sands Space Harbor is to be attempted, the Air Force must provide an emergency assistance aircraft standing by in a safe area to assist with the landing.

g. Any manned aircraft employed in conjunction with this test must remain at all times a safe distance from the drone, as WSMR cannot guarantee warning of a destruct action.

h. Target must begin a decent in altitude to 10,000 ft after I/C.

V RANGE DERIVED REQUIREMENTS 2099

A. Roadblocks and Evacuations -

1. Roadblocks

a. Public Highways - US Hwy 70 at BLUE and YELLOW and lock access gates between blocks.

b. Special roadblocks instruction - Block all access roads into the evacuation area north of Nike Avenue.

c. NR-CR will establish internal roadblocks as required to ensure the integrity of the evacuation area.

2. Evacuations -

a. Evacuate all personnel from an area defined by the line connecting the following WSTM coordinates (see Attachment 2):

X = Western Range Boundary	Y = 340,000
X = Western Range Boundary	Y = Northern Range Boundary
X = Eastern Range Boundary	Y = Northern Range Boundary
X = Eastern Range Boundary	Y = 440,000
X = 550,000	Y = 440,000
X = 650,000	Y = 187,500
X = 478,000	Y = 185,500

b. Evacuate the Northern Fix Area and WSNM.

3. Exceptions:

a. Mission essential personnel in support of the Patriot launch at LC-38.

ENCL 1

T - 2 minutes MFTSM at OCDF provides GREEN to Range for Patriot launch.

NOTE: "TO" refers to countdown to take off of target drone.

"T" refers to launch of the Patriot missile.

B. Test Limits - 1700

1. Patriot.

a. Launch azimuth: 350° T ± 1°.

b. Elevation: 37° to 39°.

2. QF-100 target.

a. Target heading: 170° T ± 1°.

b. Target velocity: 308 m/s.

c. Target altitude: 13.7 km MSL.

C. Operating Limits - 2000

1. Patriot.

a. The missile will not be destroyed by the MFTSM during the first 8 seconds of flight. All data sources will be evaluated to determine any action required after 8 seconds.

b. The missile will not be allowed to go past a line located 4 km from a WSMR range or safety boundary.

c. The missile will be destroyed if it endangers a sensitive on range area.

d. All data sources and plotting displays must be functional and destruct system verified flightworthy before a launch will be allowed.

2. QF-100.

a. Failsafe timer setting not to exceed 10 seconds from interrogation loss to destruct command.

b. The QF-100 will be destroyed at the discretion of the MFTSM if it crosses the safety boundary, endangers a sensitive area, or if, in his judgment, continuation of the flight will create a hazardous situation.

c. Between launch and recovery the QF-100 may not exceed safety boundaries shown in Attachment 1.

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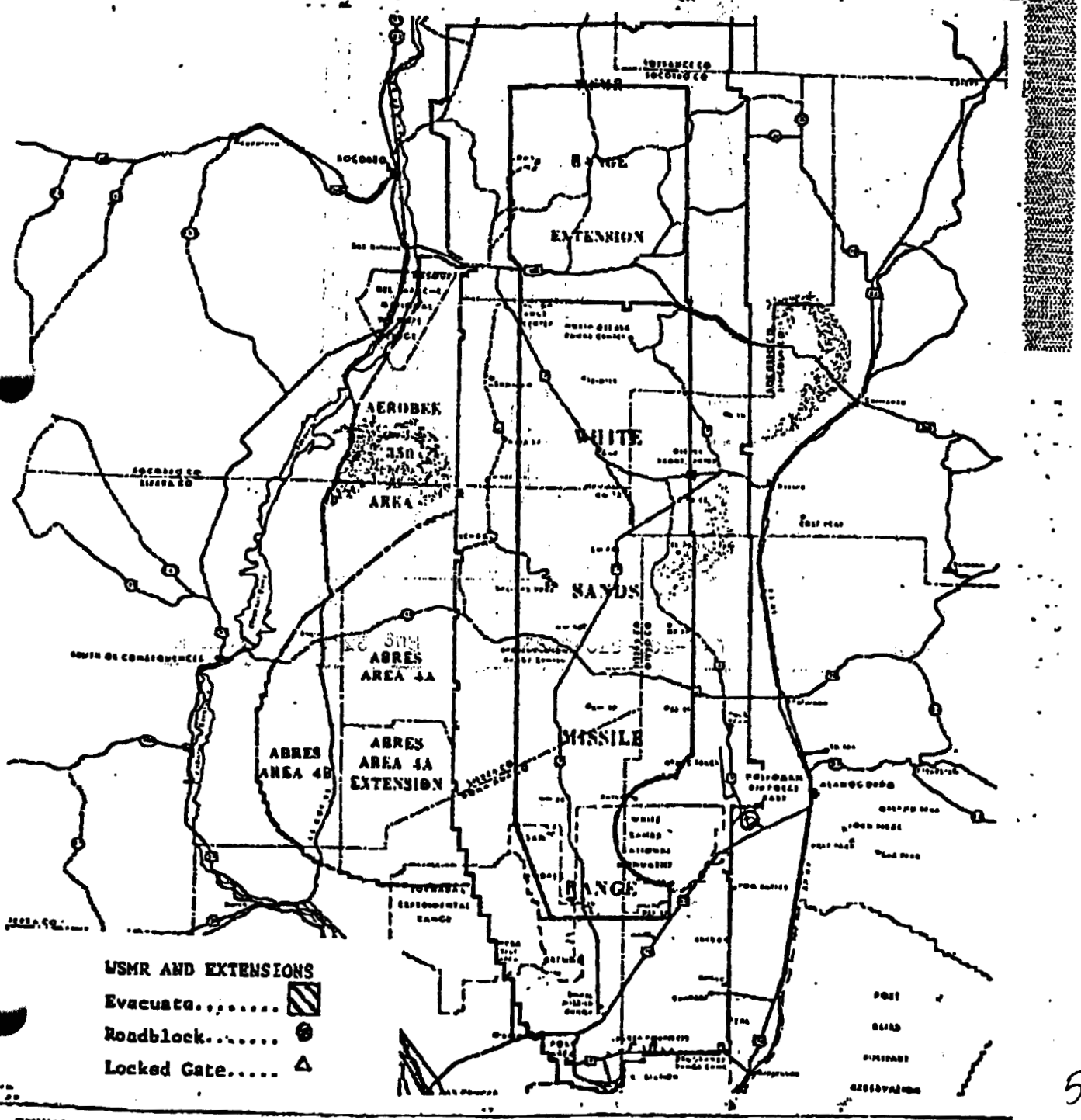
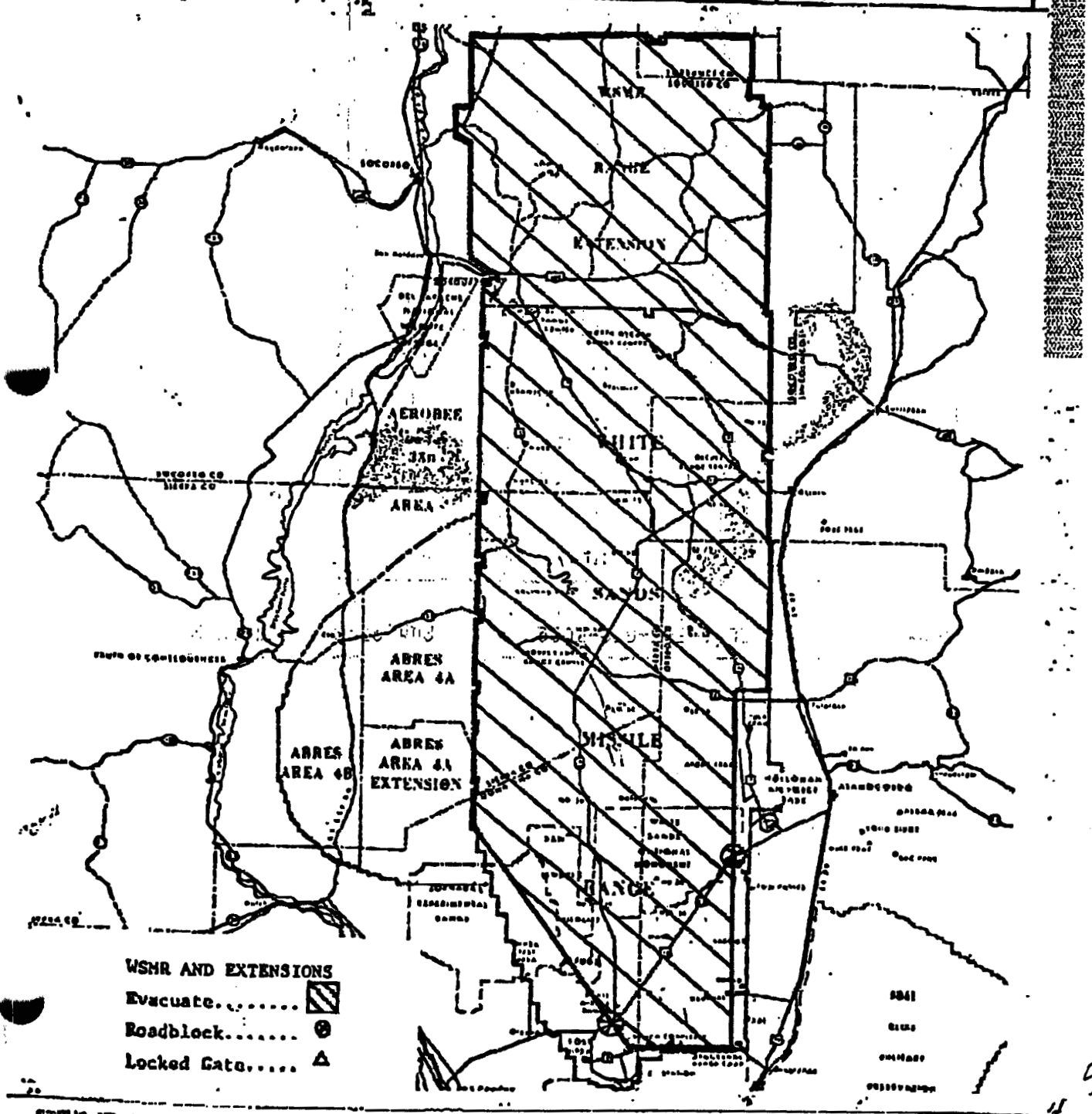
D NO: 08979	ROAD BLOCK AND EVACUATION MAP	REV NO:
ITLE: PATRIOT		TEST DESIGNATOR: A
		PAGE: ATTCH 1



58H

OD NO: 08979	ROAD BLOCK AND EVACUATION MAP	REV NO:
TITLE: PATRIOT		TEST DESIGNATOR: A
		PAGE: ATTCH 2



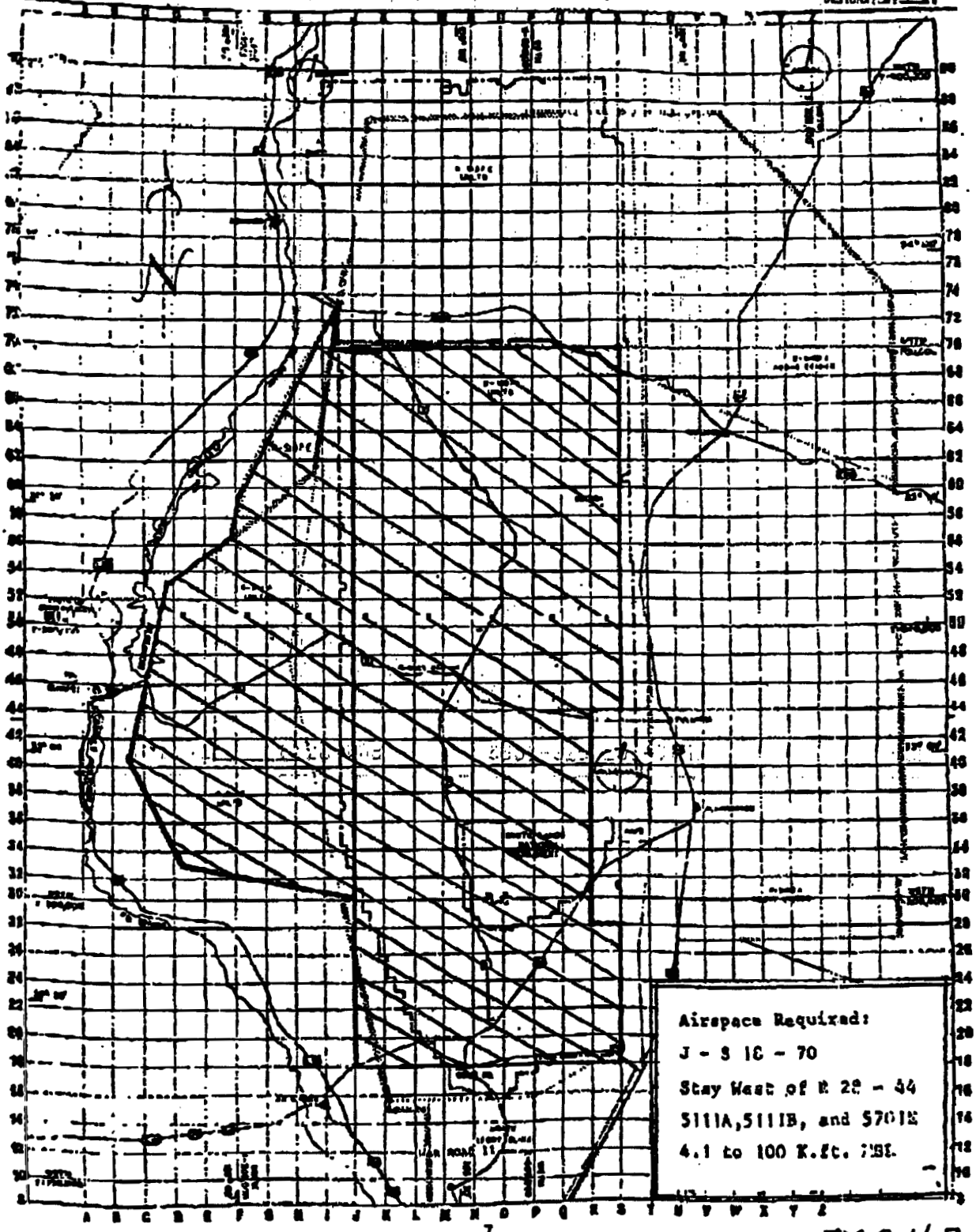
WEST EXT

PATRIOT

NO. 00089714

AIRSPACE OPERATIONS REQUIREMENTS

TEST DESIGNATOR: A



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TAB H-7 5 59 J

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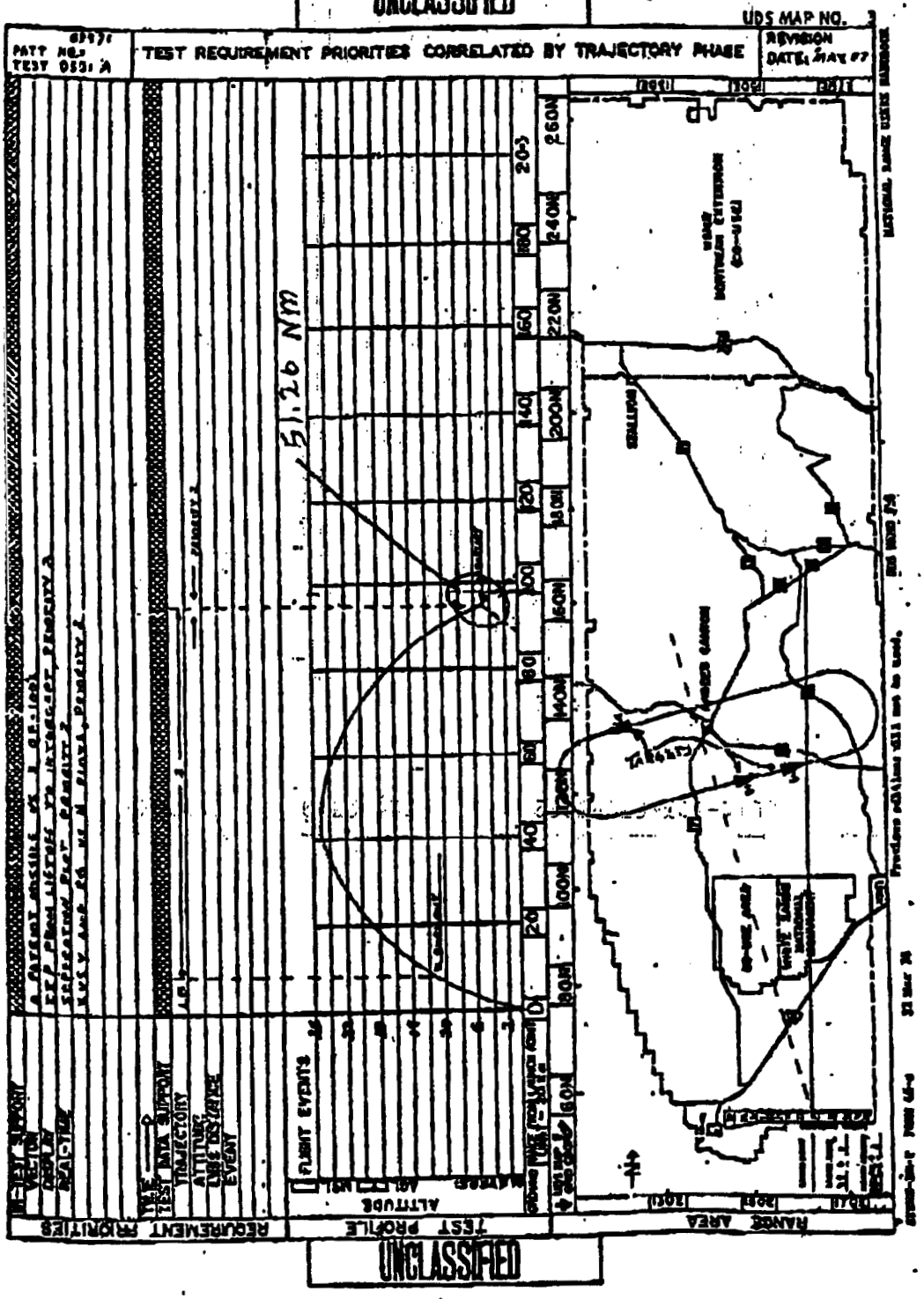

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TAB H86 58K

White Sands Missile Range
BRAC Data Call Number 7—Test and Evaluation Supplement
(US Army Electronic Proving Ground)

AUG 19 1994

CERTIFICATION STATEMENT

This report comprises the USAEPG input to the WSMR BRAC 95 Data Call Number 7–Test and Evaluation Supplement. The information contained in this report is accurate and complete to the best of my knowledge and belief.

WAYNE L. SITTLER
COL, SC
Commanding

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Test and Evaluation Requirements Form

(Attachment 1)

USAWSMR (EPG)

Categories

Requirement Areas	Air-to-Air	Armamental Weapons Air-to-Surface	Surface-to-Air	Cruise Missiles	Theater Short Range	Missile Medium Range	Defense Long Range	Air Vehicles	Electronic Combat
1. Required Air Space									
a. Total Square (nmi)								2457	13500
b. Downrange (nmi)								91	80
c. Crossrange (nmi)								27	47
d. System/Scenario Driving Req								UAV	JSTARS/Compass Cell EPLRS
2. Restricted Air Space									
a. Total Square (nmi)								1836	120
b. Downrange (nmi)								68	8
c. Crossrange (nmi)								27	12
d. System/Scenario Driving Req								UAV	Band IV/ MILES 2000
3. Required Total Land									
a. Total Square (nmi)								136	644
b. Downrange (nmi)								17	100
c. Crossrange (nmi)								15	100
d. System/Scenario Driving Req								UAV	EPLRS/LAV
4. Required DoD Land									
a. Total Square (nmi)								105	120
b. Downrange (nmi)								15	35
c. Crossrange (nmi)								7	35
d. System/Scenario Driving Req								UAV	JSTARS/ SINCGARS
5. Required Sea Space									
a. Total Square (nmi)								N/A	N/A
b. Downrange (nmi)									
c. Crossrange (nmi)									
d. System/Scenario Driving Req									
6. Required Straight Line Segment									
a. Total Requirement (nmi)								870	410
b. Supersonic Corridor Req (nmi)								N/A	N/A
c. System/Scenario Driving Req								SR71/ Shuttle	EA6B

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USAWSMR (EPG)

Description of Requirements Drivers and Methodology Form

Category: Air Vehicles

Subcategory: N/A

Requirements Area:

Required Air Space: Total Area: 96 sq nmi, downrange: 8 nmi, crossrange: 12 nmi
Required Restricted Air Space: Total Area: 96 sq nmi, downrange: 8 nmi, crossrange: 12 nmi
Required Total Land Space: Total Area: 105.4 sq nmi, downrange: 8.5 nmi, crossrange: 12.4 nmi
Required DOD Land Space: Total Area: 105.4 sq nmi, downrange: 8.5 nmi, crossrange: 12.4 nmi
Required Sea Space: NA
Required Straight Line Segment: 10 nmi

a. System Description: Airborne Standoff Minefield Detection System. ASTAMIDS is a payload package for the short-range UAV. Its purpose is to detect and define minefield boundaries on land.

b. Engagement/Scenario Description: Test will consist of laying out several different types of minefields on land, and flying several missions over these areas.

c. Description of Method Used to Determine Space Requirements: The use of normal airspace and landspace is needed to quantify the technical characteristics of the ASTAMIDS system and its ability to identify different types of threats at different ranges, altitudes, and aspect angles, while varying the ground and terrain features.

We have assumed that 25 to 35 minefields will be used, placed on various locations of the east range. These vary in size from 25 sq meters to 1,000 sq meters. Since the aircraft will fly over all mined and non-mined areas, we assume that 95% of the east range will be used.

The restricted airspace is required due to the use of an active IR laser with one of the ASTAMIDS systems.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E _____

OT&E _____

Both ___x___

Attachment 2

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USAWSMR (EPG)

Description of Requirements Drivers and Methodology Form

Category: Air Vehicle

Subcategory: N/A

Requirements Area:

Required Airspace: Total Area: 2,457 sq nmi, downrange: 91 nmi, crossrange: 27 nmi, System/Scenario Driving Requirement: JTUAV, MAE-UAV, JTUAV-MV, HAE-UAV.

Restricted Airspace: Total Area: 1,836 sq nmi, downrange: 68 nmi, crossrange: 27 nmi, System/Scenario Driving Requirement: JTUAV, MAE-UAV, JTUAV-MV, HAE-UAV.

Required Total Land Space: Total Area: 136 sq nmi, downrange: 17 nmi, crossrange: 8 nmi, System/Scenario Driving Requirement: JTUAV, MAE-UAV, JTUAV-MV, HAE-UAV.

Required DoD Land Space: Total Area: 105 sq nmi, downrange: 15 nmi, crossrange: 7 nmi, System/Scenario Driving Requirement: JTUAV, MAE-UAV, JTUAV-MV, HAE-UAV.

a. System Description: Unmanned Aerial Vehicles (UAVs) are designed to provide real-time reconnaissance information to the battlefield commander. A typical UAV system consists of a Ground Control Station (GCS), a Ground Data Terminal (GDT), and several Air Vehicles (AVs) with Day/Night or Day Only payloads.

(1) The current UAV systems driving our range requirements are as follows:

(a) **Joint Tactical UAV** (JTUAV, formerly UAV-Short Range): 108 nmi range via relaying the signals from one AV to another, 8-hour endurance, 1,300 lb AV with 29 ft wing span, 2,000 ft runway required for rolling take-off.

(b) **Medium Altitude Endurance - UAV** (MAE-UAV): 500-nmi range via satellite link, 24 plus hours endurance, 1,800 lb AV with 49 ft wing span, 3,000 ft runway required.

(2) The future UAV systems driving our range requirements are as follows:

(a) **Joint Tactical UAV - Maneuver Variant** (JTUAV-MV, formerly UAV-Close Range): approximately 82.4 nmi range, 3-4 hours endurance, approximately 250 lb, 1,000 ft runway required.

(b) **High Altitude Endurance - UAV** (HAE-UAV): range unknown, endurance unknown, 747-sized AV, 12,000 ft runway required.

Attachment 2

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USA WSMR (EPG)

b. Engagement/Scenario Description: USAEPG is responsible for conducting flight performance testing of UAV systems. Flight performance testing includes: Air Vehicle Flight; Guidance, Navigation, and Control; Target Acquisition; Radio Frequency (RF) Data Link; Tactical Communications, Ground Operations, Reliability and Maintainability, Integrated Logistics Support (ILS)/Manpower Integration (MANPRINT); and Safety.

c. Description of Method Used to Determine Space Requirements: We determined facilities, airspace, and ground space requirements based on past test experience and the physical size of the air vehicle. We will require ground targets placed on survey points spread over wide areas to determine whether the UAV system can accurately report a target's position. We will need large areas of air space to determine a UAV's range capability. We will need various airspace altitudes to determine a UAV's service ceiling depending on the operational characteristics of the UAV.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E X

OT&E _____

Both _____

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USAFWSMR (EPG)

Description of Requirements Drivers and Methodology Form

Category: Air Vehicle

Subcategory: N/A

Requirements Area: Air: Straight line: 870 nmi

a. System Description: The Shuttle and SR-71 are Airborne Platforms belonging to NASA.

b. Engagement/Scenario Description:

(1) The Shuttle Scenario is described by NASA on a case-by-case basis. USAEPG supports the Shuttle program because of the location of the Precision Tracking Radar systems. One radar system is located at Scott Peak, Fort Huachuca and the other is located at Mount Lemmon, outside of Tucson, Arizona. Mount Lemmon is approximately 74 nmi from Fort Huachuca. NASA requests USAEPG Radar Tracking when the Shuttle will be in an area that USAEPG radar data is vital to the Shuttle's mission.

(2) The SR-71 Scenario is described by NASA on a case-by-case basis. The SR-71 performs high altitude flights over specific land masses and terrain. The land masses and terrain chosen happens to be within the area of CONUS that USAEPG covers with Precision Tracking Radar. The radars used are Scott Peak, located at Ft Huachuca; Mount Lemmon, outside of Tucson, Arizona; and Oatmann Mountain, located approximately 240 mi west of Fort Huachuca, near Gila Bend, Arizona. The takeoff and recovery point for this system is at Edwards AFB, California. The flight path is from Edwards to a point designated by NASA in the Midwest, generally in Kansas. The unique location of the USAEPG radars provides the only radar coverage capability for the NASA mission east of Nevada and California. The straight line distance covered for this mission is approximately 870 nmi.

c. Description of Method Used to Determine Space Requirements: Space requirements are determined by NASA.

d. DT&E or OT&E Requirements (check whichever applies): Non-DOD

Attachment 2

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USAWSMR (EPG)

Description of Requirements Drivers and Methodology Form

Category: Electronic Combat

Subcategory: N/A

Requirements Area: Air: 699.8 sq nmi, 32.4 nmi downrange, 21.6 nmi wide.
Land: 466.6 sq nmi, 21.6 nmi downrange, 21.6 nmi wide.

a. System Description: The IEWCS system is a grouping of subsystems designed to revolutionize the way the Army does signal intelligence and electronic warfare at the division level of the battlefield of the future. These subsystems are used in the three Army IEW systems: Ground-Based Common Sensor Heavy (GBCS-H) (on a tracked vehicle for deployment with heavy divisions), Ground-Based Common Sensor Light (GBCS-L) (on a HMMWV for deployment with light divisions, and Advanced QUICKFIX (AQF) (on board the Army's EH-60A Blackhawk Helicopter for deployment with appropriate aviation units). The IEWCS system's multi-mission capabilities significantly improves the commander's tactical intelligence lethality and versatility through "targetable" intelligence, quick fire channels, surgical disruption and denial/deception of opposing command and control, and fire direction control nets.

b. Engagement/Scenario Description: Representative tactical system deployment and target locations are needed for technical tests. This requires a total test area of 40 by 60-km (699.8 sq nmi). The ground-based units are aligned along a baseline 10 km behind the FLOT and engage a target array throughout an area 40 km wide and 30 km deep. The AQF operates in the air space an additional 15 to 20 km behind the ground baseline, creating the total depth of 60 km.

c. Description of Method Used to Determine Space Requirements: Space was determined from the Operational Requirements Document (ORD) and System Specifications for the IEWCS program.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E _____

OT&E _____

Both ___x___

Attachment 2

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USAWSMR (EPG)

Description of Requirements Drivers and Methodology Form

Category: Electronic Combat

Subcategory: N/A

Requirements Area: Air: 150 sq nmi
Land: 88.5 sq nmi

a. System Description: Position and navigation systems [e.g., Global Positioning Systems (GPS) and Embedded GPS/Inertial Navigation (EGI) systems]. These systems may be either man-portable or vehicular-mounted. The specific equipment that may be tested are the Precision Lightweight GPS Receiver (PLGR), the PLGR-plus, Miniature Underwater GPS Receiver (MUGR), the Special Operations Lightweight GPS Receiver (SOLGR), SLGR II and Embedded GPS receivers that have been embedded into inertial systems, such as that used in the M1A1/2, PADS, MAPS/GPS hybrid, the Apache, the OH-58D, and the Comanche.

b. Engagement/Scenario Description: The testing would be primarily to traverse multiple waypoint routes to determine the accuracy of the position or navigation capability of the equipment. These waypoints would require first order surveyed markers to allow land navigation accuracy determination. Normal statistical determination of accuracy would require nominally 300 - 500 surveyed waypoints. These waypoints should be over a wide variety of terrain, which the whole of Fort Huachuca provides.

The testing would be primarily to fly figure-eight and race track routes to determine the accuracy of the positioning of navigation equipment. The routes flown would have to be in close proximity of an Instrumented Test Range (ITR) to allow for adequate accuracy data to be collected for analysis.

(1)	Required Total Land Space (To Include Warning Area)	Electronic Combat
	a. Total Square (nmi)	88.5 sq nmi
	b. Downrange (nmi)	10 nmi
	c. Cross-range (nmi)	10 nmi
	d. System Scenario Driving Requirements	Location of large numbers of surveyed waypoints
(2)	Required Air Space (To Include Warning Area)	Air Vehicles
	a. Total Square (nmi)	150 sq nmi
	b. Downrange (nmi)	20 nmi
	c. Cross-range (nmi)	20 nmi
	d. System Scenario Driving Requirement	Proximity of tracking

Attachment 2

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USA WS MR (EPG)

c. Description of Methods Used to Determine Space Requirements: The method used to determine space requirements was review similar testing conducted in the past on comparable equipment, physics of radio propagation, and statistical samples required to provide valid position accuracy information for analysis.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E __x__
OT&E _____
Both _____

USA TWSMR (2206)

Description of Requirements Drivers and Methodology Form

Category: Electronic Combat

Subcategory: N/A

Requirements Area: Air: 466.5 sq nmi
Land: 466.5 sq nmi

a. System Description: The Single Channel Ground and Airborne Radio System (SINCGARS) is the Army's standard combat net radio. It is a frequency hopping radio operating in the 30 to 88 MHz frequency range which is capable of providing secure voice and data communications under stressed conditions (jamming and high RF noise enviroment). In addition to its function as a combat net radio, it is being incorporated in such systems as AFATDS, MCS, MSE, and IVIS to provide the data communications links for the electronic battlefield.

b. Engagement/Scenario Description: The SINCGARS radio is required to provide line-of-sight communications over a 40-km range under a variety of terrain and conditions. Battlefield data communications systems would be deployed at widely separated sites covering a large geographical area to represent a diverse set of field conditions aproximating actual tactical battlefield conditions. Jamming and high level RF environments (mutual interference and cosite) are often provided to stress the data communications links.

c. Description of Method used to Determine Space Requirements: The requirement to have up to 40-km communications links dictates the space requirements. In order to provide the diversity of link distances and site separations, a 40 by 40-km area (466.5 sq nmi) is required. In order to provide for testing ground-to-air SINCGARS communications, space above the 40 by 40-km area up to the operational altitude limits (15 km) of the aircraft using SINCGARS radios is required.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E ____

OT&E ____

Both __x__

Attachment 2

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USAWSMR (EPG)

Description of Requirements Drivers and Methodology Form

Category: Electronic Combat

Subcategory: N/A

Requirements Area: Land: 40 km, line-of-sight, DOD land, 90 degree sector, 100 km point-to-point.
Other: A continuous frequency authorization throughout the range of 10 kHz to 18 GHz.

a. System Description: Saudi Arabian National Guard—Light Assault Vehicle (SANG-LAV). The scope of the testing on the 10 LAV variants to be purchased by the SANG includes Electromagnetic Interference (EMI), Electromagnetic Compatibility (EMC), and EMC cosite. The variants include the 25-millimeter personnel carrier, electronic warfare, communication and control, ambulance, recovery, etc. Systems are to be tested starting October 1994 through September 1997.

b. Scenario Description: Testing will include connectivity, EMC evaluation and scoring of VHF, and HF radio links. The 40-km distance (point-to-point, 90-degree sector) will be utilized while performing evaluations of the vehicles VHF communication equipment (SINCGARS). The 100-km distance (point-to-point) will be utilized to conduct assessments of the imbedded HF radio system for both ground wave and air wave scoring. These areas need to be free of man-made obstacles to support propagation analysis. The 40-km distance needs to be line-of-sight. A portion of the EMI test will be conducted outside using RF radiated fields (via test laboratory antennas) impinged upon each of the variant vehicles from 10 kHz to approximately 18 GHz.

c. Description of Method Used to Determine Space Requirements:

(1) The 40-km line-of-sight is required to evaluate the SINCGARS radios mounted upon the various platforms. The current SINCGARS rating is 35 km; however, improvements are forthcoming to extend the range to approximately 40 km.

(2) The 100-km range is essential to test the HF link to customer imposed requirements. This range will be used to score the effectiveness, and develop a comparison between, the Near Vertical Incident Skywave antenna versus a standard 13-inch whip antenna utilized upon each of the 10 variants.

(3) The radiating of large RF in the outside environment is necessary in order to test each of the variants for radiated susceptibility IAW MIL-STD-461D.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E X
OT&E ____
Both ____

Attachment 2

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USAWSMR (EPG)

Description of Requirements Drivers and Methodology Form

Category: Electronic Combat

Subcategory: N/A

Requirements Area:

Required Air Space: Total Area: 96 sq nmi, downrange: 8 nmi, crossrange: 12 nmi
Required Restricted Air Space: Total Area: 96 sq nmi, downrange: 8 nmi, crossrange: 12 nmi
Required Total Land Space: Total Area: 105.4 sq nmi, downrange: 8.5 nmi, crossrange: 12.4 nmi
Required DoD Land Space: Total Area: 105.4 sq nmi, downrange: 8.5 nmi, crossrange: 12.4 nmi
Required Sea Space: NA
Required Straight Line Segment: 10 nmi

a. System Description: MILES 2000 is a program to replace Basic MILES devices which are nearing the end of their economic life. Basic MILES is a family of low power, eye safe laser transmitters and receivers designed to simulate the operational characteristics of various weapons. This system allows units to conduct realistic two-sided tactical training exercises. A MILES-equipped weapon engages a target through the use of an encoded laser communication channel with the transmitter boresighted with the weapon's target acquisition/sighting system. The receipt of the laser message by detectors mounted on the intended target causes the MILES internal control system to signal near miss, hit, or kill information to personnel by audio and/or visual signals. Basic MILES was developed in response to the Army's need for realistic combined arms tactical training. The MILES devices are not intended as gunnery trainers but rather for collective training of soldiers in two-sided and free play tactical training exercises. Presently MILES has been fielded to divisional units in CONUS, USAREUR, and Korea. The expansion of MILES to accommodate additional weapon systems is continuing as requirements are identified.

b. Engagement/Scenario Description: Engagements will be designed to test performance of optical equipment on host MILES 2000 platforms. Engagements will be done at several ranges, angles, and in different types of climate and terrain.

c. Description of Method Used to Determine Space Requirements: The use of range and airspace is required to test the technical characteristics of the MILES 2000 system, especially the performance of the optical equipment and its ability to properly engage its target subsystems at different ranges and angles, and in various climates and terrains.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E __x__
OT&E ____
Both ____

Attachment 2

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USAWSMR (EPOG)

Description of Requirements Drivers and Methodology Form

Category: Electronic Combat

Subcategory: N/A

Requirements Area:

Required Air Space: Total Area: 96 sq nmi, downrange: 8 nmi, crossrange: 12 nmi
Required Restricted Air Space: Total Area: 96 sq nmi, downrange: 8 nmi, crossrange: 12 nmi
Required Total Land Space: Total Area: 105.4 sq mi, downrange: 8.5 nmi, crossrange: 12.4 nmi
Required DOD Land Space: Total Area: 105.4 sq mi, downrange: 8.5 nmi, crossrange: 12.4 nmi
Required Sea Space: NA
Required Straight Line Segment: 10 nmi

a. System Description: The AGES II is a training system designed to allow aircraft, such as the UH-60 Blackhawk, CH-47D Chinook, OH-58D Kiowa, and the AH-64A Apache to participate in MILES training exercises. The AGES II program also includes, as part of its procurement, the Hellfire Ground Support Simulator (HGSS) which is a training version of the Ground/Vehicle Laser Locator Designator (G/VLLD). The HGSS also has built-in detectors that act as laser shot receivers, allowing it to be 'hit' and 'killed' by MILES lasers.

b. Engagement/Scenario Description: Engagements will be designed to test performance of optical equipment on host AGES II air and ground platforms. Engagements will be done at several ranges, angles, and in different types of climate and terrain.

c. Description of Method Used to Determine Space Requirements: The use of range and airspace is required to test the technical characteristics of the AGES II system, especially the performance of the optical equipment and its ability to properly engage its target subsystems at different ranges and angles, and in various climates and terrains.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E ___x___

OT&E _____

Both _____

Attachment 2

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USAWSMR (EPG)

Description of Requirements Drivers and Methodology Form

Category: Electronic Combat

Subcategory: N/A

Requirements Area:

Required Air Space: 125 sq nmi (5 nmi wide by 25 nmi long)
Required Corridor: 5 nmi wide
Required Land Space: 6 sq nmi

a. System Description: Band IV is an airborne infrared (IR) and air defense threat radar sensor utilized to activate appropriate countermeasure/defense systems aboard an airborne platform (i.e., US and Allied rotary and fixed wing aircraft).

b. Engagement/Scenario Description: Airborne sensors are flown against known fixed station (ground) air defense radar and IR emitters. Test site ground-based sensors and measurement systems detect and record the airborne defense systems response time and countermeasure effectiveness against the ground-based air defense threat systems.

c. Description of Method Used to Determine Space Requirements: Total land space required is determined by written test requirement documents and available DOD land space at test site. Land space required is 6 sq nmi. Airspace required is determined by Air Force doctrine for the aircraft used and test criteria as specified in the approved Test Plan. An east/west flight corridor extending from 10,000 feet mean sea level (MSL) to ground level, 5 nmi wide by 25 nmi long (125 square nmi); centered over the test site at Fort Huachuca, Arizona is required. Test site coordinates are: 31° 39' 32.88" N and 110° 16' 1.43" W.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E __x__

OT&E _____

Both _____

Attachment 2

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USAWSMR (EPG)

Description of Requirements Drivers and Methodology Form

Category: Electronic Combat

Subcategory: N/A

Requirements Area: Air: 13,500 sq nmi over 120 sq nmi of DOD Land
Land: 120 sq nmi

a. System Description: JSTARS. Airborne Intelligence gathering system that in turn transmits data to selected terminals on the ground and can retrieve data from other airborne and ground-based systems.

b. Engagement/Scenario Description: Airborne platforms will carry the JSTARS system over an area of 120 sq nmi of DOD Land and 13,500 sq nmi of State Land where targets will be both fixed and mobile. The Airborne platforms will use Airspace approximately equal to the land except for one aircraft that will be using non-DOD airspace of approximately 150 sq nmi.

c. Description of Method Used to Determine Space Requirements: Airspace requirements are dictated by the system performance requirements to be demonstrated.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E ____

OT&E ____

Both __x__

Attachment 2

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USA USMC (EP 6)

Description of Requirements Drivers and Methodology Form

Category: Electronic Combat

Subcategory: N/A

Requirements Area: Air: 800 sq nmi, 80 nmi corridor, 10 nmi wide, straight line 400 nmi.
Land: 220 sq nmi

a. System Description: Technical and user testing of software upgrades to USAF Compass Call system.

b. Engagement/Scenario Description:

(1) For technical testing, USAF contractor develops latest software package and installs it into the EC-130H aircraft. We deploy 25 emitter systems in and around Fort Huachuca's ranges and establish communications nets and links, emulating a threat division communications slice. The aircraft flies between Tucson and Willcox and applies EW to these emitter systems. The USAF contractor on the ground controls the test and collects the EW data. We also provide all range support (range communications, air-ground net, real estate, test facilities, etc.) necessary as well as the emitter systems. The EC-130H departs Ontario Airport, California and flies directly to orbit between Tucson and Willcox. At test conclusion, the aircraft returns to Ontario. No restricted airspace is used. Straight line distance from Ontario to Tucson is approximately 400 nmi. During testing, the orbit consists of 80 nmi east-west with a corridor width of 10 nmi, for an orbit area of 800 sq nmi.

(2) For user testing, USAF personnel install contractor-developed software into the EC-130H Compass Call aircraft. We deploy 25 emitter systems in and around Fort Huachuca's ranges and establish communications nets and links, emulating a threat division communications slice. The aircraft flies between Tucson and Willcox and applies EW to these emitter systems. The USAF personnel on the ground controls the test and collects the EW data. We also provide all range support (range communications, air-ground net, real estate, test facilities, etc.) necessary as well as the emitter systems. The EC-130H departs Davis-Monthan AFB, Arizona (DMAFB) and flies directly to orbit between Tucson and Willcox. At test conclusion, the aircraft returns to DMAFB. No restricted airspace is used. Straight line distance from DMAFB to orbit station is negligible (DMAFB is in Tucson). During testing, the typical orbit consists of 80 nmi east-west with a corridor width of 10 nmi, for an orbit area of 800 sq nmi.

(3) Emitter systems deploy to surveyed sites on State of Arizona, Cochise County, and Fort Huachuca right-of-ways, covering an area of approximately 220 sq nmi.

c. Description of Method Used to Determine Space Requirements:

(1) USAF requirements and doctrine.

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USAWSMR (LOG)

(2) Threat doctrine.

(3) State of Arizona, Cochise County, and Fort Huachuca realty requirements and restrictions.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E _____

OT&E _____

Both ___x___

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USA WSMR(ERS)

Description of Requirements Drivers and Methodology Form

Category: Electronic Combat

Subcategory: N/A

Requirements Area: Air: 644 sq nmi
Land: 644 sq nmi

a. System Description: The Enhanced Position Location Reporting System (EPLRS) will be used by tactical forces for Command and Control (C2), Position/Navigation, identification, and limited user-to-user digital host communications. It is a frequency hopping radio operating in the 420 to 450 MHz frequency range and is capable of providing secure data communications under stressed conditions (jamming and high RF noise enviroment).

b. Engagement/Scenario Description: The EPLRS radio is required to provide line-of-sight communications over a 47-km range under a variety of terrain and conditions. Battlefield data communications systems would be deployed at widely separated sites covering a large geographical area to represent a diverse set of field conditions approximating actual tactical battlefield conditions. Jamming and high level RF environments (mutual interference and cosite) are often provided to stress the data communications links.

c. Description of Method Used to Determine Space Requirements: The requirement to have up to 47-km communications links dictates the space requirements. In order to provide the diversity of link distances and site separations, a 47 by 47-km area (644 sq nmi) is required. In order to provide for testing ground-to-air EPLRS communications, space above the 47 by 47-km area (644 sq nmi) up to the operational altitude limits (15 km) of the aircraft using EPLRS radios is required.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E __x__

OT&E _____

Both _____

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USA WSMR (EPG)

Description of Requirements Drivers and Methodology Form

Category: Electronic Combat

Subcategory: N/A

Requirements Area: Air: 800 sq nmi, 80 nmi corridor and 10 nmi wide; straight line 410 nmi.
Land. 220 sq nmi

a. System Description: Testing of communications electronic warfare system in USN EA6B aircraft.

b. Engagement/Scenario Description:

(1) We deploy approximately 25 emitter systems in and around Fort Huachuca's ranges and establish communications nets and links, emulating a threat division communications slice. The aircraft flies between Tucson and Willcox and applies EW to these emitter systems. The USN personnel on the ground controls the test and collects the EW data. We also provide all range support (range communications, air-ground net, real estate, test facilities, etc.) necessary as well as the emitter systems.

(2) The EA6B departs China Lake, California and flies to Davis Monthan AFB (DMAFB), Tucson, Arizona to refuel. The aircraft then goes directly into orbit between Tucson and Willcox. At test conclusion, the aircraft returns to DMAFB to refuel, then returns to China Lake. No restricted airspace is used. Straight line distance from China Lake to DMAFB is approximately 410 nmi. Straight line distance from DMAFB to orbit station is negligible. During testing, the typical orbit consists of 80 nmi east-west with a corridor width of 10 nmi, for an orbit area of 800 square nmi.

(3) Emitter systems deploy to surveyed sites on State of Arizona, Cochise County, and Fort Huachuca right-of-ways, covering an area of approximately 220 square nmi.

c. Description of method used to Determine Space Requirements:

(1) USN requirements and doctrine.

(2) Threat doctrine.

(3) State of Arizona, Cochise County, and Fort Huachuca realty requirements and restrictions.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E _____
OT&E _____
Both ___x___

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DEPARTMENT OF THE ARMY

UNITED STATES ARMY OPERATIONAL TEST AND EVALUATION COMMAND
PARK CENTER IV 4501 FORD AVENUE
ALEXANDRIA, VIRGINIA 22302 - 1458

CSTE-OPP (70)

26 AUG 1994

MEMORANDUM FOR DIRECTOR, THE ARMY BASING STUDY, OFFICE OF THE CHIEF OF STAFF, ARMY, ATTN: DACS-TABS, WASHINGTON, DC 20310-0200

SUBJECT: BRAC 95 Data Call #7 - Test and Evaluation, Supplemental

1. Reference memorandum, HQDA, DACS-TABS, undated, SAB, received 19 Aug 94 from TEMA via facsimile.

2. This memo transmits supplemental data (enclosures 1 and 2) as requested.

3. The information contained in this report is accurate and complete to the best of my knowledge and belief.

4. The OPTEC DCSOPS point of contact is Ms. Sue Swanson/ LTC Thomas G. Wills, DSN 289-4985/24756, commercial 703-756-4985-2476.

FOR THE COMMANDER:

2 Encls
1. Printed copies (3)
2. Diskette

JAMES G. SNODGRASS
COL, GS
Chief of Staff

CF: DIRECTOR, TEST AND EVALUATION MANAGEMENT AGENCY, ATTN: DACS-TE (MAJ FOWLKS), WASHINGTON, DC 20310-0102

BUY US SAVINGS BONDS THROUGH THE PAYROLL DEDUCTION PLAN

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TEST AND EVALUATION REQUIREMENTS FORM

Requirements Areas	CATEGORIES								
	Armament/Weapons			Cruise Missiles	Theater Missile Defense			Air Vehicles**	Electronic Combat
	Air-to-Air	Air-to-Surface	Surface-to-Air		Short	Medium	Long		
1. Required Air Space									
a. Total Square NM	No known	20	5,550					8,735	302
b. Downrange (NM)	test in	5	80					107	35
c. Crossrange (NM)	next 5 yrs	4	50					81	8.7
d. System/Scenario Driving Requirements		RF Hellfire Missile	Patriot FMS					Unmanned Air Vehicle	IEWCS
2. Restricted Air Space									
a. Total Square NM			5,500					4,840	4,841***
b. Downrange (NM)			80					1,001	1,001.6
c. Crossrange (NM)		N /A	50					6.6	6.6
d. System/Scenario Driving Requirements			Patriot FMS					FAA FT. Huachuca	FAA FT. Huachuca
3. Required Total Land Space									
a. Total Square NM		20	5,500					22,623	2,413
b. Downrange (NM)		5	80					130	69.5
c. Crossrange (NM)		4	50					174	34.7
d. System/Scenario Driving Requirements		RF Hellfire Missile	Patriot FMS					JTUAV	IEWCS ORD and STAR
4. Required DoD Land Space									
a. Total Square NM		20	5,500					132	132.3
b. Downrange (NM)		5	80					9.8	9.8
c. Crossrange (NM)		4	50					13.5	13.5
d. System/Scenario Driving Requirements		RF Hellfire Missile	Patriot FMS					*	*
5. Required Sea Space									
a. Total Square NM									
b. Downrange (NM)									
c. Crossrange (NM)		N /A	N /A					N /A	N /A
d. System/Scenario Driving Requirements									
6. Required Straight Line Segment									
a. Total Requirement (NM)			100						
b. Supersonic Corridor (NM)			50					0	0
c. System/Scenario Driving Requirements		N /A	Patriot					0	0

*Available space at Ft. Huachuca

***Exact space requirements unknown at this time due to interference factors

** Three additional tests are scheduled - Comanche, Special Operations Aircraft, and JSTARS- No need for dedicated space.

Description of Requirements Drivers and Methodology Form

Category: **Armament/Weapons**

Subcategory: **Air to Surface**

Requirements Area: **China Lake Naval Weapons Center, California**

a. System Description: APACHE Longbow helicopter with RF HELLFIRE Missiles.

b. Engagement/Scenario Description: Gunnery tables 6 thru 10 FM 1-140 subj: Helicopter Gunnery Coordinating Draft (dtd. December 1993).

c. Description of Method Used to Determine Space Requirements: The basis for the space requirements is established by the actual range used to fire the hellfire missiles. Gunnery table in b above states the methods used to engage targets - the range with safety exclusion zones determined the amount of space required. In addition to range template, the following methods were used:

Aerial Reconnaissance
Map Reconnaissance

d. DT&E or OT&E Requirements:

DT&E	
OT&E	X
Both	

Description of Requirements Drivers and Methodology Form

Category: Armament/Weapons

Subcategory: Surface to Air

Requirements Area: White Sands

a. System Description: The PATRIOT Advanced Capabilities (PAC-3) program is being implemented through a series of fielding configurations. Each configuration consists of a grouping of material change packages (MCPs). In accordance with the Operational Requirements Document (ORD) fielding document, each configuration will be fielded through a hardware retrofit and concurrently released post deployment software builds.

PAC 3 Configuration 2 consists of four major improvements: Radar Enhancement (RE) Phase II; Classification, Discrimination, Identification (CDI) Phase I; Counter Anti-radiation Missile (CARM) Phase I; and Communications Enhancements (CE) Phase I.

(1) RE Phase II, Pulse Doppler Processor (PDP), applied to the Radar Station, is a dedicated high speed processor that performs data processing as a background function which complements software implementation. The PDP improves multi-function capability, TBM detection, low altitude performance, and presence of biological clutter.

(2) CDI Phase I enhances the target processes by integrating processed information received from the Tactical Information Broadcast System (TIBS) and correlating this information with the weapon system information.

(3) CARM Phase I consists of several software modifications to be included in Configuration 2/Post Deployment Build (PDB)-4 to minimize PATRIOT system vulnerability to ARMs.

(4) The initial portion of the PATRIOT CE Phase I is dedicated to improving above-battalion communications. Specific implemented capabilities can allow PATRIOT to interface with (a) Mobile Subscriber Equipment (MSE), (b) US and coalition Tactical Automatic Digital Information Links (TADIL)-A networks, (c) US TADIL-J networks, and (d) platforms distributing remote sensor information.

The PAC 3 Configuration 3 consists of six major product improvements: five hardware MCPs; RE Phase III, CDI Phases II and III, Remote Launch Phase III, and CE Phase II; and Launch Point Determination (LPD) software upgrade. Configuration 3 will be

(Patriot - continued)
implemented by PDB-5 software. Configuration 3, along with the improved launcher, Theater High Altitude Air Defense (THAAD) integration, and the Automated Battery Command Post (when fielded) will enable the PATRIOT system to meet the PAC 3 ORD performance requirements.

b. Engagement/Scenario Description: The ability of the PATRIOT PAC-3 Configuration 2 and Configuration 3 system to operate in an operational environment while utilizing existing unit personnel in a fielded unit will be examined. Areas to be examined include system performance, logistics supportability, reliability, availability, and maintainability (RAM), safety, and human factors engineering. Field training exercises (FTXs) will be conducted during all weather, day and night, tactical operations in an operational environment in accordance with the operational mode summary/mission profile (OMS/MP). An air defense artillery (ADA) brigade (Bde) minus (-) will deploy in defense of critical assets. Operations will be conducted in a simulated battlefield environment using approved Combined Arms Center (CAC) scenarios.

(1) Training will be conducted by the United States Army Air Defense School (USAADASCH) for the player unit and the test team. Upon completion of training, USAADASCH will provide the Operational Test Readiness Statement (OTRS) to the tester for inclusion in test documentation.

(2) A pilot test will be conducted approximately 14 days prior to record trial test start date. The pilot test will consist of two 3 day FTXs driven by a simulated battlefield scenario for a PATRIOT battalion. The scenario will provide sufficient scripted events to allow for the collection of data necessary to verify the data reduction and validation process. Additionally, the Flight Mission Simulator (FMS) located at Launch Complex (LC) 38, White Sands Missile Range (WSMR) will be used to conducted simulated air battle scenarios at various times during the pilot test.

(3) Record trials will be conducted on North Fort Bliss and WSMR LC-38. Record trials will be conducted identical to those conducted during the pilot test, but will consist of four (4) 3 day FTXs. The OMS/MP being developed for PAC-3 will be used to construct as realistic as possible scenarios for test conduct. Air battle scenarios used in the FMS will be approved by the USAADASCH Threat Office and CAC. Detailed events, scenarios, and scripts will be published in the Detailed Test Plan (DTP) for PATRIOT PAC 3.

c. Description of Method Used to Determine Space Requirements: To validate the operational effectiveness/performance of the

(Patriot - continued)
Patriot PAC-3 Config-2 and 3 systems, airspace straight line requirements must be at least 100 nautical miles (NM) and maneuver landspace at least 50 nm.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E ____

OT&E _XX_

Both ____

Description of Requirements Drivers and Methodology Form

Category: Air Vehicles

Subcategory: Unmanned Air Vehicles (UAV)

Requirements Area: Air Vehicles @ Ft Huachuca

a. System Description: The Joint Tactical Unmanned Aerial Vehicle (JTUAV) consists of air vehicles (AV), modular mission payloads (MMP), ground data terminals (GDT), remote video terminals (RVT), mission planning stations (MPS), launch and recovery systems (LRS), ground control stations (GCS), ground support equipment and air data delays. A single system can consist of up to eight AVs and associated equipment. The JTUAV will support an Army Corps or a Marine Expeditionary Force (MEF).

b. Engagement/Scenario Description: The operational test scenario is based on the UAV-Short Range (UAV-SR) System Threat Assessment Report (STAR) and the Threat and the Doctrinal and Organizational Test Support Packages, tailored as necessary to provide adequate data on the critical issues. Specific threat targets for detection, location, and recognition will be portrayed consistent with the mission requirements of the on-board mission payload. The tactical scenario will be consistent with the Operational Level of War and Military Operations Other than War. Since the JTUAV is an Army Corps level system, threat targets will be tactically deployed in an area of approximately 130.26NM x 173.68NM available within Fort Huachuca, AZ and adjacent Federal and Public lands. The JTUAV AV is required to have an operational range of out to 107.92 NM from the FLOT.

c. Description of Method Used to Determine Space Requirements: The overall capabilities of the JTUAV are documented in: the Mission Needs Statement for UAV-SR dated 16 Dec 88; the Operational Requirements Document, dated 16 Oct 92; and the current JTUAV Test and Evaluation Master Plan, dated 15 Jan 93. Using these and the UAV-SR STAR, an employment scenario was jointly developed by Army and Marine Corps users which describes how the system would be employed and tasked by Army Corps and USMC MEF commanders. This scenario will be used in the operational testing of JTUAV.

d. DT&E or OT&E Requirements:

DT&E ____

OT&E __X__

Both ____

Description of Requirements Drivers and Methodology

Category: Electronic Combat

Subcategory: Electronic Combat

Requirements Area: Ft Huachuca

a. System Description: The Intelligence Electronic Warfare Common Sensor (IEWCS) is composed of modular, single disciplined intelligence, platform independent subsystems and combat information processors that interoperate to satisfy the intercept, direction finding, and situation development of Signals Intelligence (SIGINT) signals and target acquisition of Electronic Intelligence (ELINT) signals in support of the commander. IEWCS consists of three platforms: Ground Based Common Sensor-Heavy (GBCS-H) (mounted in a tracked Bradley variant), Ground Based Common Sensor-Light (GBCS-L) (mounted on a heavy High Mobility Multipurpose Wheeled Vehicle) and Advanced Quickfix (AQF) (mounted on the EH-60 Blackhawk helicopter). The GBCS-H, GBCS-L and AQF will be deployed to Army Division, Separate Brigade and Armored Calvary Regiment Intelligence Units.

b. Engagement/Scenario Description: The operational test scenario will be based on a mid-intensity conflict with an active electronic warfare threat. The target threat for the IEWCS system will be communications nets including HF, VHF and UHF stations and non-communications threat simulators deployed to simulate a threat division and corps. A land area of approximately 34.736 NM x 69.472 NM is required to operationally employ the GBCS-L and GBCS-H and to deploy the target threat environment. The flight track for the AQF for operational testing will be approximately 34.736 NM x 8.684 at 500 to 5000 feet above ground level.

c. Description of Method Used to Determine Space Requirements: The required operational and technical capabilities of the IEWCS are documented in: the GBCS H/L Required Operational Capability dated 21 Dec 90; the AQF Required Operational Capability dated 21 Dec 90; and the AQF Operational Requirement Document dated 2 Oct 92. Using these and the IEWCS System Threat Assessment Report, an employment scenario was developed by Army users which describes how the system would be employed and tasked by Army commanders. This scenario will be used in operational testing of the IEWCS.

(IEWCS - continued)

d. DT&E or OT&E Requirements:

DT&E ____

OT&E _X___

Both ____

TEST AND EVALUATION REQUIREMENTS FORM

Requirements Areas	CATEGORIES								
	Armament/Weapons			Cruise Missiles	Theater Missile Defense			Air Vehicles**	Electronic Combat
	Air-to-Air	Air-to-Surface	Surface-to-Air		Short	Medium	Long		
1. Required Air Space									
a. Total Square NM	No known	20	5,550					8,735	302
b. Downrange (NM)	test in	5	80					107	35
c. Crossrange (NM)	next 5 yrs	4	50					81	8.7
d. System/Scenario Driving Requirements		RF Hellfire Missile	Patriot FMS					Unmanned Air Vehicle	IEWCS
2. Restricted Air Space									
a. Total Square NM			5,500					4,840	4,841***
b. Downrange (NM)			80					1,001	1,001.6
c. Crossrange (NM)		N /A	50					6.6	6.6
d. System/Scenario Driving Requirements			Patriot FMS					FAA FT. Huachuca	FAA FT. Huachuca
3. Required Total Land Space									
a. Total Square NM		20	5,500					22,623	2,413
b. Downrange (NM)		5	80					130	69.5
c. Crossrange (NM)		4	50					174	34.7
d. System/Scenario Driving Requirements		RF Hellfire Missile	Patriot FMS					JTUAV	IEWCS ORD and STAR
4. Required DoD Land Space									
a. Total Square NM		20	5					132	132.3
b. Downrange (NM)		5						9.8	9.8
c. Crossrange (NM)		4						13.5	13.5
d. System/Scenario Driving Requirements		RF Hellfire Missile						*	*
5. Required Sea Space									
a. Total Square NM									
b. Downrange (NM)									
c. Crossrange (NM)		N /A	N /A					N /A	N /A
d. System/Scenario Driving Requirements									
6. Required Straight Line Segment									
a. Total Requirement (NM)			100						
b. Supersonic Corridor (NM)			50					0	0
c. System/Scenario Driving Requirements		N /A	Patriot					0	0

*Available space at Ft. Huachuca

***Exact space requirements unknown at this time due to interference factors

** Three additional tests are scheduled - Comanche, Special Operations Aircraft, and JSTARS- No need for dedicated space.

Description of Requirements Drivers and Methodology Form

Category: **Armament/Weapons**

Subcategory: **Air to Surface**

Requirements Area: **China Lake Naval Weapons Center, California**

a. System Description: APACHE Longbow helicopter with RF HELLFIRE Missiles.

b. Engagement/Scenario Description: Gunnery tables 6 thru 10 FM 1-140 subj: Helicopter Gunnery Coordinating Draft (dtd. December 1993).

c. Description of Method Used to Determine Space Requirements: The basis for the space requirements is established by the actual range used to fire the hellfire missiles. Gunnery table in b above states the methods used to engage targets - the range with safety exclusion zones determined the amount of space required. In addition to range template, the following methods were used:

Aerial Reconnaissance
Map Reconnaissance

d. DT&E or OT&E Requirements:

DT&E	
OT&E	X
Both	

Description of Requirements Drivers and Methodology Form

Category: Armament/Weapons

Subcategory: Surface to Air

Requirements Area: White Sands

a. System Description: The PATRIOT Advanced Capabilities (PAC-3) program is being implemented through a series of fielding configurations. Each configuration consists of a grouping of material change packages (MCPs). In accordance with the Operational Requirements Document (ORD) fielding document, each configuration will be fielded through a hardware retrofit and concurrently released post deployment software builds.

PAC 3 Configuration 2 consists of four major improvements: Radar Enhancement (RE) Phase II; Classification, Discrimination, Identification (CDI) Phase I; Counter Anti-radiation Missile (CARM) Phase I; and Communications Enhancements (CE) Phase I.

(1) RE Phase II, Pulse Doppler Processor (PDP), applied to the Radar Station, is a dedicated high speed processor that performs data processing as a background function which complements software implementation. The PDP improves multi-function capability, TBM detection, low altitude performance, and presence of biological clutter.

(2) CDI Phase I enhances the target processes by integrating processed information received from the Tactical Information Broadcast System (TIBS) and correlating this information with the weapon system information.

(3) CARM Phase I consists of several software modifications to be included in Configuration 2/Post Deployment Build (PDB)-4 to minimize PATRIOT system vulnerability to ARMs.

(4) The initial portion of the PATRIOT CE Phase I is dedicated to improving above-battalion communications. Specific implemented capabilities can allow PATRIOT to interface with (a) Mobile Subscriber Equipment (MSE), (b) US and coalition Tactical Automatic Digital Information Links (TADIL)-A networks, (c) US TADIL-J networks, and (d) platforms distributing remote sensor information.

The PAC 3 Configuration 3 consists of six major product improvements: five hardware MCPs; RE Phase III, CDI Phases II and III, Remote Launch Phase III, and CE Phase II; and Launch Point Determination (LPD) software upgrade. Configuration 3 will be

(Patriot - continued)
implemented by PDB-5 software. Configuration 3, along with the improved launcher, Theater High Altitude Air Defense (THAAD) integration, and the Automated Battery Command Post (when fielded) will enable the PATRIOT system to meet the PAC 3 ORD performance requirements.

b. Engagement/Scenario Description: The ability of the PATRIOT PAC-3 Configuration 2 and Configuration 3 system to operate in an operational environment while utilizing existing unit personnel in a fielded unit will be examined. Areas to be examined include system performance, logistics supportability, reliability, availability, and maintainability (RAM), safety, and human factors engineering. Field training exercises (FTXs) will be conducted during all weather, day and night, tactical operations in an operational environment in accordance with the operational mode summary/mission profile (OMS/MP). An air defense artillery (ADA) brigade (Bde) minus (-) will deploy in defense of critical assets. Operations will be conducted in a simulated battlefield environment using approved Combined Arms Center (CAC) scenarios.

(1) Training will be conducted by the United States Army Air Defense School (USAADASCH) for the player unit and the test team. Upon completion of training, USAADASCH will provide the Operational Test Readiness Statement (OTRS) to the tester for inclusion in test documentation.

(2) A pilot test will be conducted approximately 14 days prior to record trial test start date. The pilot test will consist of two 3 day FTXs driven by a simulated battlefield scenario for a PATRIOT battalion. The scenario will provide sufficient scripted events to allow for the collection of data necessary to verify the data reduction and validation process. Additionally, the Flight Mission Simulator (FMS) located at Launch Complex (LC) 38, White Sands Missile Range (WSMR) will be used to conducted simulated air battle scenarios at various times during the pilot test.

(3) Record trials will be conducted on North Fort Bliss and WSMR LC-38. Record trials will be conducted identical to those conducted during the pilot test, but will consist of four (4) 3 day FTXs. The OMS/MP being developed for PAC-3 will be used to construct as realistic as possible scenarios for test conduct. Air battle scenarios used in the FMS will be approved by the USAADASCH Threat Office and CAC. Detailed events, scenarios, and scripts will be published in the Detailed Test Plan (DTP) for PATRIOT PAC 3.

c. Description of Method Used to Determine Space Requirements: To validate the operational effectiveness/performance of the

(Patriot - continued)
Patriot PAC-3 Config-2 and 3 systems, airspace straight line requirements must be at least 100 nautical miles (NM) and maneuver landspace at least 50 nm.

d. DT&E or OT&E Requirements (check whichever applies):

DT&E ____

OT&E _XX_

Both ____

Description of Requirements Drivers and Methodology Form

Category: Air Vehicles

Subcategory: Unmanned Air Vehicles (UAV)

Requirements Area: Air Vehicles @ Ft Huachuca

a. System Description: The Joint Tactical Unmanned Aerial Vehicle (JTUAV) consists of air vehicles (AV), modular mission payloads (MMP), ground data terminals (GDT), remote video terminals (RVT), mission planning stations (MPS), launch and recovery systems (LRS), ground control stations (GCS), ground support equipment and air data delays. A single system can consist of up to eight AVs and associated equipment. The JTUAV will support an Army Corps or a Marine Expeditionary Force (MEF).

b. Engagement/Scenario Description: The operational test scenario is based on the UAV-Short Range (UAV-SR) System Threat Assessment Report (STAR) and the Threat and the Doctrinal and Organizational Test Support Packages, tailored as necessary to provide adequate data on the critical issues. Specific threat targets for detection, location, and recognition will be portrayed consistent with the mission requirements of the on-board mission payload. The tactical scenario will be consistent with the Operational Level of War and Military Operations Other than War. Since the JTUAV is an Army Corps level system, threat targets will be tactically deployed in an area of approximately 130.26NM x 173.68NM available within Fort Huachuca, AZ and adjacent Federal and Public lands. The JTUAV AV is required to have an operational range of out to 107.92 NM from the FLOT.

c. Description of Method Used to Determine Space Requirements: The overall capabilities of the JTUAV are documented in: the Mission Needs Statement for UAV-SR dated 16 Dec 88; the Operational Requirements Document, dated 16 Oct 92; and the current JTUAV Test and Evaluation Master Plan, dated 15 Jan 93. Using these and the UAV-SR STAR, an employment scenario was jointly developed by Army and Marine Corps users which describes how the system would be employed and tasked by Army Corps and USMC MEF commanders. This scenario will be used in the operational testing of JTUAV.

d. DT&E or OT&E Requirements:

DT&E ____

OT&E __X__

Both ____

Description of Requirements Drivers and Methodology

Category: Electronic Combat

Subcategory: Electronic Combat

Requirements Area: Ft Huachuca

a. System Description: The Intelligence Electronic Warfare Common Sensor (IEWCS) is composed of modular, single disciplined intelligence, platform independent subsystems and combat information processors that interoperate to satisfy the intercept, direction finding, and situation development of Signals Intelligence (SIGINT) signals and target acquisition of Electronic Intelligence (ELINT) signals in support of the commander. IEWCS consists of three platforms: Ground Based Common Sensor-Heavy (GBCS-H) (mounted in a tracked Bradley variant), Ground Based Common Sensor-Light (GBCS-L) (mounted on a heavy High Mobility Multipurpose Wheeled Vehicle) and Advanced Quickfix (AQF) (mounted on the EH-60 Blackhawk helicopter). The GBCS-H, GBCS-L and AQF will be deployed to Army Division, Separate Brigade and Armored Calvary Regiment Intelligence Units.

b. Engagement/Scenario Description: The operational test scenario will be based on a mid-intensity conflict with an active electronic warfare threat. The target threat for the IEWCS system will be communications nets including HF, VHF and UHF stations and non-communications threat simulators deployed to simulate a threat division and corps. A land area of approximately 34.736 NM x 69.472 NM is required to operationally employ the GBCS-L and GBCS-H and to deploy the target threat environment. The flight track for the AQF for operational testing will be approximately 34.736 NM x 8.684 at 500 to 5000 feet above ground level.

c. Description of Method Used to Determine Space Requirements: The required operational and technical capabilities of the IEWCS are documented in: the GBCS H/L Required Operational Capability dated 21 Dec 90; the AQF Required Operational Capability dated 21 Dec 90; and the AQF Operational Requirement Document dated 2 Oct 92. Using these and the IEWCS System Threat Assessment Report, an employment scenario was developed by Army users which describes how the system would be employed and tasked by Army commanders. This scenario will be used in operational testing of the IEWCS.

(IEWCS - continued)

d. DT&E or OT&E Requirements:

DT&E ____

OT&E _X___

Both ____

TEST AND EVALUATION REQUIREMENTS FORM

Requirements Areas	CATEGORIES								
	Armament/Weapons			Cruise Missiles	Theater Missile Defense			Air Vehicles**	Electronic Combat
	Air-to-Air	Air-to-Surface	Surface-to-Air		Short	Medium	Long		
1. Required Air Space									
a. Total Square NM	No known	20	5,550					8,735	302
b. Downrange (NM)	test in	5	80					107	35
c. Crossrange (NM)	next 5 yrs	4	50					81	8.7
d. System/Scenario Driving Requirements		RF Hellfire Missile	Patriot FMS					Unmanned Air Vehicle	IEWCS
2. Restricted Air Space									
a. Total Square NM			5,500					4,840	4,841***
b. Downrange (NM)			80					1,001	1,001.6
c. Crossrange (NM)		N /A	50					6.6	6.6
d. System/Scenario Driving Requirements			Patriot FMS					FAA FT. Huachuca	FAA FT. Huachuca
3. Required Total Land Space									
a. Total Square NM		20	5,500					22,623	2,413
b. Downrange (NM)		5	80					130	69.5
c. Crossrange (NM)		4	50					174	34.7
d. System/Scenario Driving Requirements		RF Hellfire Missile	Patriot FMS					JTUAV	IEWCS ORD and STAR
4. Required DoD Land Space									
a. Total Square NM		20	5,500					132	132.3
b. Downrange (NM)		5	80					9.8	9.8
c. Crossrange (NM)		4	50					13.5	13.5
d. System/Scenario Driving Requirements		RF Hellfire Missile	Patriot FMS					*	*
5. Required Sea Space									
a. Total Square NM									
b. Downrange (NM)									
c. Crossrange (NM)		N /A	N /A					N /A	N /A
d. System/Scenario Driving Requirements									
6. Required Straight Line Segment									
a. Total Requirement (NM)			100						
b. Supersonic Corridor (NM)			50					0	0
c. System/Scenario Driving Requirements		N /A	Patriot					0	0

*Available space at Ft. Huachuca

***Exact space requirements unknown at this time due to interference factors

** Three additional tests are scheduled - Comanche, Special Operations Aircraft, and JSTARS- No need for dedicated space.

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Subcategory: Air to Surface

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(IEWCS - continued)

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OT&E _X___

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