DCN 562

T&E PERCENTAGES

SITE/ACTIVITY: AFDTC @ EGLIN AFB, FL

FACILITY	TOTAL % T&E	AV	EC	A/W	OTHER	
DIGITAL MODELING AND SIM	100	0	3.5	96.5	0	A/W DMS
McKINLEY CLIMATIC LAB	100	58	9	0	33	AV MF
MULTISPECTRAL SIG MSMT	100	8	7	50	35	A/W MF
EGLIN SLED TRACK	100	0	2	92	6	A/W MF
WARHEAD ARENA	100	1	0	99	0	A/W MF
FUZE TEST FACILITY	100	0	0	99	1	A/W MF
GUN TEST FACILITY	96	0	0	93	3	A/W MF
GWEF	90.44	0.49	1.81	80.06	8.08	A/W HITL
AFEWES	100	0	100	0	0	EC HITL
REDCAP	100	0	100	0	0	EC HITL
RIMES	100	0	53	31	16	A/W ISTF
ASTE	80	3	5	40	32	A/W OAR
EMTE	98	1	57	9	31	EC OAR
GULF TEST FACILITY	33	1	3	7	22	A/W OAR
HELLFIRE TEST FACILITY	100	0	0	100	0	A/W OAR
BISS	95.8	1.3	0.5	3.1	90.9	OTHER OAR

Doug Nation 12 Aug 94
SIGNATURE DATE

Don Jeanblanc 12 Aug 94
SIGNATURE DATE

Don DeYoung 12 Aug 94
SIGNATURE DATE

FACILITY/CAPABILITY: GULF TEST FACILITY @ EGLIN AFB

TEST FACILITY CATEGORY: OAR

% T&E - OVERALL: 33

AV: 1

EC: 3

A/W: 7

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5): 10

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92 116	FY93	550
EC:	FY92 1,335	FY93	876
A/W:	FY92 ~~3,019~~ 3,125 HRS	FY93	2,687

Nation 12 Aug 94

[illegible] 8-15-94

(2.1.A.1) What amount of workload have you performed each year from FY86-93?

Reference the Historical Workload Form provided in Appendix A of this package.

(2.1.B.1) Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP.

Historical, FY 92

Program Element	AV	EC	A/W	OT	OTHER
11120F			X		
12356B			X		
21001F		X	X		
27130F		X			X
27133F	X	X	X		
27134F		X	X		
27163F			X		
27165F			X		
27217F	X				
27313F			X		
27412F		X			
27417F		X		X	
27426F			X		
27590F			X		
28015F	X	X	X		X
35116F		X			
35887F		X			
62101F			X		
62602F			X		
63203F				X	
63270F		X			

(2.1.B.1) Continued

Historical, FY 92 (Continued)

Program Element	AV	EC	A/W	OT	OTHER
63363F			X		
63601F			X		
63742F				X	
64211F		X		X	
64242F				X	
64270F		X			
64602F			X		
64604F			X		
64733F			X		
64754F				X	
64771D				X	
64940D			X	X	
6494OD				X	
65130D			X		
65712F		X	X	X	
65807F		X	X	X	
72207F		X			
72806F			X		
ARMY		X		X	
B6404D			X		

Historical, FY 93

Program Element	AV	EC	A/W	OT	OTHER
11120F			X		
12356B			X		
21001F		X	X		

(2.1.B.1) Continued

Historical, FY 93 (Continued)

Program Element	AV	EC	A/W	OT	OTHER
27129F		X			
27130F		X			X
27133F	X	X	X		
27134F		X	X		
27136F			X		
27163F			X		
27165F			X		
27217F	X				
27313F			X		
27417F		X			
27426F			X		
27429F					X
27590F			X		
28015F	X	X	X	X	X
28030F			X		
35116F		X			
35887F		X			
62101F			X		
63203F				X	
63270F	X				
63601F			X		
63742F				X	
64211F				X	
64239F	X				
64242F				X	
64270F		X			
64602F			X		

(2.1.B.1) Continued

Historical, FY 93 (Continued)

Program Element	AV	EC	A/W	OT	OTHER
64607F			X		
64733F			X		
64735F				X	
64754F				X	
64770F				X	
64771D				X	
64940D			X	X	
65130D			X		
65712F		X	X		
65804D	X				
65807F	X	X	X	X	
72806F			X		
ARMY				X	
B6404D			X		

Future Years

Program Element	AV	EC	A/W	OT	OTHER
11120F			X		
12356B			X		
27129F		X			
27130F		X			X
27133F	X	X	X		
27134F		X	X		
27136F			X		
27160F		X	X		
27163F			X		

(2.1.B.1) Continued

Future Years (Continued)

Program Element	AV	EC	A/W	OT	OTHER
27165F			X		
27217F	X				
27313F			X		
27412F		X			
27417F		X		X	
27419F		X			
27423F		X			
27429F					X
27590F			X		
28015F	X	X	X	X	X
28030F			X		
28060F			X	X	
35116F		X			
35887F		X			
62101F			X		
62602F			X		
63203F				X	
63270F	X	X			
63363F			X		
63601F			X		
63742F				X	
64226F			X		
64239F	X				
64242F				X	
64249F	X		X		
64270F		X			
64602F			X		
64604F			X		

(2.1.B.1) Continued

Future Years (Continued)

Program Element	AV	EC	A/W	OT	OTHER
64618F			X		
64727F			X		
64733F			X		
64735F				X	
64754F				X	
64770F				X	
64771D				X	
64940D			X	X	
65130D			X		
65712F		X	X	X	
65804D	X				
65807F	X	X	X	X	
72207F		X			
72806F			X		
ARMY		X		X	
B6404D			X		

(2.1.B.2) What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

Functional Area	FY92 Workyears	FY93 Workyears
Air Vehicle	.07	.31
Electronic Combat	.76	.50
Armament/Weapons	1.77	1.52
Other Test	2.95	3.52
Other	10.59	10.47

NOTE: Workyears computed by dividing test hours by 1768 hours per workyear.

GULF TEST FACILITY

(2.2.A) Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.).

Reference the Determination of Unconstrained Capacity Form provided in at the end of this package.

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

No.

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

Yes.

(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. The loss of the Gulf Test Facility would result in the inability to support "Quick Reaction" testing for contingency operations such as preparations and training for the Gulf War, classified missions, and classified stores for the F-117.

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

Yes. Gulf Test Facility is essential to AMRAAM testing and testing/training accomplished by ACC personnel at Tyndall AFB, FL. The Gulf Test Facility is also used extensively in conduct of Electronic Combat (EC) Tests at Eglin AFB, FL.

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

Yes. AMRRAM flight testing (DT&E and OT&E), Cruise Missile Testing, EC testing, and ACC testing/training by Tyndall AFB, FL are conducted using the Gulf Test Facility.

(3.1.A.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 and external to the site.

Roughly three-quarters of the test missions flown on the Gulf Test range involve the exchange of data or control with facilities external to the Gulf range. Examples of these types of tests (and their facilities) are:

- Tyndall AFB Gulf Range Drone Control Upgrade System (GRDCUS)
- Air Warfare Center's Weapon System Evaluation Program (WSEP)
- SEEK EAGLE weapons compatibility tests (Central Control Facility {CCF})
- Airborne Threat Simulator pod tests (EMTE)
- Cruise Missile Tests (CCF)
- AMRAAM tests (CCF)

(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.

Yes. Those facilities which depend on the Gulf Test range for airspace would either be closed or relocated to another open air range.

(3.1.B) Facility Condition (MV II)

Not Applicable. The Gulf Test Range contains no facilities.

(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.

<u>Encroachment:</u>

There are NO limiting encroachment characteristics associated with this facility.

<u>Environmental:</u>

No. There are no known current or future environmental limitations.

(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.

Encroachment:
Not Applicable.

Environmental:
Not Applicable.

(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.

None of the AFDTC controlled water test ranges located in the Gulf of Mexico are currently operating with any temporary permits or voluntary agreements of an environmental nature.

(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:	253,144
100 Mile Radius:	952,650
150 Mile Radius:	1,211,688
200 Mile Radius:	1,966,382

Note: Centroid for measurement is the intersection of the two runways on Eglin main.

(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.

Jet airway J58-86 and Gulf Route 26: routes are used on a daily basis. Sea area under warning areas W-151 and W-470 is in international waters. Air routes may be closed for up to four hours for test activities which allows more than adequate time to conduct all project mission requirements . Sea area is sufficiently large to permit positioning the test activity to avoid surface traffic.

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

None. Since 1988, there have been only two occasions when AMRAAM launch missions had to be postponed (of over 220 launches conducted) and one TOMAHAWK launch.

(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.1) Do you have specialized facilities which 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 following facilities are currently required to support the Gulf Test Facility mission or are potentially required to support future test mission activities.

SUPPORT FACILITIES LIST

AIR WARFARE CENTER

SPADATS

NAVAL EXPLOSIVE ORDNANCE DISPOSAL SCHOOL

AFDTC
- **Freeman Computer Science Center**
  - **Test and Analysis**
  - **System Technology**
  - **Gulf Range Drone Control Upgrade System (GRDCUS)**
- **Safety**
- **Instrumented Airborne Platforms (C-130, F-111, F-15, F-16, UH-1)**
- **Avionics**

AFDTC (Continued)
- JTIDS Ground Technical Facilities/Support Equipment
  - Enhanced JTIDS System Exerciser (EJSE)
  - JTIDS Integration "Hot" Bench & JTIDS Interface Test Set
- Multilateration Systems & GPS
- Airborne Systems/Instrumentation
- Meteorological Instrumentation
- "Specialized" Electronic Systems Flight
- Electronic Design and Development Flight
- Aircraft Systems/Design and Modification
- Air-to-Air Missile Maintenance Facility
- Air-to-Ground Missile Maintenance Facility
- Precision Measurement Equipment Lab (PMEL)
- Precision Measurement Facility - Site III Mass Properties
- Munitions Build-Up
- Munitions Storage and Handling
- Armament Maintenance Section
- Alternate Mission Equipment Section
- Aircraft Repair Element
- Egress
- Fuels
- Propulsion
- Machine Shop
- Structural Maintenance
- Metals Processing
- Corrosion Control
- Non-Destructive Inspection
- Electro-Environmental
- Pneudraulic
- Patterns and Plastics
- Survival Equipment
- Inspection Element

AFDTC (Continued)
Wheel and Tire Element
Aerospace Ground Equipment

AIR WARFARE CENTER

The mission of the USAF Air Warfare Center (USAFAWC) is to test and evaluate new or improved weapon systems and air defense radar systems and to support the Combat Air Forces (CAF) in assigned areas of technical expertise. Specific duties include operational testing of the following CAF weapon systems and equipment: electronic combat (EC) systems and support equipment; reconnaissance systems; aircrew training devices (ATDs); life support; command, control, communications, and intelligence (C3I); armament and avionics systems; combat support; chemical warfare defense (CWD); air base and installation security systems (BISSs) and subsystems; and air defense radar systems and equipment. USAFAWC provides technical and operational expertise to assist Headquarters (HQ) Air Combat Command (ACC) in providing operational forces required in support of testing managed by the Air Force Operational Test and Evaluation Center (AFOTEC). USAFAWC also manages and conducts Follow-on Operational Test and Evaluations (FOT&Es) of hardware and software for which AFOTEC serves as the Air Force focal point. USAFAWC develops and evaluates tactics for EC, avionics and armament, reconnaissance systems, ATDs, life support, C3I, drones, combat support, CWD, BISS, and air defense radar systems and equipment. The Center reprograms designated EC systems to meet mission needs of CAF aircraft. (The peacetime implementation of this mission is through USAFAWC Emergency Reprogramming Center (ERC). The Center also maintains the software that supports the reprogramming of EC systems. USAFAWC creates various mission data configurations in EC systems and manages these configurations according to AFR 800-14. USAFAWC assists the HQ ACC operations staff and CAF units in determining the use of and making improvements to technical equipment and software used by the CAF. USAFAWC assists the HQ ACC staff in the Air Force requirements and acquisition process, including concept exploration, demonstrations, and evaluations. USAFAWC improves the effectiveness of CAF systems through such evaluation programs as the Air-to-Ground Weapon Systems Evaluation Program (A/G WSEP), the Ground to-Ground Weapon Systems Evaluation Program (G/G WSEP), the Electronic Warfare Evaluation Program, the Air-to-Air Weapon Systems Evaluation Program (A/A WSEP), the Periodic Radar Evaluation Program, the Air Force Radar Evaluation Program, and the Precision Guided Munitions Analysis Program. USAFAWC improves the combat capability of CAF personnel through specialized training: Blue Flag exercises (for battle staff), Green Flag exercises (for EC), EC and battle management courses, and USAF Air Ground Operations School (USAFAGOS). USAFAWC operates specific Air Force complexes used for training and testing of Air Force systems and procedures: the C3I complex, Air Force subscale and full-scale aerial target assets, and the USAFAGOS. USAFAWC manages William Tell (the biennial worldwide Air Force air-to-air weapons meet). The Center conducts day-to-day management and execution of ACC war gaming responsibilities, with policy and commitment of ACC resources approval authority remaining with HQ ACC/DO.

SPADATS
(20th SPSS)

Mission Statement: The AN/FPS-85 Radar is a phased array radar with a mission of Spacetrack. Detects and tracks about 95% of all man made objects that come through the radar's coverage. The radar is connected by data links to the Cheyenne Mountain Complex in Colorado Springs, Colorado and to NAVSPOC in Dalghren, Virginia. The system is driven by software consisting of IBM assembly code and FORTRAN. The software is currently under contract to be rehosted to the IBM 9000 MVS/ESA operating system.

Unique Capabilities: This radar has supported NASA missions; shuttle tracking, fence studies, ODERACS, SED II. The Early Warning Mission software was removed that would allow the tracking of sea-launched ballistic missiles.

Outside Customers Supported:

1. ICACS - Cheyenne Mountain Complex
2. NAVSPOC - Naval Space Surveillance, Dalghren, VA
3. MIT/LL - Massachusetts Institute of Technology
4. NASA - Houston, TX

NAVAL EXPLOSIVE ORDNANCE DISPOSAL SCHOOL

Mission Statement: A jointly-staffed (Army, Navy, Air Force, Marine Corps) school providing specialized Explosive Ordnance Disposal training to officer and enlisted personnel of all services, both U. S. and foreign, and to selected civilian officials, in the best methods and procedures for the detection, identification, render safe, recovery, evaluation, and disposal of explosive ordnance, surface and underwater, conventional and nuclear, employed by the U. S. and other nations.

Unique Capabilities: The EOD School supports test activities by rendering safe or removing unexploded ordnance from various land and water test ranges.

FREEMAN COMPUTER SCIENCE CENTER

Test and Analysis

Provides the mathematical and software engineering services required for the measurement, reduction, and analysis of test data, both in real time and post mission, for the 46th Test Wing and for AFDTC tenants. Designs, develops and implements the AFDTC Test Range

FREEMAN COMPUTER SCIENCE CENTER (Continued)

Central Control Facility (CCF), Telemetry Facility (TELEMAG) and Image Processing Facility. Provides a broad base of mathematical and statistical and computer expertise for the development of data reduction methodology, for the engineering of data reduction and analysis software products, for the design of tests and experiments, and for the analysis of test and experimental data.

No other facility has the integrated capability of telemetry, control radar, threat sites, surveillance radar, and photo-optics in a single location for open air real time testing. The computational capability of the facility allows many data products to be available for the customer as soon as the mission is complete.

The CCF is designed for commonalty/compatibility with DoD instrumentation systems such as GPS, SAI, and Common Airborne Instrumentation. The facility is currently used by other DoD services and US Allies on a regular basis.

Systems Technology

Designs, develops, implements, operates and maintains the AFDTC Scientific Computer Center and its networks. Provides a broad base of expert computer and system engineering consultants. Provides software engineering support for the Eglin scientific and engineering community including development, customization and adaptation of graphics, applications, and system software products. Develops software products for the simulation and/or control of weapon or related systems as required for RDT&E. Operates and maintains the Eglin Decision Support System and the CRAY YMP Supercomputer.

The computer center has a CRAY YMP supercomputer and visualization laboratory, consisting of a 1 Gigabit network to the CRAY, Silicon Graphics workstations, video recording and printing equipment, to aid in the rapid analysis and presentation of simulation data. The center is a node on the Defense Research Engineering Network (DREN).

This is a general purpose computer center that supports all phases of digital models and computer simulations. It is available to all DoD agencies. The largest current user is the Aeronautical Systems Center.

Gulf Range Drone Control Upgrade System (GRDCUS)

This Division is responsible for system development of the Gulf Range Drone Control Upgrade System (GRDCUS) system and related systems. This system is a multifunction command and control, tracking, and data link system capable of supporting DT&E and OT&E air-to-air missions over the Gulf. The system supports the control of multiple drones flying independently or in close formation.

FREEMAN COMPUTER SCIENCE CENTER (Continued)

Develop target control software for automatic control of multiple targets, aerial or ground.

Develop real time computer systems that control targets and provide real time Time Spaced Position information (TSPI) for targets and other mission participants, missiles, shooters, relay platforms, ground vehicles, and helicopters.

Support the Target Acquisition agencies to define target control requirements, support testing and systems engineering.

Provide capability to use Global Positioning System (GPS) receivers to provide real time TSPI data for test mission use.

SAFETY

Mission Statement: Provide the Commander, AFDTC, with a coordinated and integrated safety program. Provide accident prevention guidance and technical safety support for Eglin military and contractor agencies. Develops and provides safety training and education, investigates and reports accidents/incidents. Maintains safety survey effort and assures acceptable range safety for all activities conducted under purview of the Commander, AFDTC, according to AFMCR 127-8. Implements the AFDTC system/munitions safety program in conformance with AFR 127-6 and AFDTCR 127-3 and supplements. Assigns explosive hazard classifications for munitions developed or stored at AFDTC and certifies technical data from safety standpoint. Interfaces during all phases (test planning, aircraft modification, flight profile approval, and mission conduct) of multi-national and multi-service weapons test programs to ensure the flight safety directives and principles are adhered to. Safety officers maintain currency in a mission aircraft.

Unique Capabilities: Real-Time Processing Systems: Safety real-time mission analysis and control is provided at the Central Control Facility (CCF) located in building 380. The CCF is designed to provide state-of-the-art analysis and control resources which are needed to satisfy AFDTC's real-time test support requirements through the 1990s. The general-purpose computers which support the CCF have access to most of the range data sources [radars, telemetry, the Gulf Range Drone Control Upgrade System (GRDCUS), and TPX-42]. Real-time application programs process data collected during missions to provide real-time analysis and control information. These computer resources, displays, and system flexibility are sufficient to support many different types of missions simultaneously.

INSTRUMENTED AIRBORNE PLATFORMS

Mission Statement: Instrumented aircraft are required to support the test and evaluation of munitions, electronic combat, communications computers command control and intelligence (C4I) systems, and inertial navigation/guidance systems in the Open Air Arena.

Unique Capabilities: Aircraft instrumentation provides time, space, position information (TSPI), platform specific information (avionics/weapons data), and test specific information (environmental/infrared/separation data). Instrumentation data can be provided real time (via telemetry (TM) transmitters and/or data links) and/or post mission (via analog data tape recorders, video tape recorders and film cameras). The TM stream is usually the PCM (pulse code modulation) output of a data acquisition system which collects and conditions the various analog and digital signals. The oldest data systems are the programmable Data Acquisition System (pDAS) and the Airborne Test Instrumentation System (ATIS). Until the Common Airborne Instrumentation System (CAIS) is available, the Advanced ATIS system (AATIS) is presently being installed. The main sources of digital data are the aircraft's busses, avionics, weapons, ECM, and display. This data can be recorded selectively or totally. Cockpit displays (HUD/VSD/TEWS/RWR/MFD/etc) are recorded on video tape recorders (video cameras may be required if display signal is not TV (RS-170) formatted). 1553 bus data or other PCM information may be formatted/conditioned (Merlin system) to a TV format for video tape recording. Analog tape recorders are the MARS 1400 (14 track, 14" reel), MARS 2000 (14 track, 10" reel), and the MARS 2028 (28 tracks, 10" reel); video tape recorders are the NAC (VHS) and the new TEAC (Hi 8 mm); digital recorder is the MARS II. A Time Code Generator (TCG) provides IRIG (Interrange Instrumentation Group) time for time correlation of analog, digital, film and video data. Store separation data is provided by 16 mm film cameras which are installed in aircraft fairings and/or carried on store stations. Airborne TSPI sources are a radar transponder (beacon), user GPS, or RAJPO GPS. The GPS data can be recorded or it can be transmitted via the MTACS (Multilateration Tracking and Control System) data link. Telemetry and video streams are encrypted before transmission.

Various types of instrumented pods/shapes are carried on the platform's store stations. Power and control wiring is either installed or standard aircraft wiring is utilized. The Golden Bird Missile is an instrumented AIM-7; the ARTIS pod contains an instrumentation radar for relative TSPI; I-HAWK and SADS VI M/1 are threat simulator pods; the BASES, SAIMS, and ASIMS are infrared (IR) pods; GPS/MTACS pods contain the RAJPO HDIS receiver combined with the MTACS data link. Two F-15B aircraft have an instrumentation 1553 bus specifically installed to control instrumentation pods. ACES II, ITV, and IMV are instrumented AMRAAM shapes/pods. Cruise missile pods may also be carried on the F-15 and F-16.

Listed below are the 46TW and AWC aircraft already modified, in process of being modified, or will begin modification this FY.

INSTRUMENTED AIRBORNE PLATFORMS (Continued)

C-130

C-130A 55-0022: Airborne platform for DT&E of air-to-ground and air-to-air seekers and sensors (visible, IR, MMW), stabilized turret, beacon, GPS

F-111

F-111E 67-0118: Film cameras, cockpit video camera, VTR (Hi 8 mm), TCG, beacon F-111F 70-2379: Flutter instrumentation, film cameras w/FDRS, video cameras for separation, ATIS, MARS 2000, TCG, Beacon, VTR (Hi 8 mm)

F-111F 70-2400: Film cameras w/FDRS, AATIS, TCG, user GPS w/MTACS, Beacon, MARS 2028, TM

F-15

F-15A 76-0101: JTIDS, HUD/VSD/MPCD VTRs(Std TEAC, NAC), TCG, MARS 2000, pDAS, Beacon, TM

F-15C 84-0011: JTIDS, HUD/VSD VTRs(8 mm), MPCD VTR(NAC), TCG, MARS 2000, pDAS, TM, Beacon

F-15A 77-0064: Film cameras, HUD/VSD Video Cameras & VTRs(8 mm), TCG, MARS 2000, pDAS, Beacon, TM, partial Golden Bird

F-15A 76-0116: High Speed Radar Buffer Box, ITV Pod, TCG, Beacon, MARS 2000, pDAS, VTR(NAC), TM

F-15B 73-0114: MSIP B FOT&E, HUD/VSD/MPCD/RWR VTRs (Hi 8 mm), TCG, pDAS, Beacon, TM

F-15B 75-0080/84: 1553 Instrumentation Bus, HUD/VSD/MFD VTRs (NACs), TCG, pDAS, MARS 2000, Beacon, TM, Pods: ARTIS, I-HAWK, SADS VI M/1, BASES, SAIMS, ASIMS, Golden Bird

F-15B 77-0161: High Speed Radar Buffer Box, PSP/RSP Radar, TCG, pDAS, HUD/VSD cameras, VTRs (Hi 8 mm), TM, Beacon, Film Cameras on Station Adaptors, pods: Golden Bird, ARTIS

F-15C 84-0018: AMRAAM Instrumentation, TCG, pDAS, MARS 1400, TM, Film Cameras, Beacon, HUD/VSD VTRs (8 mm), pods: ACE II, ITV, IMV, partial Golden Bird.

INSTRUMENTED AIRBORNE PLATFORMS (Continued)

F-15 (Continued)

F-15C 85-0126: AMRAAM/TEWS Instrumentation, HUD/VSD/TEWS Video Cameras & VTRs (8 mm & NAC), Film Cameras, pDAS, TCG, TM, MARS 2028, encrypted/transmitted ALR-56C FTI data, Beacon, pods: ACE II, IMV, partial Golden Bird.

F-15C 80-0022: AMRAAM/TEWS/JTIDS instrumentation, AATIS, MARS 2028, MARS II, TCG, TM, Beacon, pods: partial Golden Bird (In design)

F-15C 78-0542: TEWS Instrumentation, HUD/VSD/TEWS Video Cameras & VTRs (NACs), TCG, pDAS, TM, Beacon, MARS 2028, pod: partial Golden Bird

F-15D 84-0045: AMRAAM Instrumentation, Film Cameras, HUD/VSD Video Cameras & VTR (NAC), High Speed Radar Buffer Box, pDAS, TCG, TM, Beacon, pods: ACE II, ITV, DMV
F-15E 86-0185/0188: SEEK EAGLE/TEWS/AMRAAM Instrumentation, Film Cameras, MPDP VTRs (Hi 8 mm), TCG, pDAS, TM, MARS 2028, encrypted/transmitted ALR-56C FTI data, beacon, video TM

F-16

F-16A 80-0609: AMRAAM Instrumentation, Film Cameras, Hud/REO Video cameras & VTRs (NACs), pDAS, MARS 2000, TCG, TM, Dual HUD capability, partial OCU, Beacon, Total A&W bus recording, pods: ATLIS II, RDIP, RUBIS, ASRAAM (In Design)

F-16A 80-0761: AMRAAM Instrumentation, Film Cameras, HUD/REO Video Camera & VTRs (NACs), pDAS, MARS 2000, TCG, TM, Beacon, ADF capable, pods: ACE II, Musketeer Lee, ASRAAM (In design)

F-16B 78-0104: INS Fighter test bed.

F-16B 82-1037: Film Cameras, TCG, Beacon

F-16B 83-1123/88-0353: Flutter & Loads, Flutter Exciter Panel, Film Cameras, pDAS, TCG, TM, MARS 2000, HUD/RMFD or LMFD VTRs (NACs), Beacon, pods: RDIP (123 only)

INSTRUMENTED AIRBORNE PLATFORMS (Continued)

F-16 (Continued)

F-16C 83-1163: AMRAAM Instrumentation, Film Cameras, HUD/REO Video Cameras & VTRs(NACs), pDAS, TCG, MARS 1400 or 2000, Beacon, TM, pod: ACE II

F-16C 84-1280/1285: AMRAAM Instrumentation, Film Cameras, HUD/MFD/RWR Video Cameras & VTRs(NACs), MARS 1400, pDAS, TCG, TM, Beacon, chaff/ flare monitor, pod: ACE II

F-16C 88-0441: AMRAAM Instrumentation, Film Cameras, RWR video camera, Total Bus recording, HUD/LMFD/RMFD/RWR VTRs (Hi 8 mm), TCG, pDAS, TM, ALE-47 instrumentation, Beacon, pods: IMV, DMV, JSOW, ACE II

F-16C 89-2070: ALE-47 Instrumentation, RWR video camera, HUD/LMFD/RMFD/RWR VTRs(NACs), TCG, pDAS, TM, Total Bus recording, Beacon, pods: ACE II

F-16C 90-0726: ALQ-126B

F-16D 80-0844/0848: HUD/MFD/RWR VTRs(Hi 8 mm), Total bus recording A/B/C/D/EW/W busses (Merlin, Hi 8 mm), HARM & ALIC PCM recording (Merlin, Hi 8 mm), TCG, Beacon (In design)

F-16D 88-0469: NAC Recorders

F-16D 90-0835: AMRAAM Instrumentation, Film Cameras, HUD/MFD/RWR/HELMET/HAND-HELD VTRs (Hi 8 mm), AATIS, TCG, MARS 2028, Total Bus recording, user GPS 422 monitor, user GPS w/MTACS, encrypted video, beacon, TM, pods: ACE II, RDIP

F-16D 80-0836: HARM Instrumentation, Film Cameras, HUD/MFD/RWR VTRs(Hi 8 mm), AATIS, TCG, MARS 2028, Total Bus recording, user GPS 422 monitor, user GPS w/MTACS, encrypted video, TM, beacon, pods: RDIP, ACE II

UH-1

UH-1N 69-6617/6626: BASES Pod, Aerial Ignition Device, beacon

AVIONICS

Mission Statement: The F-16 AIS Shop is responsible for off-equipment Intermediate level maintenance and support of F-16 Line Replaceable Units (LRUs). Does software loading of Operational Flight Programs, TCTOs, modifications, calibrations, and testing of F-16 LRUs. Responsible for testing weapons, instruments, and ALR-69 systems using AIS test equipment. Maintains four test stations and ancillary equipment by performing inspections, modifications and repairs.

The F-15 AIS is responsible for testing F-15 LRUs including weapon control radar, inertial navigation, heads-up display, automatic flight control, instrument, and communication and navigation systems. Uses, maintains, and calibrates avionics intermediate shop test stations used to repair F-15 LRUs. Performs off-equipment maintenance and line delivery of AXQ-14 and Improved Data Link pods.

The Conventional Avionics Shop is responsible for intermediate and organizational level maintenance on avionics systems installed on UH-1N helicopters and transient aircraft. Performs intermediate level maintenance of CommNav, Guidance, and ECM systems on assigned aircraft. Modifies, repairs, loads, and operationally checks ECM pods on F-15, F-16 and F-111 aircraft to support test missions. Repairs and modifies communication ground cords, headsets, and emergency survival radio/beacons for Eglin units. Maintains, installs, and repairs radio ground mount adapters for emergency and operations vehicles on Eglin. Operationally checks all UHF, VHF, and RWR antennas for serviceability.

The Sensor Test Shop is responsible for on-equipment and off-equipment maintenance of all assigned and transient sensor systems. Performs intermediate and organizational level maintenance on LANTIRN targeting and navigation and PAVE TACK Laser Target Designation pods. Maintains intermediate level test equipment including the LANTIRN mobility shelter set. Performs intermediate level maintenance on Airborne Video Tape Recorders and Cockpit Television Systems, to include phase inspection work cards. Assists field engineers in the kit proofing, validating and fielding of new systems and/or upgrades to current systems.

The Radar Test Shop provides intermediate level repair of F-15 and F-16 radar and other avionics and components. Reprograms various avionics and other computers. Refurbishes F-15 and F-16 flight control and INU batteries. Performs operational checks for serviceability of F-15 and F-16 radar LRU's. Provides repair and functional checks of F-16 ARC-164, ARC-186, and ARN-118 receiver/transmitters, throttle grips, side stick controllers, GPS receivers and numerous F-16 control units. Repairs various circuit card assemblies by troubleshooting and replacing electronic components as required. Provides software testing to Test Wing agencies on Eglin AFB.

Unique Capabilities: Maintains full F-16 and F-15 radar mockups with capability to troubleshoot and repair parts in concert with associated avionics intermediate stations (AIS). A Huntron Tracker is on hand to repair circuit cards. A LANTIRN Mobile Support Shelter and a PAVE-TACK repair test set are also available.

AVIONICS (Continued)

Outside Customers Supported:

1. Air Force Armament Museum
2. Vitro Services
3. 33rd FW (ACC)
4. 9th Special Operations Squadron
5. 728th Tactical Control Squadron

JTIDS GROUND TECHNICAL FACILITIES/SUPPORT EQUIPMENT

ENHANCED JTIDS SYSTEM EXERCISER (EJSE)

Mission Statement: The EJSE was developed to test and evaluate JTIDS.

Unique Capabilities: Provides monitoring, control functions, and real-time message generation. Supports test analysis through its data printout and tape playback capability. Prepares simulation tapes to match a wide range of operational and test scenarios. Emulates individual tactical elements, such as a small radar-equipped surveillance site, and can perform rate-aided manual tracking. With an antenna mounted on a 90-foot pole, the EJSE can communicate with aircraft on the Eglin Ranges, and with the ASIT at Hurlburt Field.

Outside Customers Supported:

1. JTIDS Joint Program Office, Hanscom AFB, MA.
2. Joint STARS Program Office, Melbourne, FL.
3. ABCCC Program Office, Hanscom AFB, MA.
4. TMD Program Office, Hanscom AFB, MA.
5. 727th Air Control Squadron, Hurlburt Field, FL.
6. 728th Air Control Squadron, Eglin AFB, FL.

OPERATIONAL FACILITY (OPFAC)

Mission Statement: The OPFAC is an F-15 Multistage Improvement Program (MSIP) Operational Flight Program (OFP) Avionics Integration Bench. It was originally intended for the pre-release verification of new aircraft software.

JTIDS GROUND TECHNICAL FACILITIES/SUPPORT EQUIPMENT (Continued)

Unique Capabilities: Provides the capability for the complete manipulation of any aircraft parameters to allow for the trapping or simulation of special circumstance events. OFP monitoring is available, as well as single step execution to enable software debugging. A JTIDS scenario assembler is included in the OPFAC, enabling it to be used to conduct JTIDS software testing, demonstrations, and pilot training.

Outside Customers Supported:

1. JTIDS Joint Program Office.

JTIDS INTEGRATION "HOT" BENCH & JTIDS INTERFACE TEST SET

Mission Statement: Provides a means for testing each JTIDS terminal prior to installation in an aircraft. It also supports laboratory analysis of any JTIDS problems that may be experienced in the aircraft.

Unique Capabilities: Performs laboratory testing of the JTIDS terminals. Consists of shelves with brackets for mounting and securing the terminal under test, and 28 Volts DC and 115 Volts AC/400 HZ power sources. The Hot Bench has fans for cooling the terminal, and a test panel for testing each operating function of the terminal. The Interface Test Set can simulate TACAN inputs, and can provide JTIDS voice. The Hot Bench can also monitor the local Eglin TACAN through the JTIDS terminal's internal TACAN. Since the Hot Bench has no Heading Situation Indicator (HSI) to display the TACAN range and bearing, the TACAN functions are displayed on a computer screen.

Outside Customers Supported:

1. JTIDS Joint Program Office.

MULTILATERATION SYSTEMS & GPS

Mission Statement: Provides a time-space-position-information (TSPI) capability to support customer needs. While providing TSPI of up to 20 aircraft or ground vehicles, up to 6 vehicles can be remotely controlled. Airborne pods provide TSPI from multilateration and/or GPS/inertial reference. A synchronized A/C and remote controlled target test capability is provided at a central control facility (CCF).

MULTILATERATION SYSTEMS & GPS (Continued)

Unique Capabilities: Uses the resources of the Gulf Range Drone Control Upgrade System (GRDCUS) to provide a wide area test arena, including over-the-horizon, over Eglin, Tyndall and the South East Test and Training Area (SETTA). IFF radar data can also be shared with MTACS. Two data link frequencies are available for simultaneous missions each having the number of participants mentioned in the above statement.

Outside Customers Supported:

1. AFOTEC
2. USAF AWC
3. U. S. Navy
4. U. S. Army
5. Various foreign governments

AIRBORNE SYSTEMS/INSTRUMENTATION

Mission Statement: Designs, develops and procures airborne instrumentation systems for installation on aerospace vehicles and airborne threat simulators. Performs T-2 (Class II) modification support and post modification calibration and checkout. Provides pre/postflight instrumentation support for test missions.

Unique Capabilities: The unique capability provided is the design, procurement, installation and support of aircraft instrumentation systems, i.e. the requirement-to-requirement support of highly instrumented T&E aircraft. Based on the given requirements, the system engineers design instrumentation systems utilizing standard instrumentation subsystems, where possible, for quick turnaround and best maintenance support. Procurement of the system components is then initiated. This may entail contacting potential vendors, writing specifications and Justification Review Documents, and evaluating bids. Next is the creation of the instrumentation modification package, it's installation, and it's checkout. "Standard Operating Procedures" detailing instrumentation operation during pre/postflight checkout are written and the aircrew is aided in writing the Partial Flight Manual Supplement. Instrumentation systems collect various types of data for real time transmission (after encryption) and/or onboard recording. One type includes avionics/weapons/electronic warfare/display buss information and sensor data (strain gauges, accelerometers, etc). Aircraft displays (Hud, VSD, RWR, etc) are tape recorded and transmitted, if desired. Film cameras record store separation and a radar transponder enhances radar tracking. All data and events are time correlated with IRIG time. Engineers and electronic "bench" technicians maintain, calibrate, and repair the various instrumentation subsystems utilizing special "hot" benches. System engineers and electronic "preflight" technicians also checkout and setup the instrumentation before flight and download tape recorders and pods after flight.

METEOROLOGICAL INSTRUMENTATION

Mission Statement: Meteorological support for AFDTC is provided through the 46th Test Wing Weather Squadron which provides 24-hour weather forecasting services including preflight weather briefings, pilot-to-forecaster services to aircraft in the area, and weather warnings and advisories.

Unique Capabilities: Provides specialized weather services to both host and tenant units. The Test Meteorological Office provides consultation on the meteorological environment consisting of physics, chemistry and the dynamics of the atmosphere. Provides ME instrumentation at permanent, semi-permanent, and temporary sites, using mobile equipment when necessary. A full range of ME data are gathered to measure the following: wind vector, atmospheric temperature/pressure, relative humidity, dew point, rainfall amount/rates, visibility, visual range, cloud bases, solar radiation, particle size distribution, rainfall size distribution, extinction coefficient, density, defractivity, height, atmospheric electric field, etc.

"SPECIALIZED" ELECTRONIC SYSTEMS FLIGHT

Mission Statement: Provides AFDTC with a complete in-house capability for developing unique TSPI and remote-controlled systems.

Unique Capabilities: Provides electrical and mechanical engineering, design and fabrication services for simple to very complex one-of-a-kind systems. The functions of the flight include:

1. **Electrical and Mechanical design, prototyping, and end-product fabrication of the various sub-systems involved.**
2. **System integration and testing**
3. **Preparation of technical specifications and engineering evaluation reports**
4. **Engineering consultation to AFDTC agencies as well as outside agencies on TSPI, remote control, TM, RF and antennas**
5. **Personnel expertise and equipment to perform the mission**

Outside Customers Supported:

1. **ASC**
2. **Tyndall AFB**
3. **WSMR**

ELECTRONIC DESIGN AND DEVELOPMENT FLIGHT

Mission Statement: Provides AFDTC with a system level capability for developing, integrating, and testing the specialized instrumentation and control systems required in support of all types of ground and flight testing. This in-house capability spans the entire process of acquiring such systems: from "development of requirements" to "design" to "build-up" to "testing" to "installation and training".

Unique Capabilities: The uniqueness of the Electronic Design and Development Flight is its broad based expertise which allows it to perform its mission (in-house development) in a quick response mode without outside support. Equally important is its capability to remain flexible to changes in requirements during the development process with minimal impact on schedule.

Outside Customers Supported:

1. USAF AWC
2. Aeronautical Systems Center
3. AFOTEC
4. U. S. Army
5. U. S. Navy
6. Various foreign governments

AIRCRAFT SYSTEMS/DESIGN AND MODIFICATION

Mission Statement: Designs, installs, and documents the buildup of aerospace vehicle T-2 modifications and airborne threat simulators. Maintains configuration management records on these modifications.

Unique Capabilities: The 46 Test Wing has the capability and the facilities necessary to perform the entire T-2 modification process. The aero-engineering section has all the various skills required: aero-engineers, mechanical engineers, electrical engineers, aero-technicians, and electronic technicians. These personnel (working with an assigned systems engineer) perform the aero/mech/elec design of all in-house T-2 modifications and approve/review all contractor provided T-2 modifications. In conjunction with the system engineer, a cost/man-hours estimate is provided to the customer. Aircraft technical orders, military standards and specifications, equipment manuals are researched. The aircraft to be modified is examined for available space for installing instrumentation and detailed measurements are taken. Then, utilizing engineering workstations with computer aided design (CAD) and computer aided engineering (CAE) software, structural and electrical drawings are created. Aerodynamic/structural analyses are performed. All

AIRCRAFT SYSTEMS/DESIGN AND MODIFICATION (Continued)

material, mechanical and electrical, are researched for part numbers and other ordering information and a list is provided for procurement.

Work orders are generated and sent for mechanical fabrication and then returned for electrical wiring and component installation. Electrical engineers approve the electrical drawings and perform an electrical loads analysis to prevent overloading any portion of the aircraft's power generation and distribution system. The modification engineer provides written instructions, guidance, and other pertinent documentation which constitute the T-2 modification package. With shop support (sheet metal, machine shop, etc) and electricians, dock chiefs direct the T-2 modification installation. The installation is monitored throughout by the modification and system engineers.

Outside Customers Supported:

1. USAF AWC

AIR-TO-AIR MISSILE MAINTENANCE FACILITY

Mission Statement: Provides the necessary expertise and direction for all missile related activities. Coordinates between Weapons System Evaluation Group (WSEP), Advanced Medium Range Air-to-Air Missile (AMRAAM), and numerous other test and development projects to provide work space, equipment, and technical knowledge, enabling continuous operations. Provides in-depth training to all assigned personnel to ensure management of seven missile systems(AIM-7, AIM-9, AIM-120, AGM-45, AGM-65, AGM-84, AGM-88). Ensures proper management of the Tactical Missile Reporting System (TMRS). Provides periodic maintenance and management of over 70 pieces of missile support equipment. Performs periodic safety inspections ensuring all safety practices are enforced. Provides a quality product to the customer. Provides essential on-the-job- training to assigned personnel.

Unique Capabilities: Performs maintenance and inspection on telemetry units of AIM-9L/M and AIM-7M. Completed action on unpublished Time Compliance Technical Order on AIM-120 Advanced Medium Range Air-to-Air Missile.

Outside Customers Supported:

1. Air Warfare Center
2. Weapons System Evaluation Program (WSEP)
3. Hughes Corporation
4. Raytheon Corporation

AIR-TO-AIR MISSILE MAINTENANCE FACILITY (Continued)

5. China Lake Depot
6. Georgia Tech Research Institute
7. Harris Corporation
8. Atlantic City Air National Guard

AIR-TO-GROUND MISSILE MAINTENANCE FACILITY

Mission Statement: Used for the assembly, final integration testing, and inspection of guided weapons prior to flight testing. The facility is fully staffed and equipped to support the T&E of the integration of fuzes, warheads, actuators, data links, IMU/GPS, propulsion, airframes/structures, hardware/software, guidance/control, weapons sensors, and flight termination systems. Additionally, build-up and modification of bombs/missiles, as well as integrated systems tests, are performed at this facility. The test chambers in building 999 are rated for Category 1 explosives.

PRECISION MEASUREMENT EQUIPMENT (PMEL) LAB

Mission Statement: Responsible for the maintenance, calibration and certification test, measurement and diagnostic equipment designated Type II, Type III and Type IV PMEL support. Responsible for the calibration and repair of signal generating, waveform measuring, and frequency counting, voltage, current, resistance, inductance, and power measuring instruments, mechanical, electro-mechanical, dimensional and radiation measuring equipment. Responsible for the calibration and repair of F-15 and F-16 Avionics Intermediate Stations

Unique Capabilities: One of the largest PMELs in the Air Force and the regional facility servicing Northwest Florida. Has an active program currently developing automated calibration testing of equipment.

Outside Customer Supported:
1. 919th Special Operations Wing
2. OSD JADO Program
3. USAF AWC
4. AFOTEC
5. Naval EOD School
6. Vitro Services

PRECISION MEASUREMENT FACILITY
SITE III MASS PROPERTIES

Mission Statement: Performs the weight, center of gravity, and moments of inertia measurements on munition and non munition items. Performs reballast procedures on munition and non munition items to provide the test engineers with a reliable product. Performs maintenance and operation of the portable mass properties machine. Used for the world wide field review measurement of stores (FRMS) operation. Mass properties data collected at various bases is put into the mass properties data program for updating the stores technical and mass properties data bank (STAMP), This ensures the project engineers have the proper mass properties data. Performs assembly/disassembly of munitions items for the purpose of adapting the items to the test set. Develops procedures for efficiency and safety of operations on new prototype test items.

MUNITIONS BUILD-UP

Mission Statement: Operates six indoor maintenance/build-up facilities totaling 54,000 square feet and 2 outdoor holding /build-up areas totaling 27,000 square feet. The missile section performs build-up of Air-to-Air, AIM-4, 7, 9, and 120 missiles and Air-to-Ground, AGM-45, 65, and 88 missiles. The conventional munitions maintenance shops perform build-up of expendable aircraft countermeasures, cannon ammunitions, GBU-10, 12, 15, 16, 24 and 28 guided bombs, CBU-58, 87 89 and 97 cluster bombs, MK-82, 83, 84, M-117 and 118 general purpose bombs, MC-1 and TMU-28 chemical weapons, nuclear training shapes and BLU-107 cratering bombs.

MUNITIONS STORAGE AND HANDLING

Mission Statement: Provides the capability for storing and handling over 2,000 different types of munitions used to support DoD and foreign allies test and development projects, and 50 tenant unit munitions supply points. Responsible for inspection, minor maintenance and house keeping on 35 facilities within the 297 acre munitions storage area. Ensures correct storage and compatibility of munitions are maintained in strict compliance with all explosive safety standards. Total munitions storage capacity is 121,729 sq. ft. and total sited net explosive weight (NEW) authorized is 2,287,900 pounds. Capable of storing various sizes of munitions ranging from small arms ammunition to the Tomahawk cruise missile; maximum size of any one item to fit into storage structures would be no greater than 15,000 NEW and a dimension of approximately 18' x 10' x 10'. Provides logistical support to 500 test projects and five different maintenance sites within the munitions storage area. Directly supports several off-base test ranges on the 464,000 acre Eglin test complex. On a yearly basis, moves or delivers over 500 tons net explosive weight/1250 tons total weight of munitions covering more than 15,000 miles.

MUNITIONS STORAGE AND HANDLING (Continued)

Unique Capabilities: Receipt, inspection, storage, maintenance, buildup, shipping and delivery capability is provided for any US or foreign munition used or tested at Eglin AFB. Major munitions categories include both current inventory and prototype general purpose and cluster bombs; precision guided munitions; air-to-air and air-to-ground missiles, nuclear trainers, Navy cruise missiles, Army Hellfire missiles, expendable aircraft countermeasures and small arm/cannon ammunition. Additional items include various British, Norwegian, Israeli, and former-Soviet Block munitions. A technical data library with preliminary handling/maintenance data and interim hazard classification is maintained for prototype, modified and foreign munitions.

ARMAMENT MAINTENANCE SECTION

Mission Statement: Inspects and maintains all munition suspension equipment for the 46th Test Wing and the Air Warfare Center aircraft. To include pylons, bomb racks, launchers and adapters for weapons carriage on the F-15, F-16, and F-111 aircraft. Inspects and maintains guns and gun systems on the F-15 and F-16 aircraft, including removal and installation.

Unique Capabilities: Supports Ammo/Gun Test Range 22/C-64/C-74L with gun maintenance and support personnel on a daily basis. Advises test project personnel on modification requirements for AME. Maintains modified equipment for various test projects. Provides maintenance, repair and/or inspection for armament systems components owned by various military and civilian test agencies.

ALTERNATE MISSION EQUIPMENT SECTION

Mission Statement: Stores, controls and accounts for all munition suspension equipment for the 46th Test Wing and Air Warfare Center aircraft. Tracks all in-use equipment and schedules inspections through the maintenance section.

AIRCRAFT REPAIR ELEMENT

Mission Statement: Performs organizational, intermediate, and limited depot-level maintenance beyond the capability of other assigned maintenance activities. Accomplishes troubleshooting analysis, repairs, replacement, rigging, and operational and functional checkout of flight control systems, landing gears, air induction equipment, and canopy and windscreen assemblies. Provides capability for the

AIRCRAFT REPAIR ELEMENT (Continued)

recovery and reclamation of damaged and crashed aircraft. Maintains, inspects, and repairs all associated equipment required to accomplish the above mission.

Unique Capabilities: Performs flight control, landing gear, and canopy maintenance on any fighter aircraft in the USAF inventory. They are multi-aircraft qualified and perform intermediate and limited depot-level maintenance, tow target maintenance, and provide crash recovery services on any military or civilian aircraft without exception. Performs aircraft reclamation services on any type of aircraft and provide emergency response/crash recovery service to any aircraft over a three state area. Respond to all ground or inflight emergencies on Eglin and the Fort Walton Beach Regional Airport. Uniquely qualified to work with engineers performing class II modifications on aircraft and systems. Experience includes T-37, T-38, T-39, A-10, F-4, F-5, F-15, F-16, F-111, and UH-1 aircraft maintenance.

EGRESS

Mission Statement: Responsible for on-equipment and off-equipment maintenance on F-15, F-16 and F-111, Aircrew Egress Systems and components. Inspects, troubleshoots, bench checks, removes, tests, repairs, replaces, services, and modifies egress systems and components. Replaces transparencies and rigs canopies on F-16 aircraft. Provides egress system familiarization training as required for, life support, fire department, and personal working within the Test Wing. Provides support on transient aircraft, as well as support to the 33 FW (ACC) under the host tenant support agreement. Provides support to the Eglin Armament Museum as required.

Unique Capabilities: Due to the knowledge of civilians, the shop has the repair capability for F-15, F-16, F-111, F-4 and A-10 egress systems.

Outside Customers Supported:

1. 33rd Tactical Fighter Wing

FUELS

Mission Statement: Responsible for on-equipment and off-equipment maintenance on aircraft fuel and in-flight refueling systems and components. Inspects, troubleshoots, bench checks, removes, tests, repairs, replaces, services, seals, and modifies systems and components. Performs systems maintenance and servicing of Hydrazine tanks. Provides qualified support for emergency Hydrazine response teams. Maintains proficiency in detection of Hydrazine.

Unique Capabilities: The fuel system repair hangar is a state-of-the-art building and designed for that purpose. It has multi aircraft capability. It has indoor space for two, F-111/F-15 size aircraft, three F-16 size aircraft, of five UH-1N helicopters. The fuel hangar has indoor external fuel tank work area with a lifting hoist. This flight also has the regional hydrazine resource responsibility.

Outside Customers Supported:

1. USAF AWC
2. 187th Tactical Fighter Group, Montgomery, AL, Hydrazine Tank Servicing
3. 926th Fighter Group/XP, Naval Air Station, New Orleans, LA, Hydrazine Tank Servicing

PROPULSION

Mission Statement: Responsible for jet engine intermediate maintenance (JEIM) on General Electric F100-GE-100/129, J79-15, J85-100, Pratt and Whitney TF30-111 and 109, and FW100-PW-100/200/220 engines. Responsible for assembly and disassembly of F100 modular engines and sub-components. Responsible for JEIM on F-15 starting systems and secondary power system components to include testing after maintenance. Responsible for JEIM on GTCP-397 gas turbine compressors used in AM32A-60B auxiliary power units. Responsible for acquisition, modification and testing of surplus and time-expired engines to the J85-100 configuration for use in the BQM-34S target drone. Provides modified J85-100 engines to the BQM-34S manufacturer for installation into new target drones used by both the Air Force and Navy organizations. Operates the engine test cell which is used for troubleshooting and testing of the above mentioned engines as well as aircraft noise suppression systems and other engine test facilities. Maintains engine support trailers for engine removal/installation and transportation. Ensures adequate spare level to support flying mission of various types and models of F-15 and F-16 aircraft assigned.

PROPULSION (Continued)

Unique Capabilities: Provides full JEIM on F100-100/200/220/220A/220E, J79 and J85 engines. Hush House and twin test cells are available to test all engines. Currently modifying J85 engines for both Air Force and Navy to be used in BQM-34S target drones. Has a steam and citrus-based parts cleaner to minimize hazardous waste.

Outside Customers Supported:

1. Air Force Armament Museum
2. Vitro Services
3. 33rd Fighter Wing (ACC)
4. 9th Special Operations Squadron
5. 475th Weapons System Evaluation Group (ACC)
6. Naval Air Warfare Center

MACHINE SHOP

Mission Statement: Provides a Machine Shop for design, manufacture, modification and repair of RDT&E test items required to support AFDTC test programs of a non-repetitive nature. Manufacture Class II modification kits for installation. From engineer designs blueprints, utilizing CNC production equipment, provides a capability to manufacture prototype test items used by AFDTC engineers, scientists and contractors for various test projects. Provides an intermediate maintenance capability for support of all assigned, transient, and associate tenant aircraft.

Unique Capabilities: This shop is equipped with modern conventional toolroom and CNC machines. A CAD/CAM system is used for design and manufacturing with numerical controlled operations. The shop can machine single items up to 22 feet in length and 4,000 lbs in weight. Two CNC pantograph machines accomplish miniature milling and engraving using nine different fonts. Shop employees include machinist, tool makers and model makers that manufacture to tolerances of .0002 of an inch. Aircraft expenditures are reduced by in house repair of depot level repairable assets.

MACHINE SHOP (Continued)

Outside Customers Supported:

1. Air Warfare Center
2. 9 SOS
3. 919 (Duke Field)
4. Jet Mod. Drone Program

STRUCTURAL MAINTENANCE

Mission Statement: Provides a Structural Repair Shop for design, manufacture, modification, and repair of RDT&E test items required to support the AFDTC test program of a non-repetitive nature. Manufactures items and works with sheet metal and fiberglass in modifying bombs, missiles, rockets, robots, etc. Manufactures and installs class II modifications parts and kits on aircraft and missiles to include CNC production required by AFDTC engineers, scientists and contractors for development of the test projects. Provides an intermediate maintenance capability to support all AFDTC assigned, transient and associate tenant aircraft.

Unique Capabilities: Maintains operational support of multiple aircraft to include F-111's, F-16's, F-15's, UN-1H and full manufacturing capability for all aircraft tubing assemblies (to include Depot level lines).

Outside Customers Supported:

1. 9 SOS
2. Eglin AFB. 33 FW (ACC)
3. Tyndall AFB.
4. Hurlburt AFB.

METALS PROCESSING

Mission Statement: Provides a Metal Processing Shop for design, manufacture, modification, and repair of test items of a non-repetitive nature. Provides arc, oxy-acetylene, heliarc, tungsten inert gas (TIG) welding, cutting and soldering, used in the fabrication and repair of RDT&E test items required by AFDTC engineers, scientists and contractors for development of test projects. Provides heat treating of aluminum parts and sandblasting capability for the manufacturing and repair of test items. Provides and supports intermediate maintenance repair capabilities for support equipment and all assigned AFDTC, transient aircraft and support for the 33 FW.

Unique Capabilities: Manufacturing capability of environmental shelters that require the use of a large tube bending machine. Manufacture rocket sleds used in the testing of munitions. Support Class II modifications on assigned AFDTC aircraft and modification of the J-85 engines for drone project.

Outside Customers Supported:

1. Manufacture Environmental Shelters for VITRO
2. Manufacture stands and other related items for 9 SOS
3 Manufactured Sleds for Holloman AFB
4. Provide welding and manufacture for 728 ACS
5. Provide welding for Air Warfare Center test projects
6. Support 919 (Duke Field) in heat treating

CORROSION CONTROL

Mission Statement: Inspects and treats corrosion on aircraft, missiles, armament and other related equipment. Provides wash rack facilities to wash aircraft and aircraft parts. Provides a corrosion capability for performing intermediate maintenance and painting on assigned aircraft, age, and class II modification items. Provide RDT&E experimental coating for test engineers on tasks, drones, missiles, and radomes etc.

CORROSION CONTROL (Continued)

Outside Customers Supported:

1. Wright Laboratory - Armament Division
2. Navy EOD School
3. 9th SOS
4. Seek Eagle Program Office
5. Navy Coastal System Laboratory
6. 919 SOS
7. Mill Star Program

NON-DESTRUCTIVE INSPECTION

Mission Statement: Provides a capability to accomplish optical, penetrant, magnetic particles, ultra sound, eddy current, and radiographic inspections to determine component integrity and serviceability. Conducts experimental tests as to the integrity of RDT&E test designs and specifications. Provides oil analysis to determine wear metal effects on aircraft engines and oil wetted components.

Unique Capabilities: Multi-use facility, equipment, manpower, materials and training are shared equally with the 33rd Fighter Wing (ACC). The only known field level shop with two film processors.

Outside Customers Supported:

1. Air Warfare Center
2. 33d Fighter Wing
3. Wright Laboratory
4. 919 Special Operations

ELECTRO-ENVIRONMENTAL

Mission Statement: Responsible for off-equipment maintenance on aircraft electrical and environmental control systems and components. Inspects, troubleshoots, bench checks, removes, tests, repairs, replaces, services, and modifies systems and components. Provides battery servicing for assigned aircraft, associate tenant aircraft and ground support equipment. Responsible for field maintenance of all aircraft ground support equipment, (AGE), gaseous and liquid oxygen and nitrogen systems. Services life raft cylinders and emergency oxygen bottles, (Life Support Equipment), for all assigned and associate tenant aircraft.

Unique Capabilities: Possesses one of only three K400 generator test stands at field level, and will be only one of two sites in the world capable of running both F-111 and F-15 parts.

Outside Customers Supported:

1. **33rd Tactical Fighter Wing**
2. **9th Special Operations Squadron**
3. **728th Tactical Control Squadron**

PNEUDRAULIC

Mission Statement: Responsible for off-equipment maintenance of pneudraulic components. Inspects, troubleshoots, bench checks, tests, repairs, services, and modifies components. Provides local manufacture and testing of flexible hoses and testing of rigid tubing. Maintains associated Test Stands and support equipment.

Unique Capabilities: Possess two state-of-the-art pneudraulic test stands which allow check-out and repair of all current and projected pneudraulic systems. Because of this capability, depots have authorized depot-level repairs on a case-by-case basis. A citrus-based parts cleaner is used to minimize hazardous waste.

Outside Customers Supported:

1. **Air Force Armament Museum**
2. **33rd Tactical Fighter Wing**
3. **9th Special Operations Squadron**

PATTERNS AND PLASTIC

Mission Statement: Provides a Pattern and Plastic Shop for design, manufacture, modification, and repair of RDT&E test items required to support the test program of a non-repetitive nature. Manufactures items and works with fiberglass, advanced composites, wood, and plastics in modifying bombs, missiles, rockets, etc. Manufactures Class II modification parts and kits on aircraft and missiles. Provides an intermediate maintenance capability to support all AFDTC assigned, transient, and associate tenant aircraft.

Unique Capabilities: Capable of manufacturing and repairing shock mitigation system under the container development program. This operation facilitates a fully equipped Wood Shop with unlimited support of hardware for finished wood products. Also supports manufacturing of form blocks for aircraft parts in support of class II modification and repair of assigned aircraft. Manufactures various airborne radomes for missiles, rockets and aircraft components using engineer specifications. Fully capable of supporting all DoD aircraft operations.

Outside Customers Supported:

1. Drone Projects
2. Contractors VITRO, Raytheon, etc.

SURVIVAL EQUIPMENT

Mission Statement: Provides a parachute and survival equipment shop to manufacture, modify, repair, and design item constructed of fabric in support of RDT&E test projects of a non-repetitive nature. Provides an extended intermediate maintenance capability to support aeronautical equipment, parachutes, and other aircraft maintenance requirements for support of AFDTC assigned, transient, and associate tenant aircraft.

Unique Capabilities: This shop has the capability of servicing all personnel parachutes in the Department of Defense inventory. Capable of servicing the Advance Concept Ejection Seat (ACES II) employed on the A-10, B-52, F-16, and F-15 aircraft. Also currently the focal point for the Universal Water Activator Release System.

SURVIVAL EQUIPMENT (Continued)

Outside Customers Supported:

1. U. S. Customs
2. U. S. Army
3. U. S. Navy
4. U. S. Marine Corps
5. AMRAAM Program Office
6. Turkish Air Force

INSPECTION ELEMENT

Mission Statement: Performs maintenance on modified test aircraft undergoing various inspections such as phase, periodic, major, minor, hourly post-flight, and special inspections. Also performs scheduled and unscheduled maintenance. Removes, disassembles, inspects, repairs, reassembles, installs, and operationally checks all assigned aircraft. Determines the condition of airframe and engines and all associated equipment. Performs maintenance on specialized systems such as flight control surfaces, landing gear, and engines. Performs time changes, Time Compliance Technical Orders and special inspections as required by the mission. Performs pre-dock and post-dock meetings to coordinate requirements while in the inspection process.

Unique Capabilities: Capable of performing any of the inspections cited above on any model of F-111, F-16, F-15, F-4, T-38, F-5, UH-1N, or A-10 aircraft. Additionally, given the equipment, they are capable of performing the same inspections on any other Air Force, separate service, or foreign national aircraft. Performs consolidated maintenance with the Aircraft Modification Element. Recently completed phase inspections and minor aircraft modifications simultaneously, saving an average of six complete days of aircraft downtime on each occurrence. Concurrently perform Time Compliance Technical Orders and special/one time inspections during their phase inspections.

Given the personnel and equipment, six aircraft could be inspected simultaneously on a three shift operation. Unique to the Inspection Element are custom built dock boxes centrally located at the head of each dock within the hangar floor area. These dock boxes enable supervisors to have complete control over every aspect of the inspection/maintenance process. They are wired with telephones, CAMS computers, and electrical power.

WHEEL AND TIRE ELEMENT

Mission Statement: Performs turnaround maintenance on all wheel assemblies to directly support all AFDTC, AWC, and Air Rescue aircraft. Performs teardown, inspection, and buildup of all wheel assemblies to include cleaning and inspection of wheels and bearings, seals, and retainers. Ensures ample spare wheels and tires are on hand to accomplish missions requirements. Inspects and maintains all shop equipment associated with the wheel and tire element.

Unique Capabilities: Capable of performing tear down and/or buildup of wheel and tire assemblies on any A-6, A-7, F-4, F-5, F-16, F-15, F-111, C-130, T-38, T-39, H-60, H-53, Tornado, or Harrier aircraft. If given the equipment, capable of performing the same maintenance on any weapon system. Being a forward supply point enables them to interface directly with supply, thus facilitating a positive wheel and tire acquisition process. Works directly with the 46th EMS Corrosion Element when stripping of wheels is required.

Outside Customers Supported:

1. 33rd FW (ACC)
2. Duke Field
3. Hurlburt AFB
4. USAF AWC
4. British Aircraft

AEROSPACE GROUND EQUIPMENT

Mission Statement: Provides field maintenance, periodic inspections, special inspections, servicing, refueling and dispatch as well as technical order modifications on over 500 pieces of powered and non-powered AGE assigned to AFDTC. Provides supervision, production control, quality assurance and supply support for AGE activities. Performs engine teardown, buildup (overhaul) and repair of components, i.e. starters, generators, motors, relays, etc. Responds to trouble calls on equipment in use. Provides equipment operator training to customers. Performs servicing of aircraft oil and hydraulic carts. Collects and recycles waste petroleum products generated by aircraft maintenance. The equipment is, for the most part, the newest and latest designs in the Air Force inventory today.

Unique Capabilities: AGE has supported the latest aircraft in the inventory. For example: F-117A, C-17, RC-135, B-1 and B-2 bombers, E-3A AWACS as well as NATO aircraft such as the Harrier and Tornado. The capability also extends to all other services DoD wide

AEROSPACE GROUND EQUIPMENT (Continued)

which AGE will be able to support well into the year 2000. Provides test support to Army and Navy aircraft such as helicopters and Navy sea launch cruise missile tests. Provides specialized equipment to contractors and base facilities in support of new and state of the art munitions and electronic warfare testing.

(3.1.D.2) Are specialized targets required to support this facility? Yes/no. If yes, explain.

Yes.

Full and subscale aerial drone targets for testing air-to-air missiles and surface-to-air missiles can be provided. Specialized ship, boat, barge targets are fabricated or procured according to customer specification, as required.

(3.1.D.2.A) Have the specialized targets been validated? Yes/no. If yes, by whom?

Yes. When required, targets are validated by the T&E community, the customer, and by appropriate intelligence agencies.

(3.1.E.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.

Yes. Expandable with existing EWTAs or through MOA with Southeastern Test and Training Area (SETTA) partners.

(3.1.E.1.A) Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

Yes. Large surface area without constraints on falling debris for large footprint testing, aircraft qualification, Theater Missile Defense, and C4I testing.

(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.

Airspace-Yes. Eglin Water Test Areas may be expanded into the central Gulf of Mexico to support an expanded footprint for testing. Water-Yes, same explanation as "airspace"; Land-N/A.

(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. Up to Secret/Special Access Required.

(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, 95 FYDP I&M funds ($3.146M) to enhance/increase the capability to use GPS as a source of TSPI on the AFDTC ranges.

(3.1.F.1) Is this a one-of-a-kind facility within the DoD? Yes/no. If yes, describe.

Yes. Nineteen miles of AF-owned beach front property provide a unique land-sea interface with contrasting background/clutter environments (semi-tropic and forested) which is especially useful for Munitions and Electronic Combat Testing. AFDTC has control of 86,500 square miles of water range.

(3.1.F.1.A) Within the US Government? Yes/no. If yes, describe.

Yes. Nineteen miles of AF-owned beach front property provide a unique land-sea interface with contrasting background/clutter environments (semi-tropic and forested) which is especially useful for Munitions and Electronic Combat Testing. AFDTC has control of 86,500 square miles of water range.

(3.1.F.1.B) Within the US? Yes/no. If yes, describe.

Yes. Nineteen miles of AF-owned beach front property provide a unique land-sea interface with contrasting background/clutter environments (semi-tropic and forested) which is especially useful for Munitions and Electronics Combat Testing. AFDTC has control of 86,500 square miles of water range.

(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 FY93 by Military Department.

Yes.

ARMY		NAVY		OTHER	
FY92	FY93	FY92	FY93	FY92	FY93
0.47%	0.05%	7.03%	8.50%	3.14%	0.15%

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

101,731 ?

Air is 135,313 square miles (101,842 square miles are under direct control); land is 874 square miles (724 square miles are Government owned); and sea is 92,988 square miles, the Gulf Test Facility.

how much is DoD?

(3.1.G.2) Who owns and or controls the land under the restricted airspace you use?

? 91,988

Not applicable since the Gulf Test Facility is 92,988 square miles of water range over international waters.

(3.1.G.3) How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

By definition, there are no "Restricted" areas over international waters (3 NM offshore). All the airspace within the Gulf Test Facility, however, is either within a Warning Area (W-151, W-168, W-470, W-155) or over international waters. The altitude limits are surface to unlimited.

(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)? Dimensions? Will it support simultaneous users? Yes/no.

Yes. Testing of conventional air armament and electronic combat systems, launch of air-to-air, air-to surface, surface-to-air, and surface-to-surface missiles. Dimensions are listed below. Yes, it will support simultaneous users.

SUA	Area (Sq. Miles)	Altitude
W-151	11,140	Surface to unlimited
W-155 (155B)	5,498	Surface to unlimited
W-470	6,010	Surface to unlimited
W-168	9,970	Surface to unlimited
EWTA-1	9,250	Surface to unlimited
EWTA-2	18,385	Surface to unlimited
EWTA-3	16,735	Surface to unlimited
EWTA-4	9,970	Surface to unlimited
EWTA-5	5,040	Surface to unlimited
	91,998	

32,618

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

SUA	Over land (Sq. NM)	Over water (Sq. NM)
W-151		11,140
W-155		5,498
W-470		6,010
W-168		9,970
EWTA-1		9,250
EWTA-2		18,385
EWTA-3		16,735
EWTA-4		9,970
EWTA-5		5,040
		91,998

Land area from # 310 (ASTE) = 9736

9736 + 91,998 = 101,734

32,618 – Total Warning Area

Total Available = 59,380

1.32

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

There are no known or projected airspace problems.

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

Maximum straight line segment in Eglin controlled airspace is:

385 NM

(This is computed as a straight line from the southeast corner of EWTA-5 to the northwest corner of R-2915A)

Maximum straight line segment in Eglin available airspace is:

478 NM

(This is computed as a straight line from the southeastern boundary of warning area W-174B to the northwest corner of warning area W-155A).

(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.

Airways: J58-86, Gulf Route 26, A509 and A758 in the Gulf of Mexico. Tests conducted are: Cruise missile, long range missile and high speed targets. This airspace should be available for similar tests in the future.

(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/riverine, desert, and sea. State the area of each in square miles.

AFDTC's Gulf Test Ranges consist of approximately 93,000 square miles of open sea. Elevation is sea level throughout the entire range area with no ground cover or vegetation.

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

Not Applicable. The Gulf Test Ranges are all over water.

(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.

No.

(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?

Below 32 degrees F:	1 day
Between 32 and 95 degrees:	364 days
Above 95 degrees:	0 days

(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%?

Below 30%:	5 days
Between 30 and 80%:	330 days
Above 80%:	30 days

(3.1.H.6) What is the number of test missions per year (1985 - 1993) canceled due to weather?

FY		FY	
85	97	90	125
86	150	91	138
87	263	92	144
88	168	93	105
89	181		

total cancelled = ~~1047~~ 1274

(3.1.H.7) What is the number of test days per year (1985 - 1993) canceled due to weather?

1985-1991, & 1993: 0; 1992: 2.

(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?

Less than 1 mile:	0 days
Between 1 and 3 miles:	7 days
Greater than 3 miles:	358 days

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

355 days. This assumes ceiling and/or visibility are at least 1500/3 at some point during daylight (0600 to 1800L).

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

Less than 5%. Weapon test missions typically require weather minimums of 1500/3. For FY92, 4.92% of weapon test missions scheduled were cancelled due to weather and for FY93, 3.05%

(3.2.A.1) Do supersonic corridors or areas exist? Yes/no.

Yes. The ASTE and the Gulf Test Facility are the only supersonic Air-to-Surface Test Ranges east of the Mississippi River.

(3.2.A.2) Where are they located relative to your airfield?

AREA	DISTANCE FROM EGLIN
B-70	10 NM
W-151	22 NM
W-155	26 NM
W-170	114 NM
EWTA 1-5	117 NM
W-168	222 NM
W-174	317 NM

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

Over water supersonic areas: Surface to unlimited. (By local regulation, supersonic flights surface to 10,000 feet are conducted at least 25 NM offshore; supersonic flights above 10,000 feet are conducted at least 15 NM offshore.)

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

Over water: All airspace within the Gulf Test Facility. (By local regulation, supersonic flights surface to 10,000 feet are conducted at least 25 NM offshore; supersonic flights above 10,000 feet are conducted at least 15 NM offshore.)

(3.2.A.5) Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

There are no FAA restrictions. (By local regulation, supersonic flights surface to 10,000 feet are conducted at least 25 NM offshore; supersonic flights above 10,000 feet are conducted at least 15 NM offshore.)

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

Virtually unlimited. 92,988 square miles of airspace could accommodate hundreds of aircraft simultaneously.

(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.

1. **Number and Azimuth of Runways - 3 Runways:**
   a. **Runway 12/30 (Main Base)**
   b. **Runway 01/19 (Main Base)**
   c. **Runway 18/36 (Duke Field)**

2. **Elevation:**
   a. **Runway 12/30 = 85' MSL**
   b. **Runway 01/19 = 85' MSL**
   c. **Runway 18/36 = 193' MSL**

3. Runway Length (Excluding Overrun):
   a. Runway 12/30 = 12,000'
   b. Runway 01/19 = 10,000'
   c. Runway 18/36 = 8,000'

4. Overrun Length (Departure End):
   a. Runway 12 = 1,000'
   b. Runway 30 = 1,000'
   c. Runway 01 = 550'
   d. Runway 19 = 1,000'
   e. Runway 18 = 555'
   f. Runway 36 = 552'

5. Terminal/Landing Aids:
   a. Main Base - TACAN, ILS, VASI, ASR
   b. Duke Field - TACAN, ILS, VASI, ASR

6. Arresting Cable:
   a. Main Base - YES
      (1) Runway 12/30 - BAK-9, BAK-12
      (2) Runway 01/19 - BAK-12
   b. Duke Field - YES
      (1) Runway 18/36 - MA-1A

7. Ramp Area:
   a. Main Base = 4,723,758 SF (does not include 1,681,021 SF of transient ramp)
   b. Duke Field = 1,908,360 SF (does not include 182,074 SF of transient ramp)

8. Construction Material:
   a. Runway 12/30 (Main Base) - First 2,000 feet on each end is concrete. All other is asphalt.
   b. Runway 01/19 (Main Base) - All asphalt.
   c. Runway 18/36 (Duke Field) - All asphalt.
   d. Ramps - All concrete.

9. Load Capability - The runways will support any aircraft in the DoD inventory in their present condition.

10. Hangar Space:

MAIN BASE FACILITY #	ENCLOSED SPACE (SF)	
72	31,552	
102	38,440	
103	38,340	
110	57,546	
130	129,766	
138	14,866	
421	43,322	
422	43,322	(Currently used for storage using internal temporary dividers)
920	2,583	
1318	57,408	
1339	18,807	
1343	33,998	
1345	36,968	
1385	11,050	
1386	11,050	
	569,018	SF Total Enclosed Area

DUKE FIELD FACILITY #	ENCLOSED SPACE (SF)	
3020	23,876	
3025	58,846	
3029	22,373	
3150	37,488	
3057	33,834	
3087	23,409	
	199,826	SF Total Enclosed Area

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

Airfield	Distance (NM)
Hurlburt Field, FL	9
Duke Field, FL	10
Sikes Airport, FL	17
NAS Pensacola, FL	42
NAS Whiting Field, FL	30
Pensacola Regional, FL	34
Panama City-Bay Co Intl., FL	48
Tyndall AFB, FL	56
Mobile Regional, AL	80
Kessler AFB, MS	124
Gulfport-Biloxi Regional, MS	132
Danelly Field, AL	110
Maxwell AFB, AL	116
Lawson AAF, GA	138
Tallahassee Regional, FL	115

Any of Eglin's auxiliary airfields could be used in dire emergency situations.

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

Eglin AFB is located 7 NM from restricted areas, 9 NM from warning area W-151, and 100 NM from warning area W-470.

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

Eglin AFB is centrally located between two major restricted areas (R-2914A and R-2915A), distance is less than 7 NM to each. Restricted areas contain both Armament Systems Test Environment (ASTE) and Electromagnetic Test Environment (EMTE) sites which are used for testing. The vast water range is located immediately to the south with the warning airspace (over water testing areas) located less than 10 NM away.

Eglin's two runways are capable of handling all known military aircraft.

Eglin's location provides easy access to numerous low level military training routes.

Climate is sub-tropical and the vast majority of the time flying conditions are Visual Meteorological Conditions (VMC).

There is limited commercial air traffic in the area to impact testing.

There are seven emergency airfields within 55 NM of Eglin.

(3.2.B.5) Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

No.

(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?

1. Fighter Type Aircraft (F-15), Criteria From AFM 86-2:
   F-15 requirement, (42.8' x 63.8') x 4.4 = 12,015 SF

Main Base Ramp = 4,723,758 SF/12,015 = 393 F-15 aircraft

Hangars

Bldg.	Aircraft	
72	2	
102	3	
103	3	
110	4	
130	10	
138	1	
421	3	
422	3	(Currently being used for temporary storage)
1318	4	
1339	1	
1343	2	
1345	3	
TOTAL	39	

(3.2.B.6) (Continued)

1. (Continued)

Main Base Total = 393 + 39 = 432 F-15's maximum capacity
Duke Field Ramp = 1,908,360 SF/12,015 = 158 F-15 aircraft

Hangars

Bldg.	Aircraft
3020	1
3025	4
3029	1
3057	2
3087	1
3150	3
TOTAL	12

Duke Field Total = 158 + 12 = 170 F-15's maximum capacity
TOTAL FIGHTER AIRCRAFT CAPACITY = 432 + 170 = 602

2. Large Multi-Engine Type Aircraft
   a. KC-135, Criteria From AFM 86-2:

KC-135 requirement, (130.8' x 136.2') x 3.5 = 62,352 SF

Main Base Ramp = 4,723,758 SF/62,352 = 75 KC-135 aircraft

Hangars

Bldg.	Aircraft
130	2
TOTAL	2

Main Base Total = 75 + 2 = 77 KC-135's maximum capacity
Duke Field Ramp = 1,908,360 SF/62,352 = 30 KC-135 aircraft

(3.2.B.6) (Continued)

2. (Continued)

No Hangars

Duke Field Total = 30 KC-135's maximum capacity

TOTAL KC-135 AIRCRAFT CAPACITY = 77 + 30 = 107

b. C-130, Criteria From AFM 86-2:

C-130 requirement, (132.6' x 99.5') x 3.5 = 46,177 SF

Main Base Ramp = 4,723,758 SF/46,177 = 102 C-130 aircraft

Hangars

Bldg.	Aircraft
110	1
130	2
1318	1
TOTAL	4

Main Base Total = 102 + 4 = 106 C-130's maximum capacity
Duke Field Ramp = 1,908,360 SF/46,177 = 41 C-130 aircraft

Hangars

Bldg.	Aircraft
3025	1
TOTAL	1

Duke Field Total = 41 + 1 = 42 C-130's maximum capacity

TOTAL C-130 AIRCRAFT CAPACITY = 106 + 42 = 148

3. Rotary Wing Type Aircraft (H-53), Criteria From AFM 86-2:
H-53 requirement, (88.3' x 72.3') x 3.5 = 22,344 SF

Main Base Ramp = 4,723,758 SF/22,344 = 211 H-53 aircraft

Hangars

Bldg.	Aircraft
72	1
102	1
103	1
110	2
130	5
421	1
422	1
1318	2
1343	1
1345	1
TOTAL	16

Main Base Total = 211 + 16 = 227 H-53's maximum capacity
Duke Field Ramp = 1,908,360 SF/22,344 = 85 H-53 aircraft

Hangars

Bldg.	Aircraft
3020	1
3025	2
3029	1
3057	1
3087	1
3150	3
TOTAL	9

(3.2.B.6) (Continued)

3. (Continued)

Duke Field Total = 85 + 9 = 94 H-53's maximum capacity

TOTAL ROTARY AIRCRAFT CAPACITY = 226 + 94 = 320

4. UAV Type Aircraft - Pioneer - UAV-SR, Criteria from PEO for Cruise Missile and UAV Joint Project UAV requirement, 125.7SF x 3.5SF = 440SF per UAV in its shipping container.

Main Base Ramp = 4,723,758 SF/440 = 10,735 UAV aircraft

Hangars

Bldg.	UAV	
72	71	
102	87	
103	87	
110	130	
130	294	
138	33	
421	98	
422	98	(currently being used for temporary storage)
920	5	
1318	130	
1339	42	
1343	77	
1345	84	
1385	25	
1386	25	
TOTAL	1286	

Main Base Total = 10,735+1286=12,021 UAV's maximum capacity

(3.2.B.6) (Continued)

4. (Continued)

Duke Field Ramp = 1,908,360 SF/440 = 4337 UAV aircraft

Hangars

Bldg.	UAV
3020	54
3025	133
3029	50
3057	76
3087	53
3150	85
TOTAL	451

Duke Field Total = 4337+451=4788 UAV's maximum capacity

TOTAL UAV CAPACITY = 12,021+4788=16,809

5. Cruise Missiles Type Aircraft AGM-86B/C:
AGM-86 requirement, (20.75' x 12') x 3.5 = 872 SF

Main Base Ramp = 4,723,758 SF/872 = 5,417 AGM-86 aircraft

Hangars Bldg.	Cruise Missiles
72	36
102	44
103	43
110	66
130	148
138	17

(3.2.B.6) (Continued)

5. (Continued)

Hangars Bldg.	Cruise Missiles
421	49
422	49
920	2
1318	65
1339	21
1343	38
1345	42
1385	12
1386	12
TOTAL	644

Main Base Total = 5,417 +644 = 6,061 AGM-86's maximum capacity

Duke Field Ramp = 1,908,360 SF/872 = 2,188 AGM-86 aircraft

Hangars Bldg.	Cruise Missiles
3020	27
3025	67
3029	25
3057	38
3087	26
3150	43
TOTAL	226

Duke Field Total = 2,188 + 226 = 2414 AGM-86's maximum capacity

(3.2.B.6) (Continued)

5. (Continued)

TOTAL CRUISE MISSILE CAPACITY = 6,012 + 2,414 = 8,475

(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)

The Air Force Development Test Center (AFDTC) at Eglin Air Force Base has the natural and technical resources as well as the expertise to conduct a full range of air vehicle testing. Eglin's airspace and ground test facilities are used for USAF, joint service, and foreign military sales tests on an assortment of systems, including fixed and rotary wing aircraft, unmanned vehicles, cruise missiles, munitions and electronic combat systems. Eglin's primary mission is the developmental and operational test and evaluation of air armament and electronic combat weapons systems; in addition, AFDTC test resources have been utilized on a variety of air vehicle test programs. Specifically, test planning, execution, analysis and reporting capabilities exist at the AFDTC for the following types of air vehicle testing: performance, handling qualities, wheels and brakes, flutter, loads, aeroservoelasticity, dynamic response, heavy stores oscillation, munitions, life-cycle, operational flight program software, sensors (radar, infrared, electro-optical), avionics integration, stores compatibility, and physical integration with external stores or avionics.

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

A full complement of ground support facilities for preflight checkout or rehearsal of test missions exists at Eglin AFB. Notable examples are:

The Guided Weapons Evaluation Facility (GWEF) and Preflight Integration of Munitions and Electronic Systems (PRIMES) facilities are linked and provide open and closed loop simulation of realistic scenarios. These unique simulation facilities can take a weapon system from target acquisition through launch and mid-course flight in a dense electronic combat environment to terminal engagement with a target.

Flightline preflight of instrumented aircraft and weapons to include exercising telemetry, command destruct, operational flight program software, weapon system data link, and offensive and defensive systems.

(3.2.C.2) (Continued)

Installed and uninstalled aircraft gun firing and boresighting, ballistics, dispersion pattern, accuracy, feed systems and projectile testing at a fully instrumented ground test range.

In addition to the off-equipment repair of Line Replaceable Units (LRU) removed from F-15 and F-16 aircraft, Avionics Intermediate Shops (AIS) perform software loading of operational flight programs, modifications, calibrations and testing for those aircraft. This includes weapons control radars, internal navigation units, head-up displays, automatic flight control, instrument, communication, and navigation systems.

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

All inventory US aircraft as well as foreign aircraft can be supported by the Gulf Test Range. The numbers and types of aircraft supportable are dependent upon the complexity of the scenario desired. For example, the AMRAAM 4 missiles vs. 4 target scenario had 21 different aircraft supporting and participating in that complex air-to-air test scenario. Types of aircraft were: F-15, F-16, F-4, E-9, MU-2, KC-10/KC-135 refuelers, QF-106 drones, and AF-106 drone-chase.

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

No.

(3.2.C.5) What sorts of missions (e.g., air-to-air, air-to-ground and refueling) can be flown within local airspace?

Mission capability includes: Air-to-air, air-to-surface, surface-to-air, surface-to-surface, cruise missile, drone, laser, air drops, air refueling, Theater Missile Defense, and surface detonations.

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

AFDTC telemetry can receive/record/display up to 20 simultaneous streams of telemetry data.

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

Largest number of simultaneous air test missions scheduled was 19 (FY90).

Largest number of simultaneous air test sorties scheduled was 32 (FY90).

NOTE: Eglin airspace consists of the ASTE, EMTE, and Gulf Test Facilities.

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

Type Aircraft	Number	Owner
UH-IN	2	46th Test Wing
F-111E/F	5	46th Test Wing
EF-111	1	46th Test Wing
F-15A/B/C/D/E	9	46th Test Wing
F-15A/B/C	11	USAFAWC
F-16A/B/C/D	11	46th Test Wing
F-16A/C/D	12	USAFAWC
F-15C/D	61	33rd Fighter Wing
HC-130	12	9th Special Operations Squadron
NC-130A	1	46th Test Wing
AC-130A	10	919 Special Operations Wing
C-130H	2	919 Special Operations Wing

(3.3.A.1) What is the number of threats simulated?

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(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?

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.A.3) Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.A.4) Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.A.5) What is the threat representation (fidelity) and density?

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.A.6) Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.A.7) What geographic dispersion can be simulated?

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.A.7.A) Threat lay down?

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.A.7.B) Representative distance?

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.A.8) Are the threats moveable (i.e. dynamic) within a test scenario? Relocatable to new scenarios? Yes/no

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.A.9) Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.A.10) Is there a limit on simultaneous users? Yes/no. If no, explain.

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(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.

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.B.2) What is the number of simultaneous countermeasures that can be evaluated?

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.B.3) What range of spectra can be tested and evaluated?

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.B.4) What are the available spectra?

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.3.B.5) Do you have a scene generation capability? Yes/no. If yes, describe.

The Gulf Test Facility is contiguous with the Electromagnetic Test Environment (EMTE) and the Armament Systems Test Environment (ASTE). Tests conducted on the Gulf Test Facility requiring the use of threat systems/simulations will use the EMTE assets. Reference EMTE paragraphs of same designation for detailed answer.

(3.4.A.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?

No.

(3.4.B.1.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?

Land: Not Applicable.

Water: 92,988 square miles.

Other airspace is available for scheduling bringing the total to 135,313 square miles.

(3.4.B.1.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.

Land - N/A.

Water	Range	Acres (Millions)
	W - 151A	1.9
	W - 151B	1.86
	W - 151C	1.28
	W - 151D	1.44
	W - 155A	1.9

(3.4.B.1.B) (Continued)

Water	Range	Acres (Millions)
	W - 155B	2.3
	W - 168A	5.6
	W - 168B/C	.38
	W - 174	6.93
	W - 470A	.77
	W - 470B	1.15
	W - 470C	.8
	W - 470D	.8
	W - 470E	.8
	EWTA - 1	3.26
	EWTA - 2	6.4
	EWTA - 3	10.24
	EWTA - 4	5.12
	EWTA - 5	2.38

(3.4.B.1.C) What are the maximum ranges (nautical miles) you can test, by type weapon?

As stated in 3.1.G.7, the maximum straight-line range contained within the Eglin available use airspace is 478 NM. This distance is available for all types of weapons testing. It should be noted that land-impact tests could be, and in some cases are, released over the gulf test range. Ground track distances much longer than 500 NM could be accommodated within AFDTC ranges for autonomously guided weapons (i.e., cruise missiles). For example, TOMAHAWK launches from ships in the Gulf Test Facility and terminating on the ASTE, have covered up to 725 NM. Longer ground track distances can be accommodated as test requirements dictate. AMRAAM test requirements are easily accommodated in the Gulf Test Range. Future projected tests of Theater Missile Defense requiring range of 540 NM are currently being planned.

(3.4.B.2.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:

NOTE: These totals are also reported in ASTE. Hellfire data is also presented in the Hellfire Test Facility data package.

Unguided 2000 pound-class ballistic weapon	FY92	FY93
---live?	6	0
---inert?	165	49
Guided weapon (e.g., GBU-24 class)		
---live?	11	4
---inert?	42	27
Stand-off weapon (e.g., AGM-130 class)		
---live?	0	0
---inert?	14	25
---Cruise Missile - inert**?	4	14
Short-range missile (e.g., AIM-9, AIM-4)	*136 msns/	*195 msns/
---below 5000 feet MSL	373 missiles	384 missiles
---between 5000 and 20,000 feet MSL		
---above 20,000 feet MSL		
Long-range missile (e.g., AIM-120, AIM-7)	*136 msns/	*154 msns/
---below 5000 feet MSL	198 missiles	220 missiles
---between 5000 and 20,000 feet MSL		
---above 20,000 feet MSL		

* All altitudes.

** Cruise Missiles travel over both the Gulf Test Water Range and the ASTE Land Range and therefore this data is listed in both places.

NOTE: AGM-65 Mavericks and Hellfire missiles have been launched at Eglin, but they do not fall within the above classifications. Ninety-six AGM 65's were launched on 20 missions in FY92 and 55 during 10 missions in FY93. Fifty-four Hellfire missions were scheduled in FY92 and 78 missions in FY93.

(3.4.B.2.B) Were flight termination systems required? Yes/no.

Yes.

(3.4.B.2.C) If no missions were scheduled in a category, give the reason(s).

No tests in those categories were requested.

(3.4.B.2.D) 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.

No; however, two (of over 220) AMRAAM launch missions and one TOMAHAWK launch were postponed since 1988.

APPENDIX A

GULF TEST FACILITY

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: GULF TEST FACILITY

T&E FUNCTIONAL AREA		FISCAL YEAR 86	87	88	89	90	91	92	93	
AIR VEHICLES	DIRECT LABOR									
	TEST HOURS	NA	139	349	511	335	345	116	550	
	MISSIONS	324	156	170	248	138	84	55	208	1558
EC	DIRECT LABOR									
	TEST HOURS	NA	1,176	2,279	1,574	1,738	1,496	1,335	876	
	MISSIONS	857	1,180	1,299	955	857	787	673	447	7055
ARMAMENT/WEAPONS	DIRECT LABOR									
	TEST HOURS	NA	1,548	2,813	3,104	3,261	3,619	3,125	2,687	
	MISSIONS	1,462	1590	1,680	1,939	1,855	2,215	1,740	1,396	13857
OTHER T&E	DIRECT LABOR									
	TEST HOURS	NA	5,693	1,309	1,379	1,599	1,531	5,208	6,215	
	MISSIONS	502	788	433	437	403	461	1,805	1,762	5571
OTHER	DIRECT LABOR									
	TEST HOURS	NA	10,487	19,043	19,857	20,203	19,606	18,721	18,505	
	MISSIONS	3,591	4,568	5,125	5,242	4,981	3,727	2,470	2,477	32162

NOTE: NA = Not available.

61,027

GULF TEST FACILITY

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: GULF TEST FACILITY

			ANNUAL HOURS OF DOWNTIME	576
			AVERAGE DOWNTIME PER DAY	1.6
			AVERAGE HOURS AVAILABLE PER DAY	22.4
TEST TYPES	TESTS AT ONE TIME	FLIGHT HOURS PER MISSION	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY
AIR-TO-AIR	1	20	20	2,643
SURFACE-TO AIR	1	15	15	
EC	1	8	8	ANNUAL UNCONSTRAINED CAPACITY
SIGNATURE	2	8	16	
TYPICAL	5	11.8	59	964,768
		TOTAL SUM	118	

NOTE: Typical represents additional tests that could be accomplished if manpower were unconstrained.

GULF TEST FACILITY

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: GULF TEST FACILITY
AGE: 51 years

REPLACEMENT VALUE:

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE:

NATURE OF LAST UPGRADE: There is no real property associated with the Gulf Test Facility.

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE:
TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:

2. UPGRADE TITLE:
TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:

GULF TEST FACILITY

GENERAL INFORMATION

Facility/Capability Title: GULF TEST FACILITY

Origin Date: 08/04/94

Service: USAF

Organization/Activity: 46 Test Wing

Location: Eglin AFB, FL

T&E Functional Area: Armament/Munitions

UIC: Not Available

T&E Test Facility Category: Open Air Ranges

	T&E	S&T	DE	IE	T&D	OTHER	TOTAL (%)
PERCENTAGE USE:	33	0	0	0	67	0	100
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	1	0	0	0	1	0	2
Armament/Weapons	7/9 = 78%	0	0	0	2	0	9
EC	3	0	0	0	0	0	3
Other	22	0	0	0	64	0	86

TECHNICAL INFORMATION

Facility/Capability Title: GULF TEST FACILITY

Facility Description; Including Mission Statement: The Gulf Test Facility consists of eleven contiguous water test areas encompassing 92,988 square miles of the Gulf of Mexico. These test areas are used for long-range, all altitude, air-to-air/drone targe engagements, electronic combat, and long-range or anti-ship air-to-surface weapons evaluation. These test areas provide adequate surface area for evaluation of large safety footprint (hazard zone) weapons systems and provide for an adequate debris impact area. Portions of the water range provide shallow depths to enhance successful recovery of selected weapons. The Gulf Test Facility also provides adequate area for sea-launched surface-to-air missile tests. Eglin controls 86,500 square miles of airspace and other airspace is available for scheduling, increasing the total to 135,313 square miles.
Interconnectivity/Multi-Use of T&E Facility: Nineteen miles of Air Force-owned beachfront property provide a unique land-sea interface with contrasting background/clutter environments which are especially useful for munition seeker testing. The land-sea interface also provides a unique ingress scenario for electronic combat tests.
Type of Test Supported: Air-to-Air Weapons/Drone Target Engagements, Air-to-Surface Weapons Evaluation, Electronic Combat Tests, and Surface-to-Air Tests.
Summary of Technical Capabilities: The water test ranges are supported by land-based radar, electro-optical and GPS TSPI with telemetry and airborne systems (Tyndall AFB E-9A aircraft) providing the primary data or relay link with ground stations. Multipl air-to-air weapons tests over the water ranges are supported by the Gulf Range Drone Control Upgrade System (GRDCUS) where the main ground portions of the system are located at Tyndall AFB with a communication/data link to the Central Control Facility (CCF) at Eglin AFB.
Keywords: Air-to-Air, Air-to-Surface, Surface-to-Air, GRDCUS

GULF TEST FACILITY

ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: GULF TEST FACILITY

PERSONNEL

	FY93	FY94	FY95*	FY96*	FY97*	FY98*	FY99*
OFFICER	NA	NA	NA	NA	NA	NA	NA
ENLISTED	NA	NA	NA	NA	NA	NA	NA
CIVILIAN	NA	NA	NA	NA	NA	NA	NA
CONTRACTOR	NA	NA	NA	NA	NA	NA	NA
TOTAL	NA	NA	NA	NA	NA	NA	NA
NOTE: There are no personnel directly assigned to the Gulf Test Facility. Personnel supporting this facility are assigned to the ASTE and EMTE facilities.							

TOTAL SQUARE FOOTAGE NA
TEST AREA SQUARE FOOTAGE NA
OFFICE SPACE SQ. FOOTAGE NA
TONNAGE OF EQUIPMENT NA
VOLUME OF EQUIPMENT NA
ANNUAL MAINTENANCE COST NA
ESTIMATED MOVING COST NA

CAPITAL EQUIPMENT INVESTMENT: (N/A)

Document Separator

FACILITY/CAPABILITY: HELLFIRE TEST FACILITY @ EGLIN AFB

TEST FACILITY CATEGORY: OAR

% T&E - OVERALL: 100 DRS

AV: 0

EC: 0

A/W: 100 PES

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5): 1 DRS

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92	0	FY93	0
EC:	FY92	0	FY93	0
A/W:	FY92	1,660 DRS	FY93	1,528 DRS

Nation 12 Aug 94

(2.1.A.1) What amount of workload have you performed each year from FY86-93?

Reference the Historical Workload Form provided in Appendix A of this package.

(2.1.B.1) Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP.

Historical, FY 92

Program Element	AV	EC	A/W	OT	OTHER
11127F			X		
27134F			X		
27313F			X		
27589F			X		
27590F			X		
28015F			X		
31310F			X		
62602F			X		
63228D			X		
63601F			X		
64604F			X		
64940D			X		
65130D			X		
65712F			X		
65807F			X		
72806F			X		
ARMY			X		
NAVY			X		

Historical, FY 93

Program Element	AV	EC	A/W	OT	OTHER
11127F			X		
27133F			X		

(2.1.B.1) Continued

Historical, FY 93 (Continued)

Program Element	AV	EC	A/W	OT	OTHER
27134F			X		
27217F			X		
27313F			X		
27589F			X		
28015F			X		
28030F			X		
31310F			X		
62602F			X		
63228D			X		
63601F			X		
63714F			X		
64604F			X		
64733F			X		
72806F			X		
ARMY			X		
B6404D			X		

Future Years

Program Element	AV	EC	A/W	OT	OTHER
11127F			X		
27133F			X		
27134F			X		
27217F			X		
27313F			X		
27589F			X		
27590F			X		
28015F			X		
28030F			X		
31310F			X		

(2.1.B.1) Continued

Future Years (Continued)

Program Element	AV	EC	A/W	OT	OTHER
62602F			X		
63228D			X		
63601F			X		
63601F			X		
63714F			X		
64604F			X		
64733F			X		
64940D			X		
65130D			X		
65712F			X		
65807F			X		
72806F			X		
ARMY			X		
B6404D			X		
NAVY			X		

(2.1.B.2) What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

Hellfire:

Functional Area	FY92 Workyears	FY93 Workyears
Air Vehicle	0	.01
Electronic Combat	0	0
Armament/Weapons	.94	.86
Other Test	0	0
Other	0	0

NOTE: Workyears computed by dividing test hours by1768 hours per workyear.

(2.2.A) Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.).

Reference the Determination of Unconstrained Capacity Form provided in Appendix A of this package.

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

Yes. The Hellfire Flight Test Facility is designed to fire only one missile at a time for data with up to six missiles per hour..

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

Yes.

(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. This facility is essential to the developmental and product line flight testing of the Hellfire missile. Also, it is essential for the DT&E testing of the LONGBOW system (including Apache helicopter and Fire Control Radar).

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

Yes. This facility was used to determine the effectiveness of the Apache/Hellfire Weapon System against enemy tank scenarios that US Forces would encounter in the Gulf War.

(3.1.A.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 and external to the site.

100%. TS C-7, TS C-7A, and TA C-72 are all interconnected via a cable TV network. All three of these sites and test areas are transferring data and video in real-time to successfully complete a mission.

(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.

Yes. TS C-7 and TS C-7A are utilized quite heavily to run a variety of missions on TA C-72 that require a large safety footprint, real-time video, data, and telemetry displays.

(3.1.B) Facility Condition (MV II)

Reference the Facility Condition Form provided in Appendix A of this package.

(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.
<u>Encroachment:</u>

There are NO limiting encroachment characteristics associated with this facility.

<u>Environmental:</u>

No. None of the current Hellfire tests are currently limited by any environmental constraints

(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.

Encroachment:

Not Applicable.

Environmental:

Not Applicable.

(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.

The Hellfire launch control facility and associated range (C-72) is currently operating without any temporary permits or voluntary agreements of an environmental nature.

(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:	**253,144**
100 Mile Radius:	**952,650**
150 Mile Radius:	**1,211,688**
200 Mile Radius:	**1,966,382**

(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.

Not applicable for air and sea. State highway 285 is used on a daily basis but can be closed for duration of test activities.

(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.1) Do you have specialized facilities which 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. Environmental Control Boxes to precondition missiles and Hellfire Data Acquisition Control System (HDACS).

The following facilities are currently required to support the Hellfire Test Facility mission or are potentially required to support future test mission activities:

SUPPORT FACILITIES LIST

WRIGHT LABORATORIES

- **Advanced Warhead Experimentation Facility**
- **Hypervelocity Research Facility**
- **Fuzes Research and Development Facility**
- **Radio Frequency/Millimeter Wave (RF/MMW) Facility**
- **High Explosive Research and Development Facility**

NAVAL EXPLOSIVE ORDNANCE DISPOSAL SCHOOL

AFDTC

- **Freeman Computer Science Center**
  - **Test and Analysis**
  - **System Technology**
- **Safety**
- **Instrumented Airborne Platforms (C-130, F-111, F-15, F-16, UH-1)**
- **Avionics**

AFDTC (Continued)
- Multilateration Systems & GPS
- Static Test Facility
- Electro-Optical/Millimeter Wave Instrumentation
- Airborne Systems/Instrumentation
- Meteorological Instrumentation
- "Specialized" Electronic Systems Flight
- Electronic Design and Development Flight
- Air-to-Air Missile Maintenance Facility
- Air-to-Ground Missile Maintenance Facility
- Precision Measurement Equipment Lab (PMEL)
- Precision Measurement Facility - Site III Mass Properties
- Munitions Build-Up
- Munitions Storage and Handling
- Armament Maintenance Section
- Alternate Mission Equipment Section
- Aircraft Repair Element
- Fuels
- Propulsion
- Machine Shop
- Structural Maintenance
- Metals Processing
- Corrosion Control
- Non-Destructive Inspection
- Electro-Environmental
- Pneudraulic
- Patterns and Plastics
- Survival Equipment
- Inspection Element
- Aerospace Ground Equipment

WRIGHT LABORATORIES (WL/MN)

The laboratories provide numerous capabilities that are an integral part of the cradle-to-grave munitions development process which is uniquely located on one installation (the complete Wright Laboratories facilities/capabilities are provided under another data call.):

Advanced Warhead Experimentation Facility

Conduct R&D of warheads and warhead technologies; fabricate test and characterize ordnance items constructed of various conventional and heavy metals.

Research items include warheads, projectiles and associated components such as penetrators, shaped charge liners, explosives and fuzes.

Above items manufactured and tested while toxic effects of potentially hazardous materials contained and air filtered before reaching the outside environment.

Hypervelocity Research Facility

Contains a dedicated laboratory for performing research and development on Advanced Oxidation Techniques (i.e. non-thermal silent-discharge plasma processing) for potential use in (1) the destruction of environmental contaminants extracted from ground water; (2) the disposal of munitions; (3) the destruction of hazardous compounds generated by weapons; (4) the reduction of NO_X Emissions from power plant smoke stacks and advanced aircraft engines.

Fuzes Research and Development Facility

Research and development of fuzes, sensors and associated signal processing circuitry for targets of interest.

Electronic lab, explosive test bays, laser lab, aerosol chamber, printed circuit board fabrication equipment.

Radio Frequency/Millimeter Wave (RF/MMW) Facility

Main Lab: Calibration and measurement test benches; 94 GHz monopulse radar; X-band pulse doppler fire control radar.

WRIGHT LABORATORIES (WL/MN) (Continued)

Penthouse: Roof level room with sliding windows allowing sensors to view area outside building; includes instrumentation and communication with main lab and tower.

Tower: 3 X 3 meter room 10.6 meters above bldg. 13A roof; Elevator; 360 degree field of view; instrumentation and communication lines with main lab. Areas available to view include Eglin flightline and runways, intercoastal waterway in Choctawhatchee Bay, Eglin tank farm, various buildings and associated structure.

High Explosive Research and Development Facility

Load experimental munitions up to 1000 lbs of explosives.
Develop processing techniques for loading Air Force Munitions.
Provide quality control x-ray capability up to 6 MeV.
Formulation and processing of melt cast, cure cast PBX, and pressed explosives.
Accelerated aging and environmental testing.
Performance and sensitivity testing up to 20 lbs TNT equivalent explosive.

NAVAL EXPLOSIVE ORDNANCE DISPOSAL SCHOOL

Mission Statement: A jointly-staffed (Army, Navy, Air Force, Marine Corps) school providing specialized Explosive Ordnance Disposal training to officer and enlisted personnel of all services, both U. S. and foreign, and to selected civilian officials, in the best methods and procedures for the detection, identification, render safe, recovery, evaluation, and disposal of explosive ordnance, surface and underwater, conventional and nuclear, employed by the U. S. and other nations.

Unique Capabilities: The EOD School supports test activities by rendering safe or removing unexploded ordnance from various land and water test ranges.

FREEMAN COMPUTER SCIENCE CENTER

Test and Analysis

Provides the mathematical and software engineering services required for the measurement, reduction, and analysis of test data, both in real time and post mission, for the 46th Test Wing and for AFDTC tenants. Designs, develops and implements the AFDTC Test Range Central Control Facility (CCF), Telemetry Facility (TELEMAG) and Image Processing Facility. Provides a broad base of mathematical and statistical and computer expertise for the development of data reduction methodology, for the engineering of data reduction and analysis software products, for the design of tests and experiments, and for the analysis of test and experimental data.

No other facility has the integrated capability of telemetry, control radar, threat sites, surveillance radar, and photo-optics in a single location for open air real time testing. The computational capability of the facility allows many data products to be available for the customer as soon as the mission is complete.

The CCF is designed for commonalty/compatibility with DOD instrumentation systems such as GPS, SAI, and Common Airborne Instrumentation. The facility is currently used by other DOD services and US Allies on a regular basis.

Systems Technology

Designs, develops, implements, operates and maintains the AFDTC Scientific Computer Center and its networks. Provides a broad base of expert computer and system engineering consultants. Provides software engineering support for the Eglin scientific and engineering community including development, customization and adaptation of graphics, applications, and system software products. Develops software products for the simulation and/or control of weapon or related systems as required for RDT&E. Operates and maintains the Eglin Decision Support System and the CRAY YMP Supercomputer.

The computer center has a CRAY YMP supercomputer and visualization laboratory, consisting of a 1 Gigabit network to the CRAY, Silicon Graphics workstations, video recording and printing equipment, to aid in the rapid analysis and presentation of simulation data. The center is a node on the Defense Research Engineering Network (DREN).

This is a general purpose computer center that supports all phases of digital models and computer simulations. It is available to all DOD agencies. The largest current user is the Aeronautical Systems Center.

SAFETY

Mission Statement: Provide the Commander, AFDTC, with a coordinated and integrated safety program. Provide accident prevention guidance and technical safety support for Eglin military and contractor agencies. Develops and provides safety training and education, investigates and reports accidents/incidents. Maintains safety survey effort and assures acceptable range safety for all activities conducted under purview of the Commander, AFDTC, according to AFMCR 127-8. Implements the AFDTC system/munitions safety program in conformance with AFR 127-6 and AFDTCR 127-3 and supplements. Assigns explosive hazard classifications for munitions developed or stored at AFDTC and certifies technical data from safety standpoint. Interfaces during all phases (test planning, aircraft modification, flight profile approval, and mission conduct) of multi-national and multi-service weapons test programs to ensure the flight safety directives and principles are adhered to. Safety officers maintain currency in a mission aircraft.

Unique Capabilities: Real-Time Processing Systems: All real-time mission analysis and safety control is provided at the Central Control Facility (CCF) located in building 380. The CCF is designed to provide state-of-the-art analysis and control resources which are needed to satisfy AFDTC's real-time test support requirements through the 1990s. The general-purpose computers which support the CCF have access to most of the range data sources [radars, telemetry, the Gulf Range Drone Control Upgrade System (GRDCUS), and TPX-42]. Real-time application programs process data collected during missions to provide real-time analysis and control information. These computer resources, displays, and system flexibility are sufficient to support many different types of missions simultaneously.

INSTRUMENTED AIRBORNE PLATFORMS

Mission Statement: Instrumented aircraft are required to support the test and evaluation of munitions, electronic combat, communications computers command control and intelligence (C4I) systems, and inertial navigation/guidance systems in the Open Air Arena.

Unique Capabilities: Aircraft instrumentation provides time, space, position information (TSPI), platform specific information (avionics/weapons data), and test specific information (environmental/infrared/separation data). Instrumentation data can be provided real time (via telemetry (TM) transmitters and/or data links) and/or post mission (via analog data tape recorders, video tape recorders and film cameras). The TM stream is usually the PCM (pulse code modulation) output of a data acquisition system which collects and conditions the various analog and digital signals. The oldest data systems are the programmable Data Acquisition System (pDAS) and the Airborne Test Instrumentation System (ATIS). Until the Common Airborne Instrumentation System (CAIS) is available, the

INSTRUMENTED AIRBORNE PLATFORMS (Continued)

Advanced ATIS system (AATIS) is presently being installed. The main sources of digital data are the aircraft's busses, avionics, weapons, ECM, and display. This data can be recorded selectively or totally. Cockpit displays (HUD/VSD/TEWS/RWR/MFD/etc) are recorded on video tape recorders (video cameras may be required if display signal is not TV (RS-170) formatted). 1553 bus data or other PCM information may be formatted/conditioned (Merlin system) to a TV format for video tape recording. Analog tape recorders are the MARS 1400 (14 track, 14" reel), MARS 2000 (14 track, 10" reel), and the MARS 2028 (28 tracks, 10" reel); video tape recorders are the NAC (VHS) and the new TEAC (Hi 8 mm); digital recorder is the MARS II. A Time Code Generator (TCG) provides IRIG (Interrange Instrumentation Group) time for time correlation of analog, digital, film and video data. Store separation data is provided by 16 mm film cameras which are installed in aircraft fairings and/or carried on store stations. Airborne TSPI sources are a radar transponder (beacon), user GPS, or RAJPO GPS. The GPS data can be recorded or it can be transmitted via the MTACS (Multilateration Tracking and Control System) data link. Telemetry and video streams are encrypted before transmission.

Various types of instrumented pods/shapes are carried on the platform's store stations. Power and control wiring is either installed or standard aircraft wiring is utilized. The Golden Bird Missile is an instrumented AIM-7; the ARTIS pod contains an instrumentation radar for relative TSPI; I-HAWK and SADS VI M/1 are threat simulator pods; the BASES, SAIMS, and ASIMS are infrared (IR) pods; GPS/MTACS pods contain the RAJPO HDIS receiver combined with the MTACS data link. Two F-15B aircraft have an instrumentation 1553 bus specifically installed to control instrumentation pods. ACES II, ITV, and IMV are instrumented AMRAAM shapes/pods.

Listed below are the 46TW and AWC aircraft already modified, in process of being modified, or to begin modification this FY.

C-130

C-130A 55-0022: Airborne platform for DT&E of air-to-ground and air-to-air seekers and sensors (visible, IR, MMW), stabilized turret, beacon, GPS

F-111

F-111E 67-0118: Film cameras, cockpit video camera, VTR (Hi 8 mm), TCG, beacon F-111F 70-2379: Flutter instrumentation, film cameras w/FDRS, video cameras for separation, ATIS, MARS 2000, TCG, Beacon, VTR (Hi 8 mm)

F-111F 70-2400: Film cameras w/FDRS, AATIS, TCG, user GPS w/MTACS, Beacon, MARS 2028, TM

F-15

F-15A 76-0101: JTIDS, HUD/VSD/MPCD VTRs(Std TEAC, NAC), TCG, MARS 2000, pDAS, Beacon, TM

INSTRUMENTED AIRBORNE PLATFORMS (Continued)

F-15 (Continued)

F-15C 84-0011: JTIDS, HUD/VSD VTRs(8 mm), MPCD VTR(NAC), TCG, MARS 2000, pDAS, TM, Beacon

F-15A 77-0064: Film cameras, HUD/VSD Video Cameras & VTRs(8 mm), TCG, MARS 2000, pDAS, Beacon, TM, partial Golden Bird

F-15A 76-0116: High Speed Radar Buffer Box, ITV Pod, TCG, Beacon, MARS 2000, pDAS, VTR(NAC), TM

F-15B 73-0114: MSIP B FOT&E, HUD/VSD/MPCD/RWR VTRs (Hi 8 mm), TCG, pDAS, Beacon, TM

F-15B 75-0080/84: 1553 Instrumentation Bus, HUD/VSD/MFD VTRs (NACs), TCG, pDAS, MARS 2000, Beacon, TM, Pods: ARTIS, I-HAWK, SADS VI M/1, BASES, SAIMS, ASIMS, Golden Bird

F-15B 77-0161: High Speed Radar Buffer Box, PSP/RSP Radar, TCG, pDAS, HUD/VSD cameras, VTRs (Hi 8 mm), TM, Beacon, Film Cameras on Station Adaptors, pods: Golden Bird, ARTIS

F-15C 84-0018: AMRAAM Instrumentation, TCG, pDAS, MARS 1400, TM, Film Cameras, Beacon, HUD/VSD VTRs (8 mm), pods: ACE II, ITV, IMV, partial Golden Bird.

F-15C 85-0126: AMRAAM/TEWS Instrumentation, HUD/VSD/TEWS Video Cameras & VTRs (8 mm & NAC), Film Cameras, pDAS, TCG, TM, MARS 2028, encrypted/transmitted ALR-56C FTI data, Beacon, pods: ACE II, IMV, partial Golden Bird.

F-15C 80-0022: AMRAAM/TEWS/JTIDS instrumentation, AATIS, MARS 2028, MARS II, TCG, TM, Beacon, pods: partial Golden Bird (In design)

F-15C 78-0542: TEWS Instrumentation, HUD/VSD/TEWS Video Cameras & VTRs (NACs), TCG, pDAS, TM, Beacon, MARS 2028, pod: partial Golden Bird

F-15D 84-0045: AMRAAM Instrumentation, Film Cameras, HUD/VSD Video Cameras & VTR (NAC), High Speed Radar Buffer Box, pDAS, TCG, TM, Beacon, pods: ACE II, ITV, DMV

INSTRUMENTED AIRBORNE PLATFORMS (Continued)

F-15 (Continued)

F-15E 86-0185/0188: SEEK EAGLE/TEWS/AMRAAM Instrumentation, Film Cameras, MPDP VTRs (Hi 8 mm), TCG, pDAS, TM, MARS 2028, encrypted/transmitted ALR-56C FTI data, beacon, video TM

F-16

F-16A 80-0609: AMRAAM Instrumentation, Film Cameras, Hud/REO Video cameras & VTRs (NACs), pDAS, MARS 2000, TCG, TM, Dual HUD capability, partial OCU, Beacon, Total A&W bus recording, pods: ATLIS II, RDIP, RUBIS, ASRAAM (In Design)

F-16A 80-0761: AMRAAM Instrumentation, Film Cameras, HUD/REO Video Camera & VTRs (NACs), pDAS, MARS 2000, TCG, TM, Beacon, ADF capable, pods: ACE II, Musketeer Lee, ASRAAM (In design)

F-16B 78-0104: INS Fighter test bed.

F-16B 82-1037: Film Cameras, TCG, Beacon

F-16B 83-1123/88-0353: Flutter & Loads, Flutter Exciter Panel, Film Cameras, pDAS, TCG, TM, MARS 2000, HUD/RMFD or LMFD VTRs (NACs), Beacon, pods: RDIP (123 only)

F-16C 83-1163: AMRAAM Instrumentation, Film Cameras, HUD/REO Video Cameras & VTRs(NACs), pDAS, TCG, MARS 1400 or 2000, Beacon, TM, pod: ACE II

F-16C 84-1280/1285: AMRAAM Instrumentation, Film Cameras, HUD/MFD/RWR Video Cameras & VTRs(NACs), MARS 1400, pDAS, TCG, TM, Beacon, chaff/ flare monitor, pod: ACE II

F-16C 88-0441: AMRAAM Instrumentation, Film Cameras, RWR video camera, Total Bus recording, HUD/LMFD/RMFD/RWR VTRs (Hi 8 mm), TCG, pDAS, TM, ALE-47 instrumentation, Beacon, pods: IMV, DMV, JSOW, ACE II

F-16C 89-2070: ALE-47 Instrumentation, RWR video camera, HUD/LMFD/RMFD/RWR VTRs(NACs), TCG, pDAS, TM, Total Bus recording, Beacon, pods: ACE II

INSTRUMENTED AIRBORNE PLATFORMS (Continued)

F-16C 90-0726: ALQ-126B

F-16D 80-0844/0848: HUD/MFD/RWR VTRs(Hi 8 mm), Total bus recording A/B/C/D/EW/W busses (Merlin, Hi 8 mm), HARM & ALIC PCM recording (Merlin, Hi 8 mm), TCG, Beacon (In design)

F-16D 88-0469: NAC Recorders

F-16D 90-0835: AMRAAM Instrumentation, Film Cameras, HUD/MFD/RWR/HELMET/HAND-HELD VTRs (Hi 8 mm), AATIS, TCG, MARS 2028, Total Bus recording, user GPS 422 monitor, user GPS w/MTACS, encrypted video, beacon, TM, pods: ACE II, RDIP

F-16D 80-0836: HARM Instrumentation, Film Cameras, HUD/MFD/RWR VTRs(Hi 8 mm), AATIS, TCG, MARS 2028, Total Bus recording, user GPS
422 monitor, user GPS w/MTACS, encrypted video, TM, beacon, pods: RDIP, ACE II

UH-1

UH-1N 69-6617/6626: BASES Pod, Aerial Ignition Device, beacon

AVIONICS

Mission Statement: The F-16 AIS Shop is responsible for off-equipment Intermediate level maintenance and support of F-16 Line Replaceable Units (LRUs). Does software loading of Operational Flight Programs, TCTOs, modifications, calibrations, and testing of F-16 LRUs. Responsible for testing weapons, instruments, and ALR-69 systems using AIS test equipment. Maintains four test stations and ancillary equipment by performing inspections, modifications and repairs.

The F-15 AIS is responsible for testing F-15 LRUs including weapon control radar, inertial navigation, heads-up display, automatic flight control, instrument, and communication and navigation systems. Uses, maintains, and calibrates avionics intermediate shop test stations used to repair F-15 LRUs. Performs off-equipment maintenance and line delivery of AXQ-14 and Improved Data Link pods.

The Conventional Avionics Shop is responsible for intermediate and organizational level maintenance on avionics systems installed on UH-1N helicopters and transient aircraft. Performs intermediate level maintenance of CommNav, Guidance, and ECM systems on assigned aircraft. Modifies, repairs, loads, and operationally checks ECM pods on F-15, F-16 and F-111 aircraft to support test missions.

AVIONICS (Continued)

Repairs and modifies communication ground cords, headsets, and emergency survival radio/beacons for Eglin units. Maintains, installs, and repairs radio ground mount adapters for emergency and operations vehicles on Eglin. Operationally checks all UHF, VHF, and RWR antennas for serviceability.

The Sensor Test Shop is responsible for on-equipment and off-equipment maintenance of all assigned and transient sensor systems. Performs intermediate and organizational level maintenance on LANTIRN targeting and navigation and PAVE TACK Laser Target Designation pods. Maintains intermediate level test equipment including the LANTIRN mobility shelter set. Performs intermediate level maintenance on Airborne Video Tape Recorders and Cockpit Television Systems, to include phase inspection work cards. Assists field engineers in the kit proofing, validating and fielding of new systems and/or upgrades to current systems.

The Radar Test Shop provides intermediate level repair of F-15 and F-16 radar and other avionics and components. Reprograms various avionics and other computers. Refurbishes F-15 and F-16 flight control and INU batteries. Performs operational checks for serviceability of F-15 and F-16 radar LRU's. Provides repair and functional checks of F-16 ARC-164, ARC-186, and ARN-118 receiver/transmitters, throttle grips, side stick controllers, GPS receivers and numerous F-16 control units. Repairs various circuit card assemblies by troubleshooting and replacing electronic components as required. Provides software testing to Test Wing agencies on Eglin AFB.

Unique Capabilities: Maintains full F-16 and F-15 radar mockups with capability to troubleshoot and repair parts in concert with associated avionics intermediate stations (AIS). A Huntron Tracker is on hand to repair circuit cards. A LANTRIN Mobile Support Shelter and a PAVE-TACK repair test set are also available.

Outside Customers Supported:

1. Air Force Armament Museum
2. Vitro Services
3. 33rd FW (ACC)
4. 9th Special Operations Squadron
5. 728th Tactical Control Squadron

MULTILATERATION SYSTEMS & GPS

Mission Statement: Provides a time-space-position-information (TSPI) capability to support customer needs. While providing TSPI of up to 20 aircraft or ground vehicles, up to 6 vehicles can be remotely controlled. Airborne pods provide TSPI from multilateration and/or GPS/inertial reference. A synchronized A/C and remote controlled target test capability is provided at a central control facility (CCF).

Unique Capabilities: Uses the resources of the Gulf Range Drone Control Upgrade System (GRDCUS) to provide a wide area test arena, including over-the-horizon, over Eglin, Tyndall and the South East Test and Training Area (SETTA). IFF radar data can also be shared with MTACS. Two data link frequencies are available for simultaneous missions each having the number of participants mentioned in the above statement.

Outside Customers Supported:

1. **AFOTEC**
2. **USAF AWC**
3. **U. S. Navy**
4. **U. S. Army**
5. **Various foreign governments**

STATIC TEST FACILITY

Mission Statement: Provides the capability to test the strength of external stores and suspension equipment

Unique Capabilities:. Through the use of hydraulic cylinders, loads are exerted on test articles to simulate actual loads which may be encountered by the item during flight conditions. Currently, the force exerted by the cylinders is measured by load cells and the operators regulate the hydraulic pressure to each cylinder to adjust the load. The facility is being upgraded to incorporate an automatic feedback control system using input from the load cells to regulate hydraulic pressure. In addition, the capability exists to measure the displacements resulting from the forces exerted on the test item.

ELECTRO-OPTICAL/MILLIMETER WAVE INSTRUMENTATION

Mission Statement: Provides design, development, and operation of airborne and surface EO/MMW instrumentation systems. Provides multispectral targets and targets in back-ground including target expendables. Provides captive carry operation and test of air-to-air, surface-to-air, and surface-to-surface domestic and threat missile seeker guidance, and control units operating in a real and CM environment. Provides quick look and field data reduction and analysis of all collected signature data.

Unique Capabilities: Multispectral signature measurement and captive flight testing capability residing in a cadre of highly qualified technical and range personnel and customized and standard sophisticated EO/MMW instrumentation operating in A-A, A-S, S-S, S-A, and tower/turntable scenarios. Spectral range includes ultra-violet, visible, mid and long wavelength infrared, laser, millimeter wave, seismic, acoustic, and magnetic. Measurement disciplines include temporal, radiometric, spatial, spectral, phase, range, polarization, frequency, and cross section. State-of-the-art sensitivity, resolution, and bandwidth, data rate/recording and seeker/sensor performance measurements are maintained. A suite of targets for target and target in clutter signature measurement and seeker/sensor evaluation are maintained. Archiving of collected data is provided by the Targets and Background Information Library System (TABILS). The capability is uniquely connected to modeling and simulation facilities such as the Guided Weapons Evaluation Facility (GWEF) as a source of data required to drive HITL scene generators and to validate models. The capability is built upon many years of T&E research and engineering expertise and experience.

Outside Customers Supported:

1. ASC
2. USAF AWC
3. AFSOC
4. U. S. ARMY
5. U. S. NAVY

AIRBORNE SYSTEMS/INSTRUMENTATION

Mission Statement: Designs, develops and procures airborne instrumentation systems for installation on aerospace vehicles and airborne threat simulators. Performs T-2 (Class II) modification support and post modification calibration and checkout. Provides pre/postflight instrumentation support for test missions.

Unique Capabilities: The unique capability provided is the design, procurement, installation and support of aircraft instrumentation systems, i.e. the requirement-to-requirement support of highly instrumented T&E aircraft. Based on the given requirements, the system

AIRBORNE SYSTEMS/INSTRUMENTATION (Concluded)

engineers design instrumentation systems utilizing standard instrumentation subsystems, where possible, for quick turnaround and best maintenance support. Procurement of the system components is then initiated. This may entail contacting potential vendors, writing specifications and Justification Review Documents, and evaluating bids. Next is the creation of the instrumentation modification package, it's installation, and it's checkout. "Standard Operating Procedures" detailing instrumentation operation during pre/postflight checkout are written and the aircrew is aided in writing the Partial Flight Manual Supplement. Instrumentation systems collect various types of data for real time transmission (after encryption) and/or onboard recording. One type includes avionics/weapons/electronic warfare/display buss information and sensor data (strain gauges, accelerometers, etc). Aircraft displays (Hud, VSD, RWR,etc) are tape recorded and transmitted, if desired. Film cameras record store separation and a radar transponder enhances radar tracking. All data and events are time correlated with IRIG time. Engineers and electronic "bench" technicians maintain, calibrate, and repair the various instrumentation subsystems utilizing special "hot" benches. System engineers and electronic "preflight" technicians also checkout and setup the instrumentation before flight and download tape recorders and pods after flight.

METEOROLOGICAL INSTRUMENTATION

Mission Statement: Meteorological (ME) support for AFDTC is provided through the 46th Test Wing Weather Flight which provides 24-hour weather forecasting services including preflight weather briefings, pilot-to-forecaster services to aircraft in the area, and weather warnings and advisories.

Unique Capabilities: Provides specialized weather services to both host and tenant units. The Test Meteorological Office provides consultation on the meteorological environment consisting of physics, chemistry and the dynamics of the atmosphere. Provides ME instrumentation at permanent, semi-permanent, and temporary sites, using mobile equipment when necessary. A full range of ME data are gathered to measure the following: wind vector, atmospheric temperature/pressure, relative humidity, dew point, rainfall amount/rates, visibility, visual range, cloud bases, solar radiation, particle size distribution, rainfall size distribution, extinction coefficient, density, defractivity, height, atmospheric electric field, etc.

"SPECIALIZED" ELECTRONIC SYSTEMS FLIGHT

Mission Statement: Provides AFDTC with a complete in-house capability for developing unique TSPI and remote-controlled systems.

Unique Capabilities: Provides electrical and mechanical engineering, design and fabrication services for simple to very complex one-of-a-kind systems. The functions of the flight include:

1. **Electrical and Mechanical design, prototyping, and end-product fabrication of the various sub-systems involved.**
2. **System integration and testing**
3. **Preparation of technical specifications and engineering evaluation reports**
4. **Engineering consultation to AFDTC agencies as well as outside agencies on TSPI, remote control, TM, RF and antennas**
5. **Personnel expertise and equipment to perform the mission**

Outside Customers Supported:

1. **ASC**
2. **Tyndall AFB**
3. **WSMR**

ELECTRONIC DESIGN AND DEVELOPMENT FLIGHT

Mission Statement: Provides AFDTC with a system level capability for developing, integrating, and testing the specialized instrumentation and control systems required in support of all types of ground and flight testing. This in-house capability spans the entire process of acquiring such systems: from "development of requirements" to "design" to "build-up" to "testing" to "installation and training".

Unique Capabilities: The uniqueness of the Electronic Design and Development Flight is its broad based expertise which allows it to perform its mission (in-house development) in a quick response mode without outside support. Equally important is its capability to remain flexible to changes in requirements during the development process with minimal impact on schedule.

ELECTRONIC DESIGN AND DEVELOPMENT FLIGHT (Continued)

Outside Customers Supported:

1. USAF AWC
2. Aeronautical Systems Center
3. AFOTEC
4. U. S. Army
5. U. S. Navy
6. Various foreign governments

AIR-TO-AIR MISSILE MAINTENANCE FACILITY

Mission Statement: Provides the necessary expertise and direction for all missile related activities. Coordinates between Weapons System Evaluation Group (WSEP), Advanced Medium Range Air-to-Air Missile (AMRAAM), and numerous other test and development projects to provide work space, equipment, and technical knowledge, enabling continuous operations. Provides in-depth training to all assigned personnel to ensure management of seven missile systems(AIM-7, AIM-9, AIM-120, AGM-45, AGM-65, AGM-84, AGM-88). Ensures proper management of the Tactical Missile Reporting System (TMRS). Provides periodic maintenance and management of over 70 pieces of missile support equipment. Performs periodic safety inspections ensuring all safety practices are enforced. Provides a quality product to the customer. Provides essential on-the-job- training to assigned personnel.

Unique Capabilities: Has capability to perform maintenance and inspection on telemetry units of AIM-9L/M and AIM-7M missiles.

Outside Customers Supported:

1. Air Warfare Center
2. Weapons System Evaluation Program (WSEP)
3. Hughes Corporation
4. Raytheon Corporation
5. China Lake Depot
6. Georgia Tech Research Institute
7. Harris Corporation
8. Atlantic City Air National Guard

AIR-TO-GROUND MISSILE MAINTENANCE FACILITY

Mission Statement: Used for the assembly, final integration testing, and inspection of guided weapons prior to flight testing. The facility is fully staffed and equipped to support the T&E of the integration of fuzes, warheads, actuators, data links, IMU/GPS, propulsion, airframes/structures, hardware/software, guidance/control, weapons sensors, and flight termination systems. Additionally, build-up and modification of bombs/missiles, as well as integrated systems tests, are performed at this facility. The test chambers in building 999 are rated for Category 1 explosives.

PRECISION MEASUREMENT EQUIPMENT (PMEL) LAB

Mission Statement: Responsible for the maintenance, calibration and certification test, measurement and diagnostic equipment designated Type II, Type III and Type IV PMEL support. Responsible for the calibration and repair of signal generating, waveform measuring, and frequency counting, voltage, current, resistance, inductance, and power measuring instruments, mechanical, electro-mechanical, dimensional and radiation measuring equipment. Responsible for the calibration and repair of F-15 and F-16 Avionics Intermediate Stations.

Unique Capabilities: One of the largest PMELs in the Air Force and the regional facility servicing Northwest Florida. Has an active program currently developing automated calibration testing of equipment.

Outside Customer Supported:

1. **919th Special Operations Wing**
2. **OSD JADO Program**
3. **USAF AWC**
4. **AFOTEC**
5. **Naval EOD School**
6. **Vitro Services**

PRECISION MEASUREMENT FACILITY
SITE III MASS PROPERTIES

Mission Statement: Performs the weight, center of gravity, and moments of inertia measurements on munition and non munition items. Performs reballast procedures on munition and non munition items to provide the test engineers with a reliable product. Performs maintenance and operation of the portable mass properties machine. Used for the world wide field review measurement of stores (FRMS) operation. Mass properties data collected at various bases is put into the mass properties data program for updating the stores technical and mass properties data bank (STAMP), This ensures the project engineers have the proper mass properties data. Performs assembly/disassembly of munitions items for the purpose of adapting the items to the test set. Develops procedures for efficiency and safety of operations on new prototype test items.

MUNITIONS BUILD-UP

Mission Statement: Operates six indoor maintenance/build-up facilities totaling 54,000 square feet and 2 outdoor holding /build-up areas totaling 27,000 square feet. The missile section performs build-up of Air-to-Air, AIM-4, 7, 9, and 120 missiles and Air-to-Ground, AGM-45,65,and 88 missiles. The conventional munitions maintenance shops perform build-up of expendable aircraft countermeasures, aircraft gun ammunitions, GBU-10, 12, 15, 16, 24 and 28 guided bombs, CBU-58, 87 89 and 97 cluster bombs, MK-82, 83, 84, M-117 and 118 general purpose bombs, MC-1 and TMU-28 chemical weapons, nuclear training shapes and BLU-107 cratoring bombs.

MUNITIONS STORAGE AND HANDLING

Mission Statement: Provides the capability for storing and handling over 2,000 different types of munitions used to support DOD and foreign allies test and development projects, and 50 tenant unit munitions supply points. Responsible for inspection, minor maintenance and house keeping on 35 facilities within the 297 acre munitions storage area. Ensures correct storage and compatibility of munitions are maintained in strict compliance with all explosive safety standards. Total munitions storage capacity is 121,729 sq. ft. and total sited net explosive weight (NEW) authorized is 2,287,900 pounds. Capable of storing various sizes of munitions ranging from small arms ammunition to the Tomahawk cruise missile; maximum size of any one item to fit into storage structures would be no greater than 15,000 NEW and a dimension of approximately 18' x 10' x 10'. Provides logistical support to 500 test projects and five different maintenance sites within the munitions storage area. Directly supports several off-base test ranges on the 464,000 acre Eglin test complex. On a yearly basis, moves or delivers over 500 tons net explosive weight/1250 tons total weight of munitions covering more than 15,000 miles.

MUNITIONS STORAGE AND HANDLING (Continued)

Unique Capabilities: Receipt, inspection, storage, maintenance, buildup, shipping and delivery capability is provided for any US or foreign munition used or tested at Eglin AFB. Major munitions categories include both current inventory and prototype general purpose and cluster bombs; precision guided munitions; air-to-air and air-to-ground missiles, nuclear trainers, Navy cruise missiles, Army Hellfire missiles, expendable aircraft countermeasures and small arm/cannon ammunition. Additional items include various British, Norwegian, Israeli, and former-Soviet Bloc munitions. A technical data library with preliminary handling/maintenance data and interim hazard classification is maintained for prototype, modified and foreign munitions.

ARMAMENT MAINTENANCE SECTION

Mission Statement: Inspects and maintains all munition suspension equipment for the 46th Test Wing and the Air Warfare Center aircraft, to include pylons, bomb racks, launchers and adapters for weapons carriage on the F-15, F-16, and F-111 aircraft. Inspects and maintains guns and gun systems on the F-15 and F-16 aircraft, including removal and installation.

Unique Capabilities: Supports Ammo/Gun Test Range 22/C-64/C-74L with gun maintenance and support personnel on a daily basis. Advises test project personnel on modification requirements for AME. Maintains modified equipment for various test projects. Provides maintenance, repair and/or inspection for armament systems components owned by various military and civilian test agencies.

ALTERNATE MISSION EQUIPMENT SECTION

Mission Statement: Stores, controls and accounts for all munition suspension equipment for the 46th Test Wing and Air Warfare Center aircraft. Tracks all in-use equipment and schedules inspections through the maintenance section.

AIRCRAFT REPAIR ELEMENT

Mission Statement: Performs organizational, intermediate, and limited depot-level maintenance beyond the capability of other assigned maintenance activities. Accomplishes troubleshooting analysis, repairs, replacement, rigging, and operational and functional checkout of flight control systems, landing gears, air induction equipment, and canopy and windscreen assemblies. Provides capability for the recovery and reclamation of damaged and crashed aircraft. Maintains, inspects, and repairs all associated equipment required to accomplish the above mission.

AIRCRAFT REPAIR ELEMENT (Continued)

Unique Capabilities: Performs flight control, landing gear, and canopy maintenance on any fighter aircraft in the USAF inventory. They are multi-aircraft qualified and perform intermediate and limited depot-level maintenance, tow target maintenance, and provide crash recovery services on any military or civilian aircraft without exception. Performs aircraft reclamation services on any type of aircraft and provides emergency response/crash recovery service to any aircraft over a three state area. Responds to all ground or inflight emergencies on Eglin and the Fort Walton Beach Regional Airport. Uniquely qualified to work with engineers performing class II modifications on aircraft and systems. Experience includes T-37, T-38, T-39, A-10, F-4, F-5, F-15, F-16, F-111, and UH-1 aircraft maintenance.

FUELS

Mission Statement: Responsible for on-equipment and off-equipment maintenance on aircraft fuel and in-flight refueling systems and components. Inspects, troubleshoots, bench checks, removes, tests, repairs, replaces, services, seals, and modifies systems and components. Performs systems maintenance and servicing of Hydrazine tanks. Provides qualified support for emergency Hydrazine response teams. Maintains proficiency in detection of Hydrazine.

Unique Capabilities: The fuel system repair hangar is a state-of-the-art building and designed for that purpose. It has multi aircraft capability. It has indoor space for two, F-111/F-15 size aircraft, three F-16 size aircraft, or five UH-1N helicopters. The fuel hangar has indoor external fuel tank work area with a lifting hoist. This flight also has the regional hydrazine resource responsibility.

Outside Customers Supported:

1. USAF AWC
2. 187th Tactical Fighter Group, Montgomery, AL, Hydrazine Tank Servicing
3. 926th Fighter Group/XP, Naval Air Station, New Orleans, LA, Hydrazine Tank Servicing

PROPULSION

Mission Statement: Responsible for jet engine intermediate maintenance (JEIM) on General Electric F100-GE-100/129, J79-15, J85-100, Pratt and Whitney TF30-111 and 109, and FW100-PW-100/200/220 engines. Responsible for assembly and disassembly of F100 modular engines and sub-components. Responsible for JEIM on F-15 starting systems and secondary power system components to include testing after maintenance. Responsible for JEIM on GTCP-397 gas turbine compressors used in AM32A-60B auxiliary power units. Responsible for acquisition, modification and testing of surplus and time-expired engines to the J85-100 configuration for use in

PROPULSION (Continued)

the BQM-34S target drone. Provides modified J85-100 engines to the BQM-34S manufacturer for installation into new target drones used by both the Air Force and Navy organizations. Operates the engine test cell which is used for troubleshooting and testing of the above mentioned engines as well as aircraft noise suppression systems and other engine test facilities. Maintains engine support trailers for engine removal/installation and transportation. Ensures adequate spare level to support flying mission of various types and models of F-15 and F-16 aircraft assigned.

Unique Capabilities: Provides full JEIM on F100-100/200/220/220A/220E, J79 and J85 engines. Hush House and twin test cells are available to test all engines. Currently modifying J85 engines for both Air Force and Navy to be used in BQM-34S target drones. Has a steam and citrus-based parts cleaner to minimize hazardous waste.

Outside Customers Supported:

1. Air Force Armament Museum
2. Vitro Services
3. 33rd Fighter Wing (ACC)
4. 9th Special Operations Squadron
5. 475th Weapons System Evaluation Group (ACC)
6. Naval Air Warfare Center

MACHINE SHOP

Mission Statement: Provides a Machine Shop for design, manufacture, modification and repair of RDT&E test items required to support AFDTC test programs of a non-repetitive nature. Manufacture Class II modification kits for installation. From engineer designs blueprints, utilizing CNC production equipment, provides a capability to manufacture prototype test items used by AFDTC engineers, scientists and contractors for various test projects. Provides an intermediate maintenance capability for support of all assigned, transient, and associate tenant aircraft.

Unique Capabilities: This shop is equipped with a modern conventional tool room and CNC machines. A CAD/CAM system is used for design and manufacturing with numerical controlled operations. The shop can machine single items up to 22 feet in length and 4,000 lbs in weight. Two CNC pantograph machines accomplish miniature milling and engraving using nine different fonts. Shop employees include machinist, tool makers and model makers that manufacture to tolerances of .0002 of an inch. Expenditures for aircraft repairs are reduced by in house repair of depot level repairable assets.

MACHINE SHOP (Continued)

Outside Customers Supported:

1. Air Warfare Center
2. 9 SOS
3. 919 (Duke Field)
4. Jet Mod. Drone Program

STRUCTURAL MAINTENANCE

Mission Statement: Provides a Structural Repair Shop for design, manufacture, modification, and repair of RDT&E test items required to support the AFDTC test program of a non-repetitive nature. Manufactures items and works with sheet metal and fiberglass in modifying bombs, missiles, rockets, robots, etc. Manufactures and installs class II modifications parts and kits on aircraft and missiles to include CNC production required by AFDTC engineers, scientists and contractors for development of the test projects. Provides an intermediate maintenance capability to support all AFDTC assigned, transient and associate tenant aircraft.

Unique Capabilities: Maintains operational support of multiple aircraft to include F-111's, F-16's, F-15's, UN-1H and full manufacturing capability for all aircraft tubing assemblies (to include Depot level lines).

Outside Customers Supported:

1. 9 SOS
2. Eglin AFB. 33 FW (ACC)
3. Tyndall AFB.
4. Hurlburt AFB.

METALS PROCESSING

Mission Statement: Provides a Metal Processing Shop for design, manufacture, modification, and repair of test items of a non-repetitive nature. Provides arc, oxy-acetylene, heliarc, tungsten inert gas (TIG) welding, cutting and soldering, used in the fabrication and repair of RDT&E test items required by AFDTC engineers, scientists and contractors for development of test projects. Provides heat treating of aluminum parts and sandblasting capability for the manufacturing and repair of test items. Provides and supports intermediate maintenance repair capabilities for support equipment and all assigned AFDTC, transient aircraft and support for the 33 FW.

METALS PROCESSING (Continued)

Unique Capabilities: Manufacturing capability of environmental shelters that require the use of a large tube bending machine. Manufacture rocket sleds used in the testing of munitions. Support Class II modifications on assigned AFDTC aircraft and modification of the J-85 engines for drone project.

Outside Customers Supported:

1. **VITRO**
2. **9 SOS**
3. **Holloman AFB**
4. **728 ACS**
5. **Air Warfare Center**
6. **919 SOS (Duke Field)**

CORROSION CONTROL

Mission Statement: Inspects and treats corrosion on aircraft, missiles, armament and other related equipment. Provides wash rack facilities to wash aircraft and aircraft parts. Provides a corrosion capability for performing intermediate maintenance and painting on assigned aircraft, age, and class II modification items. Provides RDT&E experimental coating for test engineers on tanks, drones, missiles, and radomes etc.

Outside Customers Supported:

1. **Wright Laboratory - Armament Directorate**
2. **Navy EOD School**
3. **9th SOS**
4. **Seek Eagle Program Office**
5. **Navy Coastal System Laboratory**
6. **919 SOS**
7. **Mil Star Program**

NON-DESTRUCTIVE INSPECTION

Mission Statement: Provides a capability to accomplish optical, penetrant, magnetic particles, ultra sound, eddy current, and radiographic inspections to determine component integrity and serviceability. Conducts experimental tests as to the integrity of RDT&E test designs and specifications. Provides oil analysis to determine wear metal effects on aircraft engines and oil wetted components.

Unique Capabilities: Multi-use facility, equipment, manpower, materials and training are shared equally with the 33rd Fighter Wing (ACC). The only known field level shop with two film processors.

Outside Customers Supported:

1. **Air Warfare Center**
2. **33d Fighter Wing**
3. **Wright Laboratory**
4. **919 Special Operations**

ELECTRO-ENVIRONMENTAL

Mission Statement: Responsible for off-equipment maintenance on aircraft electrical and environmental control systems and components. Inspects, troubleshoots, bench checks, removes, tests, repairs, replaces, services, and modifies systems and components. Provides battery servicing for assigned aircraft, associate tenant aircraft and ground support equipment. Responsible for field maintenance of all aircraft ground support equipment, (AGE), gaseous and liquid oxygen and nitrogen systems. Services life raft cylinders and emergency oxygen bottles, (Life Support Equipment), for all assigned and associate tenant aircraft.

Unique Capabilities: Possesses one of only three K400 generator test stands at field level, and will be only one of two sites in the world capable of running both F-111 and F-15 parts.

Outside Customers Supported:

1. **33rd Tactical Fighter Wing**
2. **9th Special Operations Squadron**
3. **728th Tactical Control Squadron**

PNEUDRAULIC

Mission Statement: Responsible for off-equipment maintenance of pneudraulic components. Inspects, troubleshoots, bench checks, tests, repairs, services, and modifies components. Provides local manufacture and testing of flexible hoses and testing of rigid tubing. Maintains associated Test Stands and support equipment.

Unique Capabilities: Possess two state-of-the-art pneudraulic test stands which allow check-out and repair of all current and projected pneudraulic systems. Because of this capability, depots have authorized depot-level repairs on a case-by-case basis. A citrus-based parts cleaner is used to minimize hazardous waste.

Outside Customers Supported:

1. **Air Force Armament Museum**
2. **33rd Tactical Fighter Wing**
3. **9th Special Operations Squadron**

PATTERNS AND PLASTIC

Mission Statement: Provides a Pattern and Plastic Shop for design, manufacture, modification, and repair of RDT&E test items required to support the test program of a non-repetitive nature. Manufactures items and works with fiberglass, advanced composites, wood, and plastics in modifying bombs, missiles, rockets, etc. Manufactures Class II modification parts and kits on aircraft and missiles. Provides an intermediate maintenance capability to support all AFDTC assigned, transient, and associate tenant aircraft.

Unique Capabilities: Capable of manufacturing and repairing shock mitigation systems under the container development program. This operation facilitates a fully equipped Wood Shop with unlimited support of hardware for finished wood products. Also supports manufacturing of form blocks for aircraft parts in support of class II modification and repair of assigned aircraft. Manufactures various airborne radomes for missiles, rockets and aircraft components using engineer specifications. Fully capable of supporting all DOD aircraft operations.

Outside Customers Supported:

1. **Drone Projects**
2. **Contractors VITRO, Raytheon, etc.**

SURVIVAL EQUIPMENT

Mission Statement: Provides a parachute and survival equipment shop to manufacture, modify, repair, and design item constructed of fabric in support of RDT&E test projects of a non-repetitive nature. Provides an extended intermediate maintenance capability to support aeronautical equipment, parachutes, and other aircraft maintenance requirements for support of AFDTC assigned, transient, and associate tenant aircraft.

Unique Capabilities: This shop has the capability of servicing all personnel parachutes in the Department of Defense inventory. Capable of servicing the Advance Concept Ejection Seat (ACES II) employed on the A-10, B-52, F-16, and F-15 aircraft. Also currently the focal point for the Universal Water Activator Release System.

Outside Customers Supported:

1. U. S. Customs
2. U. S. Army
3. U. S. Navy
4. U. S. Marine Corps
5. AMRAAM Program Office
6. Turkish Air Force

INSPECTION ELEMENT

Mission Statement: Performs maintenance on modified test aircraft undergoing various inspections such as phase, periodic, major, minor, hourly post-flight, and special inspections. Also performs scheduled and unscheduled maintenance. Removes, disassembles, inspects, repairs, reassembles, installs, and operationally checks all assigned aircraft. Determines the condition of airframe and engines and all associated equipment. Performs maintenance on specialized systems such as flight control surfaces, landing gear, and engines. Performs time changes, Time Compliance Technical Orders and special inspections as required by the mission. Performs pre-dock and post-dock meetings to coordinate requirements while in the inspection process.

Unique Capabilities: Capable of performing any of the inspections cited above on any model of F-111, F-16, F-15, F-4, T-38, F-5, UH-1N, or A-10 aircraft. Additionally, given the equipment, they are capable of performing the same inspections on any other Air Force, separate service, or foreign national aircraft. Performs consolidated maintenance with the Aircraft Modification Element. Recently

INSPECTION ELEMENT (Continued)

completed phase inspections and minor aircraft modifications simultaneously, saving an average of six complete days of aircraft downtime on each occurrence. Concurrently perform Time Compliance Technical Orders and special/one time inspections during their phase inspections.

Given the personnel and equipment, six aircraft could be inspected simultaneously on a three shift operation. Unique to the Inspection Element are custom built dock boxes centrally located at the head of each dock within the hangar floor area. These dock boxes enable supervisors to have complete control over every aspect of the inspection/maintenance process. They are wired with telephones, CAMS computers, and electrical power.

AEROSPACE GROUND EQUIPMENT

Mission Statement: Provides field maintenance, periodic inspections, special inspections, servicing, refueling and dispatch as well as technical order modifications on over 500 pieces of powered and non-powered AGE assigned to AFDTC. Provides supervision, production control, quality assurance and supply support for AGE activities. Performs engine teardown, buildup (overhaul) and repair of components, i.e. starters, generators, motors, relays, etc. Responds to trouble calls on equipment in use. Provides equipment operator training to customers. Performs servicing of aircraft oil and hydraulic carts. Collects and recycles waste petroleum products generated by aircraft maintenance. The equipment is, for the most part, the newest and latest designs in the Air Force inventory today.

Unique Capabilities: AGE has supported the latest aircraft in the inventory. For example: F-117A, C-17, RC-135, B-1 and B-2 bombers, E-3A AWACS as well as NATO aircraft such as the Harrier and Tornado. The capability also extends to all other services DOD wide which AGE will be able to support well into the year 2000. Provides test support to Army and Navy aircraft such as helicopters and Navy sea launch cruise missile tests. Provides specialized equipment to contractors and base facilities in support of new and state of the art munitions and electronic warfare testing.

(3.1.D.2) Are specialized targets required to support this facility? Yes/no. If yes, explain.

Yes. HELLFIRE testing requires fully instrumented permanent targets wired for acoustic, video, remote control, and timing data. Targets requiring specific steel hardness, and special coatings (for laser operations) are also provided.

(3.1.D.2.A) Have the specialized targets been validated? Yes/no. If yes, by whom?

Yes. When required, targets are validated by the Missile Space Intelligence Command (MSIC), Huntsville, AL and PM-ITTS. Other appropriate intelligence agencies are called upon as required to validate targets.

(3.1.E.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.

Yes. The facility includes video trackers that can be used to provide TSPI data on any missile, munitions, or bomb drop that occurs on TA C-72. The facility has a telemetry ground station that can acquire, store, and display telemetry data of munition or aircraft testing in most of the land ranges. Three environmental conditioning units can provide temperature conditioning of small munitions. A large launchpad offers the capability of firing from other launchers (tanks, HMMWV, rocket launchers, etc.) with extensive instrumentation. The Hellfire facility also contains a helipad and a 12,000 square-foot hangar.

(3.1.E.1.A) Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

Yes.

T&E Functional Area	Test Type
Air Vehicle	Helicopter Airplane
Armament/Weapon	Missile Launches Rocket Firing Gun Firings Bomb Drops Mortar Shots

(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.

Airspace-Yes. Expansion of the Hellfire airspace within existing Eglin/ASTE airspace is possible; Water-N/A; Land-Yes, this facility can be expanded on existing DoD property.

(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. Up to Secret.

(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. A televideo conference system will be installed to connect the Hellfire Flight Test Facility to Redstone Arsenal and US bases all over the world. This will allow the exchange of real-time video and missile flight data with numerous other test facilities.

(3.1.F.1) Is this a one-of-a-kind facility within the DoD? Yes/no. If yes, describe.

Yes. This is the flight test facility for the US Army's Hellfire Missile. Hellfire Missile test sets, safety footprints, tracking profiles, and video coverage have been developed and installed at this facility for the Hellfire Missile.

(3.1.F.1.A) Within the US Government? Yes/no. If yes, describe.

Yes. This is the flight test facility for the US Army's Hellfire Missile. Hellfire Missile test sets, safety footprints, tracking profiles, and video coverage have been developed and installed at this facility for the Hellfire Missile.

(3.1.F.1.B) Within the US? Yes/no. If yes, describe.

Yes. This is the flight test facility for the US Army's Hellfire Missile. Hellfire Missile test sets, safety footprints, tracking profiles, and video coverage have been developed and installed at this facility for the Hellfire Missile.

(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 FY93 by Military Department.

Yes.

ARMY		NAVY		OTHER	
FY92	FY93	FY92	FY93	FY92	FY93
98.23%	97.50%	0.01%	0.00%	0.00%	0.00%

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

This facility is located on the Armament System Test Environment (ASTE). Refer to the ASTE answer to this question for details.

(3.1.G.2) Who owns and or controls the land under the restricted airspace you use?

This facility is located on the Armament System Test Environment (ASTE). Refer to the ASTE answer to this question for details.

(3.1.G.3) How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

This facility is located on the Armament System Test Environment (ASTE). Refer to the ASTE answer to this question for details.

(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)? Dimensions? Will it support simultaneous users? Yes/no.

This facility is located on the Armament System Test Environment (ASTE). Refer to the ASTE answer to this question for details.

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

This facility is located on the Armament System Test Environment (ASTE). Refer to the ASTE answer to this question for details.

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

This facility is located on the Armament System Test Environment (ASTE). Refer to the ASTE answer to this question for details.

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

This facility is located on the Armament System Test Environment (ASTE). Refer to the ASTE answer to this question for details.

(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.

This facility is located on the Armament System Test Environment (ASTE). Refer to the ASTE answer to this question for details.

(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/riverine, desert, and sea. State the area of each in square miles.

The Hellfire launch, control facility and associated range (C-72) is comprised of approximately 7 square miles of cleared land. Topography is gently rolling land with elevation ranging from 50 to 170 feet. The range is transected by several narrow bottom creeks which drain to Choctawhatchee Bay. Specific vegetative coverage for associated test airspace is unknown but closely parallels that of the entire Eglin Land Test Area.

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

Open Air Munitions Testing Facilities benefit from area soils which consist of ocean-washed sediments from the Piedmont region. Most of the colloidal material is removed, leaving a notably loose soil composed largely of quartz crystals. These soils are poor transmitters of seismic energy and serve to abate propagation of seismic vibrations which could otherwise be damaging to military and civilian infrastructure (i.e. well casing, pipelines, and other structures.) This is an extremely important mitigating factor to take into consideration when designing open air munitions tests. Eglin's soils have allowed AFDTC to conduct extensive munitions test over the last fifty years with minimal impact due to associated seismic noise.

(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.

No.

(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?

Below 32 degrees F:	1 day
Between 32 and 95 degrees:	364 days
Above 95 degrees:	0 days

(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%?

Below 30%:	5 days
Between 30 and 80%:	330 days
Above 80%:	30 days

(3.1.H.6) What is the number of test missions per year (1985 - 1993) canceled due to weather?

FY		FY	
85	0	90	7
86	6	91	1
87	9	92	9
88	2	93	3
89	3		

(3.1.H.7) What is the number of test days per year (1985 - 1993) canceled due to weather?

1985-1991, & 1993: 0; 1992: 2.

(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?

Less than 1 mile:	0 days
Between 1 and 3 miles:	7 days
Greater than 3 miles:	358 days

(This table represents the best conditions that can be expected to occur at sometime during daylight hours (0600 to 1800L))

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

355. This assumes ceiling and/or visibility are at least 1500/3 at some point during daylight (0600 to 1800L).

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

Mission cancellation rates due to weather were 16.67% for FY92 and 3.85% for FY93.

(3.2.A.1) Do supersonic corridors or areas exist? Yes/no.

Not Applicable.

(3.2.A.2) Where are they located relative to your airfield?

Not Applicable.

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

Not Applicable.

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

Not Applicable.

(3.2.A.5) Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

Not Applicable.

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

Not Applicable.

(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.

Not Applicable.

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

Not Applicable.

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

Not Applicable.

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

Not Applicable.

(3.2.B.5) Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

Not Applicable.

(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?

Not Applicable.

(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)

Rotary wing air vehicle testing has been supported at the Hellfire Test Facility. Specifically, the integration of the LBHMMS into the AH-64D helicopter. In addition, the Hellfire facilities current capabilities would allow Hellfire to provide air vehicle and cruise missile tracking, telemetry reception/relay/processing/display for any type of airborne test, and most types of ground tests.

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

Yes. Capability to rehearse tracking of fast moving test items is available and utilized.

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

Three (3) AH-64Ds or other rotary wing aircraft can be supported concurrently at the HELLFIRE pad and hangar.

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

No.

(3.2.C.5) What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

Air-to-ground.

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

The Hellfire Control Facility has five telemetry receivers, three PCM decommutators, and real-time data display capability, independent of CCF. The number of simultaneous missions is dependent upon the TM requirements per mission, but nominally 2-3 missions.

(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.A.1) What is the number of threats simulated?

Not Applicable.

(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?

Not Applicable.

(3.3.A.3) Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

Not Applicable.

(3.3.A.4) Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

Not Applicable.

(3.3.A.5) What is the threat representation (fidelity) and density?

Not Applicable.

(3.3.A.6) Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

Not Applicable.

(3.3.A.7) What geographic dispersion can be simulated?

Not Applicable.

(3.3.A.7.A) Threat lay down?

Not Applicable.

(3.3.A.7.B) Representative distance?

Not Applicable.

(3.3.A.8) Are the threats moveable (i.e. dynamic) within a test scenario? Relocatable to new scenarios? Yes/no

Not Applicable.

(3.3.A.9) Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

Not Applicable.

(3.3.A.10) Is there a limit on simultaneous users? Yes/no. If no, explain.

Not Applicable.

(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.

Not Applicable.

(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?

Not Applicable.

(3.3.B.4) What are the available spectra?

Not Applicable.

(3.3.B.5) Do you have a scene generation capability? Yes/no. If yes, describe.

Not Applicable.

(3.4.A.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?

No.

(3.4.B.1.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?

7 square miles. (Hellfire Facility Only)

(3.4.B.1.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.

Test Area C-72	**3840 acres**

(3.4.B.1.C) What are the maximum ranges (nautical miles) you can test, by type weapon?

Hellfire Missile	**4.32 NM**
Other Munitions	**5.40 NM**

(3.4.B.2.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:

--Unguided 2000 pound-class ballistic weapon
---live?
---inert?
Guided weapon (e.g., GBU-24 class)
---live?
---inert?
Stand-off weapon (e.g., AGM-130 class)
---live?
---inert?

(3.4.B.2.A) (Continued)
Short-range missile (e.g., AIM-9)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL
Long-range missile (e.g., AIM-120)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL

For the Hellfire Test Facility:

Unguided 2000 pound-class ballistic weapon	FY92	FY93
---live?	0	0
---inert?	0	0
Guided weapon (e.g., GBU-24 class)		
---live?	0	0
---inert?	0	0
Stand-off weapon (e.g., AGM-130 class)		
---live?	0	0
---inert?	0	0
---Cruise Missile - inert?	0	0
Short-range missile (e.g., AIM-9)		
---below 5000 feet MSL	54	78
---between 5000 and 20,000 feet MSL	0	0
---above 20,000 feet MSL	0	0
Long-range missile (e.g., AIM-120)	*0	*0
---below 5000 feet MSL		
---between 5000 and 20,000 feet MSL		
---above 20,000 feet MSL		

* All altitudes.

(3.4.B.2.B) Were flight termination systems required? Yes/no.

No.

(3.4.B.2.C) If no missions were scheduled in a category, give the reason(s).

There was no requirement.

(3.4.B.2.D) 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.

No.

APPENDIX A

HELLFIRE TEST FACILITY

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: HELLFIRE

T&E FUNCTIONAL AREA		FISCAL YEAR 86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
EC	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	51,635	41,228	41,516	41,199	45,732	50,089	53,125	48,887
	TEST HOURS	1,614	1,288	1,297	1,287	1,429	1,565	1,660	1,528
	MISSIONS								
OTHER T&E	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								

NOTE: Direct Labor hours are estimated using the "Workload Per Test Per Facility Hour" factor from the Unconstrained Capacity Form.

HELLFIRE TEST FACILITY

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: HELLFIRE TEST FACILITY

ANNUAL HOURS OF DOWNTIME	576
AVERAGE DOWNTIME PER DAY	1.6
AVERAGE HOURS AVAILABLE PER DAY	22.4

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY 717
MISSILE TEST	1	32	32	ANNUAL UNCONSTRAINED CAPACITY 261,632
TYPICAL	0	0	0	
			TOTAL: 32	

NOTE: Typical represents additional tests that could be accomplished if manpower were unconstrained.

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: HELLFIRE TEST FACILITY

AGE: 5 Years

REPLACEMENT VALUE: $2,500,000 TOTAL*

MAINTENANCE AND REPAIR BACKLOG: NONE

DATES OF LAST UPGRADES: NONE**

NATURE OF LAST UPGRADES: See attached for complete list of buildings.

MAJOR UPGRADES PROGRAMMED: None**

1. UPGRADE TITLE:
   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:
   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

*Replacement Cost is MILCON only based on area cost factor of 1.0. Existing facility non-real property equipment and instrumentation costs not included.

**Upgrades are interpreted to be MILCON. Instrumentation/equipment upgrades are in I&M capital investment on additional information chart.

HELLFIRE TEST FACILITY

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Hellfire

FAC NO.	YEAR BUILT	REPLACEMENT VALUE	M&R BACKLOG	LAST UPGRADE	FUTURE UPGRADE
9471	75	$5,000	0	NONE	NONE
9482	89	$187,000	0	NONE	NONE
9483	89	$531,000	0	NONE	NONE
9540	89	$176,000	0	NONE	NONE
9541	89	$503,000	0	NONE	NONE
HANGAR/HELOPAD	94	$1,098,000	0	NONE	NONE
TOTAL $2,500,000					

GENERAL INFORMATION

Facility/Capability Title: HELLFIRE TEST FACILITY

Origin Date: 08/04/94

Service: USAF

Organization/Activity: 46 Test Wing

Location: Eglin AFB, FL

T&E Functional Area: Armament/Weapons

UIC: Not Available.

T&E Test Facility Category: Open Air Range

	T&E	S&T	DE	IE	T&D	OTHER	TOTAL (%)
PERCENTAGE USE:	100	0	0	0	0	0	100
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	0	0	0	0	0	0	0
Armament/Weapons	100	0	0	0	0	0	100
EC	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0

TECHNICAL INFORMATION

Facility/Capability Title: HELLFIRE TEST FACILITY

Facility Description; Including Mission Statement: The Hellfire Test Facility is the test arena for flight testing the US Army's production and developmental Hellfire missiles. The missiles are uploaded onto any of six active launch rails located at the Hellfire Launchpad (TS C-7A). Each pair of launch rails has its own environmental conditioning unit for conditioning the missiles from -45 F to +145 F. The launchpad has permanently installed laser signal monitoring equipment for verifying proper code, Missile Test Sets for downloading missile ground truths, and video cameras for monitoring the mission. The missiles are launched toward instrumented target areas located 3, 5, and 7 km from the launch point on Test Area (TA) C-72. Each target area has permanently installed Explosion Detection Equipment to measure tandem warhead performance, video cameras, and laser detectors to monitor laser spot quality. Located approximately six miles from TS C-7A is TS C-7 Hellfire Control. All launches are controlled, monitored, and initiated from TS C-7 control via a Cable Television (CATV) system. TS C-7 has a helipad and a 12,000 sq ft hangar to support helicopter missions.

Interconnectivity/Multi-Use of T&E Facility: The unique characteristic of the Hellfire Test Facility is the CATV system that allows for remote operation and monitoring of downrange instrumentation and events. The CATV system essentially connects Test Area C-72 and Test Site C-7A and all their resources to Test Site C-7 Hellfire Control. Another unique characteristic is the Hellfire Video Trackers. The trackers have been used successfully to provide TSPI data for the Hypervelocity Weapon System projectile (obtained velocities of 6000 ft/sec), the Hydra 70 (obtained velocities of 3000 ft/sec), and all Hellfire missiles tested at the facility. All video trackers TSPI data is reduced locally at TS C-7. The Hellfire Test Facility supports a variety of weapon testing. Some examples are: LONGBOW, Maverick, FOG-M, Smart Mortar, Advanced Kinetic Energy Missile, and Air-to-Ground WSEP.

Functional Test Areas: Missile miss distance, tandem warhead performance, flight profile, and inflight missile performance.

Summary of Technical Capabilities: Permanently installed instrumentation includes: A Telemetry Ground Station with a bipolar autotracking antenna, horn antenna, five telemetry receivers, seven strip chart recorders, and two PCM stream decommutation/display system; three Video Trackers with on-site TSPI data reduction system; a meteorological system with two ceilometers (cloud Height), lightning tracking, wind speed/direction, humidity, temperature, and pressure; laser spot quality/code verification equipment; 30 miles of Cable Television (CATV) cable; 30 video cameras; 30 video recorders/players; 30 video monitors; associated video equipment; a range communication system that includes seven land nets and seven radios; Explosion Detection System; three environmental conditioning units with remote controllers and data archiving equipment; fourteen 486 PC computers that are the basis for the Hellfire Data Acquisition and Control System; and a helipad and 12,000 sq ft hangar.

Keywords: Remote operations, CATV, Environmental Conditioning, TSPI, Telemetry, Surface-to-Surface Missiles

HELLFIRE TEST FACILITY

ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: HELLFIRE TEST FACILITY

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	2	2	2	2	2	2	2
CONTRACTOR	29	29	29	29	29	29	29
TOTAL	31	31	31	31	31	31	31

*Note: FY95 and beyond are subject to additional manpower reductions.

TOTAL SQUARE FOOTAGE 24,943 SF
TEST AREA SQUARE FOOTAGE 22,943 SF
TONNAGE OF EQUIPMENT 10 TONS
ANNUAL MAINTENANCE COST $150K

OFFICE SPACE SQ FOOTAGE 2000 SF
VOLUME OF EQUIPMENT 35,200 CF
ESTIMATED MOVING COST $6,085K

CAPITAL EQUIPMENT INVESTMENT:

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$1,000K	$400K	0	0	0	0	0

Document Separator

FACILITY/CAPABILITY: B/SS

TEST FACILITY CATEGORY: OAR

% T&E - OVERALL: 95.8

AV: 1.3

EC: 0.5

A/W: 3.1

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5): 6

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92	22	FY93	47
EC:	FY92	4	FY93	18
A/W:	FY92	48	FY93	113

Nation 12 Aug 94

(2.1.A.1) What amount of workload have you performed each year from FY86-93?

Reference the Historical Workload Form provided in Appendix A of this package.

(2.1.B.1) Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP.

Historical, FY 92

Program Element	AV	EC	A/W	OT	OTHER
11127F				X	
27163F			X	X	
27217F	X			X	
27589F				X	
28015F				X	
31310F				X	
35887F				X	
62602F			X	X	
63203F				X	
63228D				X	
63601F				X	
64270F		X			
64602F				X	
65130D			X		
72806F				X	
ARMY				X	
B6404D				X	
NAVY				X	

(2.1.B.1) Continued

Historical, FY 93

Program Element	AV	EC	A/W	OT	OTHER
11127F				X	
27162F			X	X	
27163F			X	X	
27165F			X		
27217F	X			X	
27589F				X	
27590F			X	X	
28030F			X	X	
31310F				X	
35887F				X	
62602F			X	X	
63011F			X		
63203F			X		
63228D				X	
63270F				X	
63307F		X		X	
63714F				X	
63737D			X		
64239F				X	
64270F				X	
64602F			X		
64604F			X	X	
64607F			X	X	
64733F			X		
64754F				X	
64770F				X	
64771D				X	
65804D				X	
65807F				X	

(2.1.B.1) Continued

Historical, FY 93 (Continued)

Program Element	AV	EC	A/W	OT	OTHER
72806F			X	X	
78019F				X	
ARMY			X	X	
B6404D			X	X	
NAVY				X	

Future Years

Program Element	AV	EC	A/W	OT	OTHER
11127F				X	
27162F			X	X	
27163F			X	X	
27165F			X		
27217F	X			X	
27589F				X	
27590F			X	X	
28015F				X	
28030F			X	X	
31310F				X	
35887F				X	
62602F			X	X	
63011F			X		
63203F			X	X	
63228D				X	
63270F				X	
63307F		X		X	
63601F				X	
63714F				X	
63737D			X		
64239F				X	

Future Years (Continued)

Program Element	AV	EC	A/W	OT	OTHER
64270F		X		X	
64602F			X	X	
64604F			X	X	
64607F			X	X	
64733F			X		
64754F				X	
64770F				X	
64771D				X	
65130D			X		
65804D				X	
65807F				X	
72806F			X	X	
78019F				X	
ARMY			X	X	
B6404D			X	X	
NAVY				X	

Note: Due to the methodology and records used to identify program elements versus mission areas, "other" work appears for which specific program elements were not available/identified.

(2.1.B.2) What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93? Reference historical workload chart in Appendix A.

Functional Area	FY92 Workyears	FY93 Workyears
Air Vehicle	.01	.02
Electronic Combat	0	01
Armament/Weapons	.03	.06
Other Test	3.68	1.88
Other	0	.09

Note: Workyears computed by dividing test hours by 1768 hours per workyear.

(2.2.A) Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.).

Reference the Determination of Unconstrained Capacity Form provided in Appendix A of this package.

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

No.

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

Yes.

(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; however, see next question.

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

Yes, on the mission of ESC/AVJ Hanscom AFB MA. Test Area C-3 was established as a tri-service test facility in 1984 by HQ ESC/AVJ (BISS Program Office) which has the joint-service responsibility for test and evaluation of DoD standard electronic external physical security systems to be used by installation security and defense forces of all Services in protecting worldwide military installation and resources against a variety of intruder threats. The basic BISS mission is to detect, identify, and locate unauthorized or potentially hostile personnel and vehicle intrusions into controlled, secured, or protected areas, and the majority of the BISS test facility workload supports ESC/AVJ.

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

Yes. Test & Evaluation for upgrading physical systems are essential for the protection of critical resources (e.g., Alert Aircraft Areas, Weapon Storage Areas, Selected Command Posts).

(3.1.A.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 and external to the site.

0%.

(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.

Not Applicable.

(3.1.B) Facility Condition (MV II)

Reference the Facility Condition Form provided in Appendix A of this package.

(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.
Encroachment:

There are NO limiting encroachment characteristics associated with this facility.

Environmental:

No. Operation of the BISS test site is not currently limited or expected to be limited in the future by any environmental constraints.

(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.
Encroachment:

Not Applicable.

Environmental:

Not Applicable. There are no environmental constraints to increased workload.

(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.

The BISS Test Site is currently operating without any temporary permits or voluntary agreements of an environmental nature.

(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:	253,144
100 Mile Radius:	952,650
150 Mile Radius:	1,211,688
200 Mile Radius:	1,966,382

(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.

Not applicable for air and sea. State highway 285 is used on a daily basis but can be closed for duration of test activities.

(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.1) Do you have specialized facilities which 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 following facilities are currently required to support the BISS mission or are potentially required to support future test mission activities:

SUPPORT FACILITIES LIST

AIR WARFARE CENTER

AFDTC
- Freeman Computer Science Center
  - Test and Analysis
  - System Technology
- Safety
- Electro-Optical/Millimeter Wave Instrumentation
- Airborne Systems/Instrumentation
- Meteorological Instrumentation
- "Specialized" Electronic Systems Flight
- Electronic Design and Development Flight
- Precision Measurement Equipment Lab (PMEL)
- Machine Shop
- Corrosion Control
- Non-Destructive Inspection
- Electro-Environmental
- Patterns and Plastics
- Aerospace Ground Equipment

AIR WARFARE CENTER

The mission of the USAF Air Warfare Center (USAFAWC) is to test and evaluate new or improved weapon systems and air defense radar systems and to support the Combat Air Forces (CAF) in assigned areas of technical expertise. Specific duties include operational testing of the following CAF weapon systems and equipment: electronic combat (EC) systems and support equipment; reconnaissance systems; aircrew training devices (ATDs); life support; command, control, communications, and intelligence (C3I); armament and avionics systems; combat support; chemical warfare defense (CWD); air base and installation security systems (BISSs) and subsystems; and air defense radar systems and equipment. USAFAWC provides technical and operational expertise to assist Headquarters (HQ) Air Combat Command (ACC) in providing operational forces required in support of testing managed by the Air Force Operational Test and Evaluation Center (AFOTEC). USAFAWC also manages and conducts Follow-on Operational Test and Evaluations (FOT&Es) of hardware and software for which AFOTEC serves as the Air Force focal point. USAFAWC develops and evaluates tactics for EC,

AIR WARFARE CENTER (Continued)

avionics and armament, reconnaissance systems, ATDs, life support, C3I, drones, combat support, CWD, BISS, and air defense radar systems and equipment. The Center reprograms designated EC systems to meet mission needs of CAF aircraft. (The peacetime implementation of this mission is through USAFAWC Emergency Reprogramming Center (ERC). The Center also maintains the software that supports the reprogramming of EC systems. USAFAWC creates various mission data configurations in EC systems and manages these configurations according to AFR 800-14. USAFAWC assists the HQ ACC operations staff and CAF units in determining the use of and making improvements to technical equipment and software used by the CAF. USAFAWC assists the HQ ACC staff in the Air Force requirements and acquisition process, including concept exploration, demonstrations, and evaluations. USAFAWC improves the effectiveness of CAF systems through such evaluation programs as the Air-to-Ground Weapon Systems Evaluation Program (A/G WSEP), the Ground to-Ground Weapon Systems Evaluation Program (G/G WSEP), the Electronic Warfare Evaluation Program, the Air-to-Air Weapon Systems Evaluation Program (A/A WSEP), the Periodic Radar Evaluation Program, the Air Force Radar Evaluation Program, and the Precision Guided Munitions Analysis Program. USAFAWC improves the combat capability of CAF personnel through specialized training: Blue Flag exercises (for battle staff), Green Flag exercises (for EC), EC and battle management courses, and USAF Air Ground Operations School (USAFAGOS). USAFAWC operates specific Air Force complexes used for training and testing of Air Force systems and procedures: the C3I complex, Air Force subscale and full-scale aerial target assets, and the USAFAGOS. USAFAWC manages William Tell (the biennial worldwide Air Force air-to-air weapons meet). The Center conducts day-to-day management and execution of ACC war gaming responsibilities, with policy and commitment of ACC resources approval authority remaining with HQ ACC/DO.

FREEMAN COMPUTER SCIENCE CENTER

Test and Analysis

Provides the mathematical and software engineering services required for the measurement, reduction, and analysis of test data, both in real time and post mission, for the 46th Test Wing and for AFDTC tenants. Designs, develops and implements the AFDTC Test Range Central Control Facility (CCF), Telemetry Facility (TELEMAG) and Image Processing Facility. Provides a broad base of mathematical and statistical and computer expertise for the development of data reduction methodology, for the engineering of data reduction and analysis software products, for the design of tests and experiments, and for the analysis of test and experimental data.

No other facility has the integrated capability of telemetry, control radar, threat sites, surveillance radar, and photo-optics in a single location for open air real time testing. The computational capability of the facility allows many data products to be available for the customer as soon as the mission is complete.

The CCF is designed for commonalty/compatibility with DoD instrumentation systems such as GPS, SAI, and Common Airborne Instrumentation. The facility is currently used by other DoD services and US Allies on a regular basis.

Systems Technology

Designs, develops, implements, operates and maintains the AFDTC Scientific Computer Center and its networks. Provides a broad base of expert computer and system engineering consultants. Provides software engineering support for the Eglin scientific and engineering community including development, customization and adaptation of graphics, applications, and system software products. Develops software products for the simulation and/or control of weapon or related systems as required for RDT&E. Operates and maintains the Eglin Decision Support System and the CRAY YMP Supercomputer.

The computer center has a CRAY YMP supercomputer and visualization laboratory, consisting of a 1 Gigabit network to the CRAY, Silicon Graphics workstations, video recording and printing equipment, to aid in the rapid analysis and presentation of simulation data. The center is a node on the Defense Research Engineering Network (DREN).

This is a general purpose computer center that supports all phases of digital models and computer simulations. It is available to all DoD agencies. The largest current user is the Aeronautical Systems Center.

SAFETY

Mission Statement: Provide the Commander, AFDTC, with a coordinated and integrated safety program. Provide accident prevention guidance and technical safety support for Eglin military and contractor agencies. Develops and provides safety training and education, investigates and reports accidents/incidents. Maintains safety survey effort and assures acceptable range safety for all activities conducted under purview of the Commander, AFDTC, according to AFMCR 127-8. Implements the AFDTC system/munitions safety program in conformance with AFR 127-6 and AFDTCR 127-3 and supplements. Assigns explosive hazard classifications for munitions developed or stored at AFDTC and certifies technical data from safety standpoint. Interfaces during all phases (test planning, aircraft modification, flight profile approval, and mission conduct) of multi-national and multi-service weapons test programs to ensure the flight safety directives and principles are adhered to. Safety officers maintain currency in a mission aircraft.

Unique Capabilities: Real-Time Processing Systems: Safety real-time mission analysis and control is provided at the Central Control Facility (CCF) located in building 380. The CCF is designed to provide state-of-the-art analysis and control resources which are needed to satisfy AFDTC's real-time test support requirements through the 1990s. The general-purpose computers which support the CCF have access to most of the range data sources [radars, telemetry, the Gulf Range Drone Control Upgrade System (GRDCUS), and TPX-42].

SAFETY (Continued)

Real-time application programs process data collected during missions to provide real-time analysis and control information. These computer resources, displays, and system flexibility are sufficient to support many different types of missions simultaneously.

ELECTRO-OPTICAL/MILLIMETER WAVE INSTRUMENTATION

Mission Statement: Provides design, development, and operation of airborne and surface EO/MMW instrumentation systems. Provides multispectral targets and targets in back-ground including target expendables. Provides captive carry operation and test of air-to-air, surface-to-air, and surface-to-surface domestic and threat missile seeker guidance, and control units operating in a real and CM environment. Provides quick look and field data reduction and analysis of all collected signature data.

Unique Capabilities: Multispectral signature measurement and captive flight testing capability residing in a cadre of highly qualified technical and range personnel and customized and standard sophisticated EO/MMW instrumentation operating in A-A, A-S, S-S, S-A, and tower/turntable scenarios. Spectral range includes ultra-violet, visible, mid and long wavelength infrared, laser, millimeter wave, seismic, acoustic, and magnetic. Measurement disciplines include temporal, radiometric, spatial, spectral, phase, range, polarization, frequency, and cross section. State-of-the-art sensitivity, resolution, and bandwidth, data rate/recording and seeker/sensor performance measurements are maintained. A suite of targets for target and target in clutter signature measurement and seeker/sensor evaluation are maintained. Archiving of collected data is provided by the Targets and Background Information Library System (TABILS). The capability is uniquely connected to modeling and simulation facilities such as the Guided Weapons Evaluation Facility (GWEF) as a source of data required to drive HITL scene generators and to validate models. The capability is built upon many years of T&E research and engineering expertise and experience.

Outside Customers Supported:

1. ASC
2. USAF AWC
3. AFSOC
4. U. S. ARMY
5. U. S. NAVY

AIRBORNE SYSTEMS/INSTRUMENTATION

Mission Statement: Designs, develops and procures airborne instrumentation systems for installation on aerospace vehicles and airborne threat simulators. Performs T-2 (Class II) modification support and post modification calibration and checkout. Provides pre/postflight instrumentation support for test missions.

Unique Capabilities: The unique capability provided is the design, procurement, installation and support of aircraft instrumentation systems, i.e. the requirement-to-requirement support of highly instrumented T&E aircraft. Based on the given requirements, the system engineers design instrumentation systems utilizing standard instrumentation subsystems, where possible, for quick turnaround and best maintenance support. Procurement of the system components is then initiated. This may entail contacting potential vendors, writing specifications and Justification Review Documents, and evaluating bids. Next is the creation of the instrumentation modification package, it's installation, and it's checkout. "Standard Operating Procedures" detailing instrumentation operation during pre/postflight checkout are written and the aircrew is aided in writing the Partial Flight Manual Supplement. Instrumentation systems collect various types of data for real time transmission (after encryption) and/or onboard recording. One type includes avionics/weapons/electronic warfare/display buss information and sensor data (strain gauges, accelerometers, etc.). Aircraft displays (Hud, VSD, RWR, etc.) are tape recorded and transmitted, if desired. Film cameras record store separation and a radar transponder enhances radar tracking. All data and events are time correlated with IRIG time. Engineers and electronic "bench" technicians maintain, calibrate, and repair the various instrumentation subsystems utilizing special "hot" benches. System engineers and electronic "preflight" technicians also checkout and setup the instrumentation before flight and download tape recorders and pods after flight.

METEOROLOGICAL INSTRUMENTATION

Mission Statement: Meteorological support for AFDTC is provided through the 46th Test Wing Weather Squadron which provides 24-hour weather forecasting services including preflight weather briefings, pilot-to-forecaster services to aircraft in the area, and weather warnings and advisories.

Unique Capabilities: Provides specialized weather services to both host and tenant units. The Test Meteorological Office provides consultation on the meteorological environment consisting of physics, chemistry and the dynamics of the atmosphere. Provides ME instrumentation at permanent, semi-permanent, and temporary sites, using mobile equipment when necessary. A full range of ME data are gathered to measure the following: wind vector, atmospheric temperature/pressure, relative humidity, dew point, rainfall amount/rates, visibility, visual range, cloud bases, solar radiation, particle size distribution, rainfall size distribution, extinction coefficient, density, defractivity, height, atmospheric electric field, etc.

"SPECIALIZED" ELECTRONIC SYSTEMS FLIGHT

Mission Statement: Provides AFDTC with a complete in-house capability for developing unique TSPI and remote-controlled systems.

Unique Capabilities: Provides electrical and mechanical engineering, design and fabrication services for simple to very complex one-of-a-kind systems. The functions of the flight include:

1. Electrical and Mechanical design, prototyping, and end-product fabrication of the various sub-systems involved.
2. System integration and testing
3. Preparation of technical specifications and engineering evaluation reports
4. Engineering consultation to AFDTC agencies as well as outside agencies on TSPI, remote control, TM, RF and antennas
5. Personnel expertise and equipment to perform the mission

Outside Customers Supported:

1. ASC
2. Tyndall AFB
3. WSMR

ELECTRONIC DESIGN AND DEVELOPMENT FLIGHT

Mission Statement: Provides AFDTC with a system level capability for developing, integrating, and testing the specialized instrumentation and control systems required in support of all types of ground and flight testing. This in-house capability spans the entire process of acquiring such systems: from "development of requirements" to "design" to "build-up" to "testing" to "installation and training".

Unique Capabilities: The uniqueness of the Electronic Design and Development Flight is its broad based expertise which allows it to perform its mission (in-house development) in a quick response mode without outside support. Equally important is its capability to remain flexible to changes in requirements during the development process with minimal impact on schedule.

Outside Customers Supported:

1. USAF AWC
2. Aeronautical Systems Center
3. AFOTEC
4. U. S. Army
5. U. S. Navy
6. Various foreign governments

PRECISION MEASUREMENT EQUIPMENT (PMEL) LAB

Mission Statement: Responsible for the maintenance, calibration and certification test, measurement and diagnostic equipment designated Type II, Type III and Type IV PMEL support. Responsible for the calibration and repair of signal generating, waveform measuring, and frequency counting, voltage, current, resistance, inductance, and power measuring instruments, mechanical, electro-mechanical, dimensional and radiation measuring equipment. Responsible for the calibration and repair of F-15 and F-16 Avionics Intermediate Stations

Unique Capabilities: One of the largest PMELs in the Air Force and the regional facility servicing Northwest Florida. Has an active program currently developing automated calibration testing of equipment.

Outside Customer Supported:

1. 919th Special Operations Wing
2. OSD JADO Program
3. USAF AWC
4. AFOTEC
5. Naval EOD School
6. Vitro Services

MACHINE SHOP

Mission Statement: Provides a Machine Shop for design, manufacture, modification and repair of RDT&E test items required to support AFDTC test programs of a non-repetitive nature. Manufacture Class II modification kits for installation. From engineer designs blueprints, utilizing CNC production equipment, provides a capability to manufacture prototype test items used by AFDTC engineers, scientists and contractors for various test projects. Provides an intermediate maintenance capability for support of all assigned, transient, and associate tenant aircraft.

Unique Capabilities: This shop is equipped with modern conventional toolroom and CNC machines. A CAD/CAM system is used for design and manufacturing with numerical controlled operations. The shop can machine single items up to 22 feet in length and 4,000 lbs in weight. Two CNC pantograph machines accomplish miniature milling and engraving using nine different fonts. Shop employees include machinist, tool makers and model makers that manufacture to tolerances of .0002 of an inch. Aircraft expenditures are reduced by in house repair of depot level repairable assets.

MACHINE SHOP (Continued)

Outside Customers Supported:

1. Air Warfare Center
2. 9 SOS
3. 919 (Duke Field)
4. Jet Mod. Drone Program

CORROSION CONTROL

Mission Statement: Inspects and treats corrosion on aircraft, missiles, armament and other related equipment. Provides wash rack facilities to wash aircraft and aircraft parts. Provides a corrosion capability for performing intermediate maintenance and painting on assigned aircraft, age, and class II modification items. Provide RDT&E experimental coating for test engineers on tasks, drones, missiles, and radomes etc.

Outside Customers Supported:

1. Wright Laboratory - Armament Division
2. Navy EOD School
3. 9th SOS
4. Seek Eagle Program Office
5. Navy Coastal System Laboratory
6. 919 SOS
7. Mill Star Program

NON-DESTRUCTIVE INSPECTION

Mission Statement: Provides a capability to accomplish optical, penetrant, magnetic particles, ultra sound, eddy current, and radiographic inspections to determine component integrity and serviceability. Conducts experimental tests as to the integrity of RDT&E test designs and specifications. Provides oil analysis to determine wear metal effects on aircraft engines and oil wetted components.

Unique Capabilities: Multi-use facility, equipment, manpower, materials and training are shared equally with the 33rd Fighter Wing (ACC). The only known field level shop with two film processors.

NON-DESTRUCTIVE INSPECTION (Continued)

Outside Customers Supported:

1. Air Warfare Center
2. 33d Fighter Wing
3. Wright Laboratory
4. 919 Special Operations

ELECTRO-ENVIRONMENTAL

Mission Statement: Responsible for off-equipment maintenance on aircraft electrical and environmental control systems and components. Inspects, troubleshoots, bench checks, removes, tests, repairs, replaces, services, and modifies systems and components. Provides battery servicing for assigned aircraft, associate tenant aircraft and ground support equipment. Responsible for field maintenance of all aircraft ground support equipment, (AGE), gaseous and liquid oxygen and nitrogen systems. Services life raft cylinders and emergency oxygen bottles, (Life Support Equipment), for all assigned and associate tenant aircraft.

Unique Capabilities: Possesses one of only three K400 generator test stands at field level, and will be only one of two sites in the world capable of running both F-111 and F-15 parts.

Outside Customers Supported:

1. 33rd Tactical Fighter Wing
2. 9th Special Operations Squadron
3. 728th Tactical Control Squadron

PATTERNS AND PLASTIC

Mission Statement: Provides a Pattern and Plastic Shop for design, manufacture, modification, and repair of RDT&E test items required to support the test program of a non-repetitive nature. Manufactures items and works with fiberglass, advanced composites, wood, and plastics in modifying bombs, missiles, rockets, etc. Manufactures Class II modification parts and kits on aircraft and missiles. Provides an intermediate maintenance capability to support all AFDTC assigned, transient, and associate tenant aircraft.

PATTERNS AND PLASTIC (Continued)

Unique Capabilities: Capable of manufacturing and repairing shock mitigation system under the container development program. This operation facilitates a fully equipped Wood Shop with unlimited support of hardware for finished wood products. Also supports manufacturing of form blocks for aircraft parts in support of class II modification and repair of assigned aircraft. Manufactures various airborne radomes for missiles, rockets and aircraft components using engineer specifications. Fully capable of supporting all DOD aircraft operations.

Outside Customers Supported:

1. Drone Projects
2. Contractors VITRO, Raytheon, etc.

AEROSPACE GROUND EQUIPMENT

Mission Statement: Provides field maintenance, periodic inspections, special inspections, servicing, refueling and dispatch as well as technical order modifications on over 500 pieces of powered and non-powered AGE assigned to AFDTC. Provides supervision, production control, quality assurance and supply support for AGE activities. Performs engine teardown, buildup (overhaul) and repair of components, i.e. starters, generators, motors, relays, etc. Responds to trouble calls on equipment in use. Provides equipment operator training to customers. Performs servicing of aircraft oil and hydraulic carts. Collects and recycles waste petroleum products generated by aircraft maintenance. The equipment is, for the most part, the newest and latest designs in the Air Force inventory today.

Unique Capabilities: AGE has supported the latest aircraft in the inventory. For example: F-117A, C-17, RC-135, B-1 and B-2 bombers, E-3A AWACS as well as NATO aircraft such as the Harrier and Tornado. The capability also extends to all other services DOD wide which AGE will be able to support well into the year 2000. Provides test support to Army and Navy aircraft such as helicopters and Navy sea launch cruise missile tests. Provides specialized equipment to contractors and base facilities in support of new and state of the art munitions and electronic warfare testing.

(3.1.D.2) Are specialized targets required to support this facility? Yes/no. If yes, explain.

No.

(3.1.D.2.A) Have the specialized targets been validated? Yes/no. If yes, by whom?

Not Applicable.

(3.1.E.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.

No.

(3.1.E.1.A) Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

Yes.

T&E Functional Area	Test Type
Other	Department of Transportation (DOT) Container Security Systems
	Defense Nuclear Agency (DNA) Physical Security Systems
	Department of Energy (DOE) Physical Security Systems
	U.S. Border Security Interdiction Systems
	Flightline Video Enhancement Surveillance Systems
	National Security Agency (NSA) Physical Security Systems
	Federal Highway Administration (FHWA) Intelligent Vehicle Highway Systems (IVHS)
	Physical security Barrier Systems

(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.

Airspace-N/A; Water-N/A; Land-Yes, this facility can be expanded on existing DOD property.

(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. Secret.

(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.

No.

(3.1.F.1) Is this a one-of-a-kind facility within the DoD? Yes/no. If yes, describe.

Yes. The Base and Installation Security Systems (BISS) facility is located at Test Area C-3, Eglin AFB FL. The site encompasses 752 acres of cleared land. Formerly an active auxiliary air field, with asphalt runways and concrete ramp still in place, Test Area C-3 provides an ideal "real world" test environment for test and evaluation of physical security systems. The site includes various lighting systems, security fencing arrangements, surveillance and control towers, site operations facility and a full range of test equipment and instrumentation. Test Area C-3 was established as a tri-service test facility in 1984 by HQ ESC/AVJ, Hanscom AFB MA. HQ ESC/AVJ BISS Program Office has the joint-Service responsibility for test and evaluation of DoD standard electronic external physical security systems to be used by installation security and defense forces of all Services in protecting worldwide military installations and resources against a variety of intruder threats. The basic BISS mission is to detect, identify, and locate unauthorized or potentially hostile personnel and vehicle intrusions into a controlled, secured or protected areas.

(3.1.F.1.A) Within the US Government? Yes/no. If yes, describe.

Yes. Test Area C-3 described in paragraph 3.1.F.1. above is the only known US Government test area that has the facility and capability for test and evaluation of physical security systems.

(3.1.F.1.B) Within the US? Yes/no. If yes, describe.

Yes. Test Area C-3 described in paragraph 3.1.F.1. above is the only known US test area that has the facility and capability for test and evaluation of physical security systems.

(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 FY93 by Military Department.

ARMY		NAVY		OTHER	
FY92	FY93	FY92	FY93	FY92	FY93
0.00%	1.40%	0.00%	1.18%	0.00%	2.26%

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

This facility is located on Armament Systems Test Environment (ASTE). Refer to the ASTE answer to this question for details.

(3.1.G.2) Who owns and or controls the land under the restricted airspace you use?

This facility is located on Armament Systems Test Environment (ASTE). Refer to the ASTE answer to this question for details.

(3.1.G.3) How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

This facility is located on Armament Systems Test Environment (ASTE). Refer to the ASTE answer to this question for details.

(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)? Dimensions? Will it support simultaneous users? Yes/no.

This facility is located on Armament Systems Test Environment (ASTE). Refer to the ASTE answer to this question for details.

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

This facility is located on Armament Systems Test Environment (ASTE). Refer to the ASTE answer to this question for details.

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

This facility is located on Armament Systems Test Environment (ASTE). Refer to the ASTE answer to this question for details.

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

This facility is located on Armament Systems Test Environment (ASTE). Refer to the ASTE answer to this question for details.

(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.

This facility is located on Armament Systems Test Environment (ASTE). Refer to the ASTE answer to this question for details.

(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/riverine, desert, and sea. State the area of each in square miles.

Not Applicable.

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

BISS benefits from area soils which consist ocean-washed sediments from the Piedmont region. Most of the colloidal material is removed, leaving a notably loose soil composed largely of quartz crystals. These soils are poor transmitters of seismic energy making them ideal for isolating extremely sensitive instrumentation from ambient vibrations. This is extremely important for intrusion and detection instrumentation test and evaluation to be successfully isolated from regional seismic noise sources (i.e., civilian roadway traffic). As a result AFDTC's BISS test facility has been able to successfully operate with minimal interference from noise events generated by military and civilian activities in the region.

(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.

No.

(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?

Below 32 degrees F:	1 day
Between 32 and 95 degrees:	364 days
Above 95 degrees:	0 days

(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%?

Below 30%:	5 days
Between 30 and 80%:	330 days
Above 80%:	30 days

(3.1.H.6) What is the number of test missions per year (1985 - 1993) canceled due to weather?

FY		FY	
85	0	90	0
86	0	91	0
87	0	92	0
88	0	93	0
89	0		

(3.1.H.7) What is the number of test days per year (1985 - 1993) canceled due to weather?

1985-1991, & 1993: 0; 1992: 2.

(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?

Less than 1 mile:	0 days
Between 1 and 3 miles:	7 days
Greater than 3 miles:	358 days

(This table represents the best conditions that can be expected to occur at sometime during daylight hours (0600 to 1800L))

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

355. This assumes ceiling and/or visibility are at least 1500/3 at some point during daylight (0600 to 1800L).

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

0%.

(3.2.A.1) Do supersonic corridors or areas exist? Yes/no.

Not Applicable.

(3.2.A.2) Where are they located relative to your airfield?

Not Applicable.

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

Not Applicable.

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

Not Applicable.

(3.2.A.5) Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

Not Applicable.

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

Not Applicable.

(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.

Not Applicable.

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

Not Applicable.

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

Not Applicable.

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

Not Applicable.

(3.2.B.5) Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

Not Applicable.

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

Not Applicable.

(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)

Not Applicable.

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

Not Applicable.

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

Not Applicable.

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

Not Applicable.

(3.2.C.5) What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

Not Applicable.

(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.A.1) What is the number of threats simulated?

Not Applicable.

(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?

Not Applicable.

(3.3.A.3) Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

Not Applicable.

(3.3.A.4) Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

Not Applicable.

(3.3.A.5) What is the threat representation (fidelity) and density?

Not Applicable.

(3.3.A.6) Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

Not Applicable.

(3.3.A.7) What geographic dispersion can be simulated?

Not Applicable.

(3.3.A.7.A) Threat lay down?

Not Applicable.

(3.3.A.7.B) Representative distance?

Not Applicable.

(3.3.A.8) Are the threats moveable (i.e., dynamic) within a test scenario? Relocatable to new scenarios? Yes/no

Not Applicable.

(3.3.A.9) Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

Not Applicable.

(3.3.A.10) Is there a limit on simultaneous users? Yes/no. If no, explain.

Not Applicable.

(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.

Not Applicable.

(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?

Not Applicable.

(3.3.B.4) What are the available spectra?

Not Applicable.

(3.3.B.5) Do you have a scene generation capability? Yes/no. If yes, describe.

Not Applicable.

(3.4.A.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?

Not Applicable.

(3.4.B.1.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?

Not Applicable.

(3.4.B.1.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.

Not Applicable.

(3.4.B.1.C) What are the maximum ranges (nautical miles) you can test, by type weapon?

Not Applicable.

(3.4.B.2.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:

Unguided 2000 pound-class ballistic weapon
---live?
---inert?
Guided weapon (e.g., GBU-24 class)
---live?
---inert?
Stand-off weapon (e.g., AGM-130 class)
---live?
---inert?
Short-range missile (e.g., AIM-9)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL
Long-range missile (e.g., AIM-120)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL

Not Applicable.

(3.4.B.2.B) Were flight termination systems required? Yes/no.

Not Applicable.

(3.4.B.2.C) If no missions were scheduled in a category, give the reason(s).

Not Applicable.

(3.4.B.2.D) 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.

Not Applicable.

APPENDIX A

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: BASE INSTALLATION SECURITY SYSTEMS (BISS)

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	18	0	0	0	0	66	200	426
	TEST HOURS	2	0	0	0	0	7	22	47
	MISSIONS								
EC	DIRECT LABOR	0	0	0	12	0	8	38	160
	TEST HOURS	0	0	0	1	0	1	4	18
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	4	34	295	296	1,936	157	432	1,015
	TEST HOURS	0	4	33	33	215	17	48	113
	MISSIONS								
OTHER T&E	DIRECT LABOR	104,191	72,653	94,341	84,120	102,897	111,345	58,606	29,970
	TEST HOURS	11,577	8,073	10,482	9,347	11,433	12,372	6,512	3,330
	MISSIONS								
OTHER	DIRECT LABOR	0	0	60	56	0	0	42	1,385
	TEST HOURS	0	0	7	6	0	0	5	154
	MISSIONS								

Note: Test Hours were estimated by dividing Direct Labor Hours by 9.

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: BASE AND INSTALLATIONS SECURITY SYSTEMS (BISS)

			ANNUAL HOURS OF DOWNTIME	312
			AVERAGE DOWNTIME PER DAY	.85
			AVERAGE HOURS AVAILABLE PER DAY	23.15
TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY 1,250
DT&E/IOT&E/QT&E/ QOT&E/TECH EVAL	4	9	36	ANNUAL UNCONSTRAINED CAPACITY 456,287
TYPICAL	2	9	18	
			TOTAL 54	

Note: "Typical" represents additional tests that could be accomplished if manpower were unconstrained.

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: BASE AND INSTALLATIONS SECURITY SYSTEMS (BISS) FACILITY

AGE: 13-23 Years

REPLACEMENT VALUE: $1,134,000 TOTAL*

MAINTENANCE AND REPAIR BACKLOG: $10,000

DATES OF LAST UPGRADES: Unknown**

NATURE OF LAST UPGRADES: See attached for complete list of buildings.

MAJOR UPGRADES PROGRAMMED: None**

1. UPGRADE TITLE:
   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

2. UPGRADE TITLE:
   TOTAL PROGRAMMED AMOUNT:
   SUMMARY DESCRIPTION:

*Replacement cost is MILCON only based on area cost factor of 1.0. Existing facility non-real property equipment and instrumentation costs not included.

**Upgrades are interpreted to be MILCON. Instrumentation/equipment upgrades are in I&M capital investment on Additional Information Chart.

FACILITY CONDITION (Continued)

FACILITY/CAPABILITY TITLE: BASE AND INSTALLATIONS SECURITY SYSTEMS (BISS) FACILITY

FAC NO.	YEAR BUILT	REPLACEMENT VALUE	M&R BACKLOG	LAST UPGRADE	FUTURE UPGRADE
2068	80	$609,000	$10,000	UNKNOWN	NONE
2070	75	$37,000	0	UNKNOWN	NONE
2073	81	$167,000	0	UNKNOWN	NONE
2074	77	$15,000	0	UNKNOWN	NONE
2075	76	$121,000	0	UNKNOWN	NONE
2076	79	$84,000	0	UNKNOWN	NONE
4012	71	$24,000	0	UNKNOWN	NONE
4015	74	$77,000	0	UNKNOWN	NONE
		TOTAL $1,134,000			

GENERAL INFORMATION

Facility/Capability Title: BASE AND INSTALLATIONS SECURITY SYSTEMS (BISS) FACILITY

Origin Date: 08/04/94

Service: USAF

Organization/Activity: 46 Test Wing

Location: Eglin AFB, FL

T&E Functional Area: Other Test

UIC: Not Available

T&E Test Facility Category: Open Air Range

	T&E	S&T	DE	IE	T&D	OTHER	TOTAL (%)
PERCENTAGE USE:	95.8	0	0	0	4.2	0	100
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	1.3	0	0	0	0	0	1.3
Armament/Weapons	3.1	0	0	0	0	0	3.1
EC	0.5	0	0	0	0	0	0.5
Other	90.9	0	0	0	4.2	0	95.1

TECHNICAL INFORMATION

Facility/Capability Title: BASE AND INSTALLATIONS SECURITY SYSTEMS (BISS) FACILITY

Facility Description; Including Mission Statement: The Base and Installations Security Systems (BISS) Facility (Test Area C-3) at Eglin encompasses 752 acres and is dedicated to evaluation of security systems against typical threat scenarios against priority resources (e.g., alert aircraft parking areas, weapons storage areas, command posts). The mission is to provide a DoD test arena to evaluate the best mix and layout of external and internal physical security systems to detect intruder penetrations typical of those encountered for protection of a base and/or installation.
Interconnectivity/Multi-Use of T&E Facility: Test Area C-3 is a major manned test facility with normal day-to-day operations independent of other test areas; however, the equipment and personnel are deployed on a regular basis to provide installation and test support at other Eglin facilities or remote government installations to obtain the specified test environment (i.e., vegetation, snow, aircraft shelter).
Functional Test Areas: Various security systems and sensors individually and/or combined are subjected to field activities to determine the extent to which established Development Test and Evaluation (DT&E), Initial Operational Test and Evaluation (IOT&E), Qualification Test and Evaluation (QT&E) and Qualification Operational Test and Evaluation (QOT&E) objectives are met.
Summary of Technical Capabilities: Technical capabilities include: layout, installation, and test of exterior/interior physical security systems, including at worldwide installation sites; target-activated sensors; weather instrumentation; video monitor and data transmission systems; communication systems; sensor control/data acquisition systems; range safety and control; sensor employment; personnel penetration support; and general mission operator/monitor support. Manning is required for test support 24 hours per day, 7 days per week, during all or portions of each test program.
Keywords: Physical Security, Resource protection, Security Surveillance, Flightline Video Enhancement, BISS, DT&E, IOT&E, T&E, QOT&E.

ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: BASE AND INSTALLATIONS SECURITY SYSTEMS (BISS) FACILITY

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	4	4	4	4	3	3	3
CONTRACTOR	29	29	29	29	29	29	29
TOTAL	33	33	33	33	32	32	32

* Note: FY 95 and beyond are subject to additional manpower reductions.

TOTAL SQUARE FOOTAGE	14,225 SF		
TEST AREA SQUARE FOOTAGE	6,540 SF	OFFICE SPACE SQ FOOTAGE	2,800 SF
TONNAGE OF EQUIPMENT	98,234 POUNDS	VOLUME OF EQUIPMENT	12,330 CF
ANNUAL MAINTENANCE COST	$79,819	ESTIMATED MOVING COST	$325,000

CAPITAL EQUIPMENT INVESTMENT:

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$45K	$65K	$90K	$80K	$70K	$50K	$40K

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T&E PERCENTAGES

SITE/ACTIVITY: 46 TEST GROUP @ HOLLOMAN AFB, NM

FACILITY	TOTAL % T&E	AV	A/W	EC	OTHER	
CIGTF	100	78.6	11.2	5.6	4.6	AV MF
RATSCAT/RAMS	100	0	0	100	0	EC MF
HOLLOMAN HIGH SPEED SLED	100	16.8	61.1	4.5	17.6	A/W MF

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FACILITY/CAPABILITY: CIGTF @ HMN AFB

TEST FACILITY CATEGORY: MF

% T&E - OVERALL: 100 DRS

AV: 78.6 DRS

EC: 5.6 DRS

A/W: 11.2 DRS

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5): 52 DRS

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92	42,200	FY93	33,800
EC:	FY92	0	FY93	2,400
A/W:	FY92	8,000 DRS	FY93	4,800 DRS

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CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

(2.1.A.1) What amount of workload have you performed each year from FY86-93?

Reference the Historical Workload Form provided in Appendix A of this package.

(2.1.B.1) Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP. The Military Departments will provide total funding amounts appropriated for all PEs identified in each functional area shown above.

FY92

Program Element	AV	EC	A/W	OT	OTHER
65708F	X				
35164F	X	X	X		
63311F			X		
64312F			X		

FY93

Program Element	AV	EC	A/W	OT	OTHER
65708F	X				
35164F	X	X	X		
11329A	X				
63311F			X		
64312F			X		

Future Years

Program Element	AV	EC	A/W	OT	OTHER
11324Z		X	X		
65708F	X				
64201F	X				
35164F	X	X	X	X	
11329A	X				

CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

60322E	X				

(2.1.B.2) What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

Functional Area	FY92 Workyears	FY93 Workyears
Air Vehicle	23.87	19.12
Electronic Combat	0	1.36
Armament/Weapons	4.52	2.71
Other Test	.57	1.13
Other	0	0

Note: Workyears computed by dividing test hours by 1768 hours per workyear.

(2.2.A) Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.).

Reference the Determination of Unconstrained Capacity Form provided in Appendix A of this package.

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

No. The 46th Guidance Test Squadron facilities unconstrained capability is limited only by test station assets, i.e., those assets required to test and gather test and reference data (aircraft, computers, etc.).

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

Yes.

(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. The Central Inertial Guidance Test Facility (CIGTF) facility does not have a specific service that relates to the host AFB organization.

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

Yes. Central Inertial Guidance Test Facility (CIGTF) does provide services that impact other test missions at Naval Research and Development, Warminister PA; Electronic Proving Ground, Ft Huachuca; Pax River, Patuxent MD; by virtue of the fact that CIGTF is the Responsible Test Organization (RTO) for all DOD Global Positioning System (GPS) User Equipment testing/certification.

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

Yes. The mission of Central Inertial Guidance Test Facility (CIGTF) is to test and certify Global Positioning System (GPS) and inertial avionics subsystems that are central to most avionics architecture and are considered essential to operational effectiveness for all three services.

(3.1.A.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 and external to the site.

0%. Assuming that "real-time" data exchange implies hard-wired or radio-frequency data transmission, we do not have such interconnections with other facilities.

(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.

Not Applicable.

(3.1.B) Facility Condition (MV II)

Reference the Facility Condition Form provided in Appendix A of this package.

(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.

No, there are no current environmental or encroachment characteristics that limit the operation of Central Inertial Guidance Test Facility (CIGTF).

(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.

Not Applicable.

(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.

No.

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

Within 50 mile radius:	40,000
Within 100 mile radius:	690,000
Within 150 mile radius:	740,000
Within 200 mile radius:	1,290,000

NOTE: The US/Mexico border lies within the 100, 150, and 200 mile radius areas. Population centers across the border were not included in the totals.

(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.

Not Applicable. Commercial air/land/sea traffic routes do not interfere with mission accomplishment. Mission accomplishment occurs within military controlled airspace (controlled by White Sands Missile Range or Holloman Air Force Base) or is designed to not interfere with FAA controlled airspace (commercial user).

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

None. Reference answer to question 3.1.C.5. Because missions are accomplished within military controlled airspace or are specifically designed to be accomplished within civilian controlled airspace without interference, there were no lost missions due to commercial or public use.

(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.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.

The extensive test range is set up on White Sands Missile Range (WSMR). The GTS has several surface routes set up to support van testing on WSMR. These routes encompass approximately 120 miles of both paved and non paved roads. The GTS has 128 Defense Mapping Agency (DMS) surveyed bench marks along these routes.

The GTS is located 7 miles from the Holloman High Speed Test Track, a rocket sled test facility offering dynamic, missile-like testing. The Test Track is extensively used by the GTS to test guidance and navigation systems and components in unique environments tailored to exercise virtually all inertial, as well as Global Positioning System (GPS) and other aiding, error sources.

The WSMR is the most heavily and accurately surveyed national range for gravity anomalies in the US. This survey was established in 1973 with the Absolute Gravity Monument in the Advanced Inertial Test Lab (AITL) building. This monument is part of the Mid-Continent Gravity Baseline. The Monument will have the new generation Laser Gravity Meter, with this, gravity anomalies will be known to one microgal.

(3.1.D.2) Are specialized targets required to support this facility? Yes/no. If yes, explain.

No. Specialized targets are not required to support tests at this facility.

(3.1.D.2.A) Have the specialized targets been validated? Yes/no. If yes, by whom?

Not Applicable. The purpose of this organization is to test navigation and guidance systems. Specialized targets are not used to accomplish this type of testing; therefore validation of such targets is not applicable.

CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

(3.1.E.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.

Yes. There is a controlled DOD White Sands Missile Range (WSMR) range of 4000+ square miles, with very little habitation surrounding the range. The area is seismically stable to the micro-g region required for precision guidance/navigation system T&E. The weather is excellent over 200 days per year, with unlimited visibility. The WSMR range has 128 miles of precision surveyed road for van and other open air testing.

(3.1.E.1.A) Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

Yes. We successfully absorbed Global Positioning System (GPS) aiding/integration into inertial guidance and navigation. We absorbed a new commercial navigation market with the FAA. We could absorb more EW work in view of our excellent weather and more air vehicle T&E for the same reason.

(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. Outside the 4000+ square mile White Sands Missile Range (WSMR), habitation is limited. For this very reason, the Governor of New Mexico has established an office for space commercialization, intending to use this same area of the state for spaceport (Single Stage to Orbit) activity.

(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. Presently authorized to Secret/Special Access Required (SAR). Several months ago, we initiated upgrades and approval requests to accommodate Top Secret/SAR.

(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.

No.

(3.1.F.1) Is this a one-of-a-kind facility within the DOD? Yes/no. If yes, describe.

Yes. The 46 Guidance Test Squadron (GTS) operates the Central Inertial Guidance Test Facility (CIGTF). This premier guidance test facility has been designated as the DOD focal point for test and evaluation of aircraft inertial and aided-inertial navigation equipment and has been given responsibility for establishing authoritative, standardized test procedures and evaluation criteria. Moreover, CIGTF was designated by the Global Positioning System (GPS) Joint Program Office as the Responsible Test Organization (RTO) for GPS and GPS/Inertial user equipment. As such, CIGTF has several unique test facilities. The Advanced Inertial Test Lab (AITL) is the seismically quietest facility in the nation. This test facility allows the testing of extremely precise pointing and tracking equipment for use in space and in ICBM guidance systems. The 260" centrifuge is the largest precision centrifuge in the nation and allows for test items up to 700 pounds and sustained accelerations of 100g.

(3.1.F.1.A) Within the US Government? Yes/no. If yes, describe.

Yes. The 46 Guidance Test Squadron operates the Central Inertial Guidance Test Facility (CIGTF). This premier guidance test facility has been designated as the DOD focal point for test and evaluation of aircraft inertial and aided-inertial navigation equipment and has been given responsibility for establishing authoritative, standardized test procedures and evaluation criteria. Moreover, CIGTF was designated by the Global Positioning System (GPS) Joint Program Office as the Responsible Test Organization (RTO) for GPS and GPS/Inertial user equipment. As such, CIGTF has several unique test facilities. The Advanced Inertial Test Lab (AITL) is the seismically quietest facility in the nation. This test facility allows the testing of extremely precise pointing and tracking equipment for use in space and in ICBM guidance systems. The 260" centrifuge is the largest precision centrifuge in the nation and allows for test items up to 700 pounds and sustained accelerations of 100g.

(3.1.F.1.B) Within the US? Yes/no. If yes, describe.

Yes. The 46 Guidance Test Squadron operates the Central Inertial Guidance Test Facility (CIGTF). This premier guidance test facility has been designated as the DOD focal point for test and evaluation of aircraft inertial and aided-inertial navigation equipment and has been given responsibility for establishing authoritative, standardized test procedures and evaluation criteria. Moreover, CIGTF was designated by the Global Positioning System (GPS) Joint Program Office as the Responsible Test Organization (RTO) for GPS and GPS/Inertial user equipment. As such, CIGTF has several unique test facilities. The Advanced Inertial Test Lab (AITL) is the seismically quietest facility in the nation. This test facility allows the testing of extremely precise pointing and tracking equipment for use in space and in ICBM guidance systems. The 260" centrifuge is the largest precision centrifuge in the nation and allows for test items up to 700 pounds and sustained accelerations of 100g.

CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

(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 FY93 by Military Department.

Yes.

ARMY		NAVY		OTHER	
FY92	FY93	FY92	FY93	FY92	FY93
9.90%	28.20%	15.20%	10.00%	0.00%	0.00%

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

Approximately 4000 sq. miles of land area is available at White Sands Missile Range (WSMR) and surrounding area for exclusive test use with unlimited air space above.

(3.1.G.2) Who owns and or controls the land under the restricted airspace you use?

Controlled by US Army.

(3.1.G.3) How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

All of the White Sands Missile Range (WSMR) is restricted airspace area 5107B. Altitude limits are surface to unlimited.

(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)? Dimensions? Will it support simultaneous users? Yes/no.

The 46th Guidance Test Squadron utilizes areas within White Sands Missile Range (WSMR) for jamming/spoofing tests and has the capability of providing this type of testing at other test ranges. WSMR provides 1,046 sq. miles of this type of test capability. Simultaneous users can be supported.

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

Land. 4000 sq. miles.

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

No known problems.

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

Max straight line segment is 140 nautical miles within the confines of White Sands Missile Range (WSMR) restricted airspace.

(3.1.G.8) What public airspace have you used for over flight 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.

a) Commercial jet routes. b) Navigation system tests. c) Yes.

(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/ravine, desert, and sea. State the area of each in square miles.

Topography is high desert, and mountains; there are approximately 300 square miles of mountainous terrain with peaks extending up to 9,000 ' Mean Sea Level (MSL). These mountains are covered with short to medium vegetation on the east side and no vegetation on the west side which are consisting of 2,000+ foot vertical cliffs. The desert floor is relatively flat with low vegetation and is nominally 4,000-5,000 ft MSL.

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

The Guidance Test Squadron (GTS) lies in the Tularosa Basin on Holloman Air Force Base in New Mexico. The basin is located between two limestone mountain ranges and has a caliche type soil. Caliche is composed of sand and crystalline salts which are crustaceous in nature. At other locations unfractured granite rock provides a very stable base but has a very high coefficient of transmissibility. Alternately, sand has a very low coefficient of transmissibility but is an unstable base. At the GTS, caliche provides both a stable base and a low coefficient of transmissibility. Furthermore, the facilities are located several miles away from major highways, railroads, active runways, and there are no large metropolitan cities, manufacturing or mining activities in the Tularosa basin. Therefore, the cultural seismic environment at the GTS is quiet around the clock.

(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. The Guidance Test Squadron has gone to the West Coast to do flight testing of doppler-aided navigation systems over water. Systems tested in the past include TACIT Rainbow, the Canadian HINS, and the B-1B. Testing over the Pacific Ocean has been about 5% of our work load.

(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?

Below 32 degrees:	8 days
Between 32 and 95 degrees:	357 days
Above 95 degrees:	0 days

(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%?

Below 30%:	30 days
Between 30% and 80%:	335 days
Above 80%:	0 days

(3.1.H.6) What is the number of test missions per year (1985 - 1993) canceled due to weather?

Average five missions per year.

(3.1.H.7) What is the number of test days per year (1985 - 1993) canceled due to weather?

On average there are no complete test days lost due to weather.

(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?

Less than one mile:	0 days
Between one and 3 miles:	0 days
Greater than 3 miles:	365 days

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

255. Calculated as follows: 52 weeks x 5 days per week - 5 bad days per year = 255 days per year.

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

2.7%.

(3.2.A.1) Do supersonic corridors or areas exist? Yes/no.

No. This organization controls no airspace; therefore reference to supersonic corridors does not apply to us. Any supersonic corridor used for testing is owned by either Holloman Air Force Base, White Sands Missile Range, or the FAA. Use of any of these supersonic corridors is controlled through those respective organizations.

(3.2.A.2) Where are they located relative to your airfield?

Not Applicable.

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

Not Applicable.

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

Not Applicable.

(3.2.A.5) Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

Not Applicable.

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

Not Applicable.

(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.

Not Applicable. Guidance Test Squadron flight operations are flown out of the airfield facilities of the host base, Holloman AFB, New Mexico.

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

Not Applicable. This organization uses Holloman AFB primarily for launch and recovery of test aircraft. Aircraft and airbase do not belong to this organization.

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

Not Applicable. This organization has no aircraft assigned to it. Holloman AFB controls the primary airfield that is used to launch and recover our rented test aircraft.

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

Not Applicable. This organization has no aircraft assigned to it. Holloman AFB controls the primary airfield that is used to launch and recover our rented test aircraft.

(3.2.B.5) Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

Not Applicable.

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

Not Applicable. This organization has no aircraft assigned to it. Holloman AFB controls the primary airfield that is used to launch and recover our rented test aircraft.

(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).

Not Applicable. This organization does not test aircraft, only navigation and guidance systems.

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

Not Applicable. This organization does not test aircraft, only navigation and guidance systems.

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

Not Applicable. This organization does not test aircraft, only navigation and guidance systems.

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

Not Applicable. This organization does not test aircraft, only navigation and guidance systems.

(3.2.C.5) What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

Not Applicable. The mission of this organization is guidance and navigation testing, not air-to-air, air-to-ground, or refueling testing.

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

Not Applicable. This organization does not test aircraft, only navigation and guidance systems.

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

Not Applicable. This organization does not test aircraft, only navigation and guidance systems.

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

Not Applicable. This organization does not test aircraft, only navigation and guidance systems.

(3.3.A.1) What is the number of threats simulated?

Two threats are simulated (Global Positioning System (GPS) Jamming and GPS Spoofing).

(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?

We have six jammers and four spoofers. These can be used simultaneously, individually, or in any combination. Our jamming and spoofing capabilities are for Global Positioning System (GPS) receivers. We do not simulate AAA, SAM, etc. The maximum signal density varies, but we are able to saturate the range which is 10 miles by 40 miles. Again this is saturated from a GPS receiver stand point. Both jamming and spoofing are L-band, with a maximum power of 50 Watts. The signal is normally radiated, but can be injected in the laboratory.

(3.3.A.3) Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

No. Plans are under way to have the models and simulators validated by an agency other than the 46th Guidance Test Squadron. This should be completed by December 1994.

(3.3.A.4) Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

Open loop tests - Yes. Reactive tests - Yes. Closed loop tests - No.

(3.3.A.5) What is the threat representation (fidelity) and density?

High fidelity (very well) and high density (saturate an area). Ability to saturate (interrupt GPS reception) in a 10nm by 40 nm area.

(3.3.A.6) Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

Yes. Only land threats, however our systems are mobile and could be placed on a ship if required.

(3.3.A.7) What geographic dispersion can be simulated?

This does not apply to our operations. We are a simulation facility for Global Positioning System receivers only.

(3.3.A.7.A) Threat lay down?

This does not apply to our operations. We are a simulation facility for Global Positioning System receivers only.

(3.3.A.7.B) Representative distance?

Presently can cover 200 square miles.

(3.3.A.8) Are the threats moveable (i.e. dynamic) within a test scenario? relocatable to new scenarios? yes/no

Yes. Threats are mounted in vans and can relocate within a scenario or between scenarios.

(3.3.A.9) Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

No. There is not a requirement for interlinking facilities at the present time.

(3.3.A.10) Is there a limit on simultaneous users? Yes/no. If no, explain.

No. We are capable of multiple simultaneous threat simulations with our equipment.

(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. We have at our disposal for testing a F-16 fighter aircraft, a C-141 cargo aircraft, a C-12 cargo aircraft, a UH-1H helicopter, and several ground vehicles ranging from an 18-wheel tractor trailer to a Ford Econoline van. This array of test beds is capable of handling any size test item currently in the inventory or projected to be in the inventory.

(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?

The answer is classified. All jamming and spoofing information such as frequencies, techniques, and equipment used in the testing is considered to be sensitive and classified.

(3.3.B.4) What are the available spectra?

The answer is classified.

(3.3.B.5) Do you have a scene generation capability? Yes/no. If yes, describe.

No, we do not have a requirement for a scene generation capability.

(3.4.A.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?

No. The mission of this organization does not include testing of directed energy weapon systems.

(3.4.B.1.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?

Not Applicable. This organization does not test munitions, only navigation and guidance systems.

(3.4.B.1.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.

Not Applicable. This organization does not test munitions, only navigation and guidance systems.

(3.4.B.1.C) What are the maximum ranges (nautical miles) you can test, by type weapon?

CONUS-wide for guidance/navigation system RDT&E; 100 miles DOD-controlled missile range.

(3.4.B.2.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:

--Unguided 2000 pound-class ballistic weapon
---live?
---inert?
--Guided weapon (e.g., GBU-24 class)
---live?
---inert?
--Stand-off weapon (e.g., AGM-130 class)
---live?
---inert?
--Short-range missile (e.g., AIM-9)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL
--Long-range missile (e.g., AIM-120)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL

Not Applicable. This organization does not maintain any land or water ranges; therefore the question related to the number of missions, safety footprints, and types of weapons is not applicable.

(3.4.B.2.B) Were flight termination systems required? Yes/no.

Not Applicable. This organization does not test munitions; it only tests navigation and guidance systems.

(3.4.B.2.C) If no missions were scheduled in a category, give the reason(s).

Not Applicable. The 46th Guidance Test Squadron does not participate in live weapons testing.

(3.4.B.2.D) 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.

Not Applicable.

APPENDIX A

CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	140,000	140,000	135,000	119,000	162,000	176,000	208,000	169,000
	TEST HOURS	28,000	28,000	27,000	24,000	33,000	35,400	42,200	33,800
	MISSIONS								
EC	DIRECT LABOR	0	0	0	0	0	0	0	12000
	TEST HOURS	0	0	0	0	0	0	0	2400
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	113,000	113,000	110,000	97,000	67,000	95,000	41,000	24,000
	TEST HOURS	23,000	23,000	22,000	19,000	13,000	19,000	8,000	4,800
	MISSIONS								
OTHER T&E	DIRECT LABOR	52,000	52,000	51,000	44,000	24,000	11,000	7,000	10,000
	TEST HOURS	10,000	10,000	10,000	9,000	5,000	2,000	1,000	2,000
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								

CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

			ANNUAL HOURS OF DOWNTIME	1,095
			AVERAGE DOWNTIME PER DAY	3
			AVERAGE HOURS AVAILABLE PER DAY	21
TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY 2,499
LAB	2	2	4	
GPS	3	4	12	ANNUAL
JAMMING/SPOOFING				
FLIGHT TEST	2	2	4	UNCONSTRAINED
VAN/BUS	2	3	6	CAPACITY
TYPICAL	43	2.16	93	912,135
		TOTAL SUM	119	

NOTE: TYPICAL REPRESENTS ADDITIONAL TESTS THAT COULD BE ACCOMPLISHED IF MANPOWER WERE UNCONSTRAINED.

CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

AGE: 37 years

REPLACEMENT VALUE: $85 Million

MAINTENANCE AND REPAIR BACKLOG: $253K

DATE OF LAST UPGRADE: 1970

NATURE OF LAST UPGRADE: Advanced Inertial Test Lab (AITL) designed to provide a seismically controlled environment for testing high accuracy INSs. This building houses one 3-axis table, one 2-axis table, and two 1-axis tables. An environmental building was built to house environmental testing equipment. This included linear, vertical, and hydraulic vibration systems; temperature/altitude chamber, other temperature chambers, static load facility, and a salt fog chamber.

MAJOR UPGRADES PROGRAMMED: None

1. UPGRADE TITLE:
TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:

2. UPGRADE TITLE:
TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:

CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

GENERAL INFORMATION

Facility/Capability Title: CENTRAL INERTIAL GUIDANCE TEST FACILITY **Origin Date:** 5 May 1994

Service: USAF **Organization/Activity:** 46 Test Group **Location:** Holloman AFB, NM

T&E Functional Area: Air Vehicles **UIC:** Not Available

T&E Test Facility Category: Measurement Facility

	T&E	S&T	DE	IE	T&D	OTHER	
PERCENTAGE USE:	100	0	0	0	0	0	TOTAL = 100%
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	78.6 = 100%	0	0	0	0	0	
Armament/Weapons	11.2/11.2	0	0	0	0	0	
EC	5.6	0	0	0	0	0	
Other	4.6	0	0	0	0	0	

CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

TECHNICAL INFORMATION

Facility/Capability Title: CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

Facility Description; Including mission statement: CIGTF is a national asset and DOD's designated Center of Expertise for inertial and inertial-aided guidance and navigation testing and the Responsible Test Organization for Global Positioning System (GPS) Joint Program Office activities, including all GPS and GPS-embedded inertial user equipment. The CIGTF complex occupies 227,000 square feet and is located in a seismically stable area. The laboratory operates three precision centrifuges capable of sustained acceleration environments up to 30g, 50g, and 100g, respectively; two and three-axis test tables for flight simulation; combine environmental laboratory; and an actively controlled seismically stable platform. CIGTF operates a GPS/INS simulation laboratory, GPS satellite reference station, data analysis station and three portable field jamming and spoofing systems to support test integrated GPS/INS systems. Field testing assets include four ground vehicles (vans) and a variety of aircraft types including transport, fighter, and helicopters. The highly accurate sled track is used for testing precision guidance systems.
Interconnectivity/Multi-Use of T&E Facility: Physically adjacent to, and sharing equipment resources with, the Holloman High-Speed Test Track, the Radar Scatter Division (RATSCAT), and the Army's White Sands Missile Range (WSMR). Over 5,000 square miles of federally controlled air space and some 120 miles of precisely surveyed road network. Clear weather over 350 days annually, Seismically quiet and stable in the 1-micro g region. RDT&E of inertial and inertial-aided (GPS, stellar, radar, etc.) systems used for guidance and navigation in missiles, aircraft, spacecraft, pointing, and tracking often requires a wide variety of rapidly available test capabilities. Central Inertial Guidance Test Facilitiy's access to internal or local capabilities guarantees this multi-use of similar resources (both equipment and expertise).
Type of Test Supported: Laboratory static and dynamic tests, component and system level; environmental tests, precision guidance and navigation tests, jamming and spoofing field tests (flight and van).
Summary of Technical Capabilities: IRIG standard FM/FM and PCM/FM telemetry, real-time data collection and reduction, sled, aircraft, van, inertial lab time, acceleration, velocity, position, attitude reference systems, and associated data acquisition and reduction equipment. Precision position surveys (128 on WSMR roads, 359 cross country for aircraft tests, 8,000 on Holloman track); gravity surveys (full anomaly map on WSMR, one of five superior first-order surveys in the U.S. in inertial lab, several hundred on test track-both magnitude and direction); and azimuth surveys (inertial labs and test track). Largest collection of inertial test tables in U.S. GPS satellite reference system. Jamming/spoofing capabilities. Test aircraft access (cargo, fighter, helicopter). Precision, high-g centrifuges. Data digitizing and reformatting equipment and dedicated data reduction and analysis computers (up to 64 and 128 bit precision).
Keywords: guidance, navigation, centrifuge, inertial, inertial-aided, GPS, components, systems, jamming, spoofing, environmental, embedded systems, CIGTF, analysis

CENTRAL INERTIAL GUIDANCE TEST FACILITY (CIGTF)

ADDITIONAL INFORMATION

FACILITY/CAPABILITY TITLE: CENTRAL INERTIAL GUIDANCE TEST FACILITY

PERSONNEL	FY93	FY94	FY95	FY96	FY97	FY98	FY99
OFFICER	33	33	33	33	33	33	33
ENLISTED	74	74	74	74	74	74	74
CIVILIAN	109	109	109	109	109	109	109
CONTRACTOR	19	19	19	19	19	19	19
TOTAL	235	235	235	235	235	235	235

TOTAL SQUARE FOOTAGE 261,670SF
TEST AREA SQUARE FOOTAGE 143,364SF
OFFICE SPACE SQ. FOOTAGE 105,980 SF
TONNAGE OF EQUIPMENT 387 TONS
VOLUME OF EQUIPMENT 267,051 CF
ANNUAL MAINTENANCE COST $127,000
ESTIMATED MOVING COST See # below

CAPITAL EQUIPMENT INVESTMENT($)

FY93	FY94	FY95	FY96	FY97	FY98	FY99
2,500,000	2,500,000	2,100,000	0	0	0	0

Study required to assess method of moving equipment up to 45 tons with bearing clearances down to 10 thousandths of an inch without degradation. To maintain bearing integrity, study may recommend bearing pressurization during move. Move would be contracted to a highly qualified agency adhering to study results.

Document Separator

FACILITY/CAPABILITY: RATSCAT/RAMS @ HMN AFB

TEST FACILITY CATEGORY: MF

% T&E - OVERALL: 100

AV: 0

EC: 100

A/W: 0

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5): 4

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92	0	FY93	0
EC:	FY92	9,920	FY93	2,200
A/W:	FY92	0	FY93	0

Nation 12 Aug 94

(2.1.A.1) What amount of workload have you performed each year from FY86-93?

Reference the Historical Workload Form provided in Appendix A of this package.

(2.1.B.1) Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP. The Military Departments will provide total funding amounts appropriated for all PEs identified in each functional area shown above.

FY92

Program Element	AV	EC	A/W	OT	OTHER
12325F		X			
31310F		X			
63218C		X			
63253F		X			
64240F		X			
65712F		X			
65809F		X			

FY93

Program Element	AV	EC	A/W	OT	OTHER
20392D		X			
64240F		X			
64733F		X			

Future Years

Program Element	AV	EC	A/W	OT	OTHER
21004F					
63203F		X			
63216N		X			
64240F		X			

Note: Some programs do not have Program Elements associated with them and therefore are not covered in the above answer.

(2.1.B.2) What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

Functional Area	FY92 Workyears	FY93 Workyears
Air Vehicle	0	0
Electronic Combat	5.61	1.24
Armament/Weapons	0	0
Other Test	0	0
Other	0	0

Note: Workyears computed by dividing test hours by 1768 hours per workyear.

(2.2.A) Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.).

Reference the Determination of Unconstrained Capacity Form provided in Appendix A of this package.

(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 safety requirements of the United States Army (USA) White Sands Missile Range (WSMR). Radar Target Scatter (RATSCAT) Mainsite and RATSCAT Advanced Measurement System (RAMS) are separate facilities. One or both facilities must shut down whenever the safety footprint of the WSMR mission encompasses either or both facilities.

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

Yes.

(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.

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

Yes.

(3.1.A.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 and external to the site.

0%. There is no interconnectivity with any facility allowing real-time nor near real-time data exchange.

(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.

Not applicable. This facility is not interconnected with any facility for the purpose of exchanging data.

(3.1.B) Facility Condition (MV II)

Reference the Facility Condition Form provided in Appendix A of this package.

(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.

No.

(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.

Not Applicable. Workload is not constrained by any environmental or encroachment problems.

(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.

No.

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

Within 50 mile radius:	40,000
Within 100 mile radius:	690,000
Within 150 mile radius:	740,000
Within 200 mile radius:	1,290,000

NOTE: The US/Mexico border lies within the 100, 150, and 200 mile radius areas. Population centers across the border were not included in the totals.

(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.

None.

(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.1) Do you have specialized facilities 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. Model shop, machine shops, paint building with radar absorbing material spraying capability, Precision Measurement Equipment Laboratory (PMEL), the electronic maintenance shop, target support facilities, classified work and storage facilities, and ground planes.

(3.1.D.2) Are specialized targets required to support this facility? Yes/no. If yes, explain.

Yes. Targets such as cylinders and flat plates to calibrate instrumentation radars and specialized low signature targets for background measurements are required to support tests.

(3.1.D.2.A) Have the specialized targets been validated? Yes/no. If yes, by whom?

Yes. Specifications are verified on site; theoretical design specifications are verified by physical and electromagnetic measurements.

(3.1.E.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.

No.

(3.1.E.1.A) Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

No. Any different workload would require significant investment in new equipment and workforce skills.

(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.

Not applicable. Radar Target Scatter (RATSCAT)/RATSCAT Advanced Measurement System (RAMS) is not an open air range. There is enough land area to increase the current mission capabilities without expansion.

(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. Top Secret/Special Access Required.

(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 approved Central Test and Evaluation Investment Program (CTEIP) program will develop coherent bistatic measurements, pylon clutter reduction, radar improvements, and a large target protection capability.

(3.1.F.1) Is this a one-of-a-kind facility within the DOD? Yes/no. If yes, describe.

Yes. The Radar Target Scatter (RATSCAT) Division consists of two distinctly different sites. Mainsite is a horizontal ground bounce radar cross section measurement facility. The RATSCAT Advanced Measurement System (RAMS) site is a state-of-the-art low observable signature measurement facility. Mainsite's capabilities are only partially duplicated at a Navy facility known as Junction Ranch, located at the Naval Air Warfare Center Weapons Division, China Lake, California. RAMS is totally unique.

(3.1.F.1.A) Within the US Government? Yes/no. If yes, describe.

Yes. No other capability within US Government.

(3.1.F.1.B) Within the US? Yes/no. If yes, describe.

Yes. Facilities similar to Mainsite have been developed by a number of aerospace companies. None of these ranges can perform large target, wide angle bistatic measurements except Radar Target Scatter (RATSCAT) Mainsite and no other single facility can duplicate all the capabilities of Mainsite. The only facility that exists similar to RATSCAT Advanced Measurement System (RAMS) is Lockheed Corporation's Helendale facility. It is similar in capability and function; however, recent upgrades have put RAMS at the forefront of Radar Cross Section (RCS) measurement technology.

(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 FY93 by Military Department.

Yes.

ARMY		NAVY		OTHER	
FY92	FY93	FY92	FY93	FY92	FY93
3.00%	2.00%	0.00%	0.00%	0.00%	1.00%

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

9 Square Miles (SM). (Mainsite - 4 SM, RAMS - 5 SM) of land.

(3.1.G.2) Who owns and or controls the land under the restricted airspace you use?

US Army/White Sands Missile Range (WSMR)

(3.1.G.3) How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

Surface-to-Unlimited.

(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)? Dimensions? Will it support simultaneous users? Yes/no.

No.

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

All 9 Square Miles is over land.

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

None.

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

Not Applicable. Since we do not fly airplanes in our airspace, our usage is relegated to specific locations of radars and targets only, and a maximum line of airspace is not meaningful.

(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.

Not Applicable. No public airspace exists.

(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/ravine, desert, and sea. State the area of each in square miles.

Mainsite is located on a flat gypsum lake bed in a desert environment with little vegetation, covering 4 sq. miles. RAMS is located at the foot of a mountain range in a desert environment, covering 5 sq. miles.

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

The local Tularosa Basin provides the extremely flat, clutter free environment critical for precision radar cross section measurements of Low Observable (Stealth) systems. The gypsum ground cover provides radar reflection characteristics that greatly enhance the sensitivity of the measurement systems. The large geographical area permits wide angle bistatic measurements not possible at any other test site.

(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.

No.

(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?

Below 32 degrees:	8 days
Between 32 and 95 degrees:	357 days
Above 95 degrees:	0 days

(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%?

Below 30%:	30 days
Between 30% and 80%:	335 days
Above 80%:	0 days

(3.1.H.6) What is the number of test missions per year (1985 - 1993) canceled due to weather?

90.2% avg < Radar Target Scatter (RATSCAT) - 29 per year. 11.6%
RATSCAT Advanced Measurement System (RAMS) - 20 per year. 8%

RFC gives 250 test days/year

A test mission is defined as a period of time specifically chosen for data acquisition. In this case, the period of time is chosen to be a test day. If no data is acquired during a test mission, then the test mission is considered canceled. RATSCAT Mainsite has more cancellations due to weather since its testing involves heavy equipment and very involved mounting procedures. At RAMS, the pylon can quickly retract if bad weather arrives.

(3.1.H.7) What is the number of test days per year (1985 - 1993) canceled due to weather?

Radar Target Scatter (RATSCAT) - 29 per year.
RATSCAT Advanced Measurement System (RAMS) - 20 per year.

RATSCAT Mainsite has more cancellations due to weather since its testing involves heavy equipment and very involved mounting procedures. At RAMS, the pylon can quickly retract if bad weather arrives.

(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?

Less than one mile:	0 days
Between one and 3 miles:	0 days
Greater than 3 miles:	365 days

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

Not Applicable. We do not conduct flight tests at this facility.

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

Testing is restricted but not canceled 7 - 10% of the time due to wind, temperature inversions and precipitation.

(3.2.A.1) Do supersonic corridors or areas exist? Yes/no.

Not Applicable. We do not conduct flight tests at this facility.

(3.2.A.2) Where are they located relative to your airfield?

Not Applicable. We do not conduct flight tests at this facility, and there is no airfield at this facility.

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

Not Applicable. We do not conduct flight tests at this facility.

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

Not Applicable. We do not conduct flight tests at this facility.

(3.2.A.5) Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

Not Applicable. We do not conduct flight tests at this facility.

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

Not Applicable. We do not conduct flight tests at this facility.

(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.

Not Applicable. We do not have an airfield at this facility.

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

Not Applicable. We do not have an airfield at this facility.

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

Not Applicable. We do not have an airfield at this facility.

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

Not Applicable. We do not have an airfield at this facility.

(3.2.B.5) Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

Not Applicable. We do not have an airfield at this facility.

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

Not Applicable. We do not have an airfield at this facility

(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)

Not Applicable. We do static radar testing of air vehicles, but we do not conduct dynamic testing at this facility.

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

Not Applicable. We do static radar testing of air vehicles, but we do not conduct dynamic testing at this facility.

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

Not Applicable. We do static radar testing of air vehicles, but we do not conduct dynamic testing at this facility.

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

Not Applicable. We do static radar testing of air vehicles, but we do not conduct dynamic testing at this facility.

(3.2.C.5) What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

Not Applicable. We do static radar testing of air vehicles, but we do not conduct dynamic testing at this facility.

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

Not Applicable. We do static radar testing of air vehicles, but we do not conduct dynamic testing at this facility.

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

Not Applicable. We do static radar testing of air vehicles, but we do not conduct dynamic testing at this facility.

(3. 2.C.8) Identify the number, types, and owners of aircraft at your installation.

Not Applicable. We do static radar testing of air vehicles, but we do not conduct dynamic testing at this facility.

(3.3.A.1) What is the number of threats simulated?

None.

(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?

Not Applicable. We do not simulate any threats.

(3.3.A.3) Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

Not Applicable. We do not simulate any threats.

(3. 3.A.4) Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

Not Applicable. We do not simulate any threats.

(3.3.A.5) What is the threat representation (fidelity) and density?

Not Applicable. We do not simulate any threats.

(3.3.A.6) Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

Not Applicable. We do not simulate any threats.

(3.3.A.7) What geographic dispersion can be simulated?

Not Applicable. We do not simulate any threats.

(3.3.A.7.A) Threat lay down?

Not Applicable. We do not simulate any threats.

(3.3.A.7.B) Representative distance?

Not Applicable. We do not simulate any threats.

(3.3.A.8) Are the threats moveable (i.e. dynamic) within a test scenario? relocatable to new scenarios? yes/no

Not Applicable. We do not simulate any threats.

(3.3.A.9) Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

Not Applicable. We do not simulate any threats.

(3.3.A.10) Is there a limit on simultaneous users? Yes/no. If no, explain.

Not Applicable. We do not simulate any threats.

(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.

Yes. The turntables and rotators have finite capacities. The largest target on a turntable is limited to a 60 foot span between its supports and a total weight of 100,000 pounds. The largest target for a rotator is 70 feet at the longest extent and 30,000 pounds weight.

(3.3.B.2) What is the number of simultaneous countermeasures that can be evaluated?

Not Applicable. We do not simulate any threats.

(3. 3.B.3) What range of spectra can be tested and evaluated?

120 MHz to 18 GHz, 34-36 GHz, and 94 GHz, copole and crosspole.

(3.3.B.4) What are the available spectra?

120 MHz to 18 GHz, 34-36 GHz, and 94 GHz.

(3.3.B.5) Do you have a scene generation capability? Yes/no. If yes, describe.

No.

(3.4.A.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?

Not Applicable. We do radar testing, but we do not test directed energy weapons.

(3.4.B.1.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?

Not Applicable. We do radar testing, but we do not test live rocket, missile, or bomb systems.

(3.4.B.1.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.

Not Applicable. We do radar testing, but we do not test live rocket, missile, or bomb systems.

(3.4.B.1.C) What are the maximum ranges (nautical miles) you can test, by type weapon?

Not Applicable. We do radar testing, but we do not test live rocket, missile, or bomb systems.

(3.4.B.2.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:

--Unguided 2000 pound-class ballistic weapon
---live?
---inert?

--Guided weapon (e.g., GBU-24 class)
---live?
---inert?
--Stand-off weapon (e.g., AGM-130 class)
---live?
---inert?
--Short-range missile (e.g., AIM-9)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL
--Long-range missile (e.g., AIM-120)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL

Not Applicable. We do radar testing, but we do not test live rocket, missile, or bomb systems.

(3.4.B.2.B) Were flight termination systems required? Yes/no.

Not Applicable. We do radar testing, but we do not test live rocket, missile, or bomb systems.

(3.4.B.2.C) If no missions were scheduled in a category, give the reason(s).

Not Applicable. We do radar testing, but we do not test live rocket, missile, or bomb systems.

(3.4.B.2.D) 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.

Not Applicable. We do radar testing, but we do not test live rocket, missile, or bomb systems.

APPENDIX A

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Radar Target Scatter (RATSCAT)/RATSCAT Advanced Measurement System (RAMS)

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
EC	DIRECT LABOR	57,700	120,000	66,100	59,100	72,800	59,100	139,000	31,400
	TEST HOURS	4,100	8,600	4,700	4,200	5,200	4,200	9,920	2,200
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
OTHER T&E	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Radar Target Scatter (RATSCAT)/RATSCAT Advanced Measurement System (RAMS)

ANNUAL HOURS OF DOWNTIME	1,206
AVERAGE DOWNTIME PER DAY	3.3
AVERAGE HOURS AVAILABLE PER DAY	20.7

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY
				807.3
STATIC RCS	2	12	24	
MODEL	1	3	3	ANNUAL UNCONSTRAINED CAPACITY
TYPICAL	1	12	12	294,664
		TOTAL SUM	39	

NOTE: TYPICAL REPRESENTS ADDITIONAL TESTS THAT COULD BE ACCOMPLISHED IF MANPOWER WERE UNCONSTRAINED.

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Radar Target Scatter (RATSCAT)/RATSCAT Advanced Measurement System (RAMS)

AGE: 30 years

REPLACEMENT VALUE: $ 262M

MAINTENANCE AND REPAIR BACKLOG: $ 939K

DATE OF LAST UPGRADE: FY90

NATURE OF LAST UPGRADE: COMPLETE REPLACEMENT OF MAINSITE FACILITIES (90)

MAJOR UPGRADES PROGRAMMED: None

1. UPGRADE TITLE:
TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:

2. UPGRADE TITLE:
TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:

GENERAL INFORMATION

Facility/Capability Title: Radar Target Scatter (RATSCAT)/RATSCAT Advanced Measurement System (RAMS) **Origin Date:** 5 May 1994

Service: USAF **Organization/Activity:** 46 Test Group **Location:** Holloman AFB, NM

T&E Functional Area: Electronic Combat **UIC:** Not Available

T&E Test Facility Category: Measurement Facility

	T&E	S&T	DE	IE	T&D	OTHER	
PERCENTAGE USE:	100	0	0	0	0	0	TOTAL = 100%
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	0	0	0	0	0	0	
Armament/Weapons	0	0	0	0	0	0	
EC	100	0	0	0	0	0	
Other	0	0	0	0	0	0	

TECHNICAL INFORMATION

Facility/Capability Title: Radar Target Scatter (RATSCAT)/RATSCAT Advanced Measurement System (RAMS)

Facility Description; Including Mission Statement: The Radar Target Scatter (RATSCAT) facility is the primary DOD facility for radar cross section (RCS) measurements. RATSCAT is comprised of two physically separate, but complementary sites, Mainsite and the RATSCAT Advanced Measurement System (RAMS). At RATSCAT, full-scale flyable aircraft and missiles, operational vehicles, aerospace models, and miscellaneous targets can be accurately measured for radar target signature, both monostatically and bistatically, as well as antenna gain and radiation patterns, and performance of active electronic systems. These measurements support weapon system development, technology assessments, and related DOD and U.S. government sponsored efforts.
Interconnectivity/Multi-Use of T&E Facility: RATSCAT was a primary sponsor in development of a common data format for RCS T&E facilities. Customers using a wide variety of RCS facilities including dynamic, static, indoor, and outdoor can now directly compare data from one type facility to another as the development of their systems mature.
Type of Test Supported: Monostatic and bistatic radar cross section (RCS) measurements, antenna gain measurements, antenna radiation patterns, and active electronic systems performance.
Summary of Technical Capabilities: Mainsite can measure targets weighing up to 100,000 pounds. Frequency coverage is from 120 MHz to 18 GHz continuous , 34-36 Ghz and 94GHz. An SA2090 radar can simultaneously collect 1024 frequencies with full scattering matrix at Mainsite. Bistatic angles up to 160 degrees can be measured at Mainsite. RAMS site is a shadow plane range with a 100 foot retractable pylon. The primary radar for L through Ku band is a SPC Mark III. Frequencies from 120 MHz to 600 MHz are provided by a mobile Lintek radar system.
Keywords: Radar Cross Section (RCS), Radar Signatures, Antenna Gain, Radiation Patterns

Document Separator

ADDITIONAL INFORMATION

Facility/Capability Title: Radar Target Scatter (RATSCAT)/RATSCAT Advanced Measurement System (RAMS)

PERSONNEL	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer	6	6	6	6	6	6	6
Enlisted	2	2	2	2	2	2	2
Civilian	13	13	13	13	13	13	13
Contractor	142	113	113	113	113	113	113
Total	163	134	134	134	134	134	134

TOTAL SQUARE FOOTAGE 205,000 SF
TEST AREA SQUARE FOOTAGE 196,000 SF

OFFICE SPACE SQ. FOOTAGE 9,000 SF

TONNAGE OF EQUIPMENT 2,000 TONS
ANNUAL MAINTENANCE COST $500,000

VOLUME OF EQUIPMENT 420,000 FT^3
ESTIMATED MOVING COST $2.2 Million

CAPITAL EQUIPMENT INVESTMENT ($K)

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
3,900	3,400	4,700	7,500	12,200	7,000	2,000

Document Separator

FACILITY/CAPABILITY: HIGH SPEED SLED TRACK @ HMN AFB

TEST FACILITY CATEGORY: MF

% T&E - OVERALL: 100

AV: 16.8

EC: 4.5

A/W: 61.1

NUMBER OF TESTS AT ONE TIME (SUM OF COLUMN 5): 1

HISTORICAL WORKLOAD (TEST HOURS)

AV:	FY92	256	FY93	216
EC:	FY92	100	FY93	58
A/W:	FY92	660	FY93	787

Nation 12 Aug 94
[illegible] 17 Aug 94

(2.1.A.1) What amount of workload have you performed each year from FY86-93?

Reference the Historical Workload Form provided in Appendix A of this package.

(2.1.B.1) Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP. The Military Departments will provide total funding amounts appropriated for all PEs identified in each functional area shown above.

FY92

Program Element	AV	EC	A/W	OT	OTHER
11111F	X				
60300F			X		
63231F	X				
63311F	X				
63601F			X		
64211F			X		
64270F		X			
64312F	X				
ARMY			X		
BMDO			X		
NAVY			X		

HOLLOMAN HIGH SPEED TEST TRACK

FY93

PE	AV	EC	A/W	OT	OTHER
11111F	X				
60300F			X		
63231F	X				
63311F	X				
64270F		X			
64312F	X				
ARMY			X		
ARPA	X				
BMDO	X		X		
NAVY			X		
USMC		X			

Future Years

Program Element	AV	EC	A/W	OT	OTHER
11111F	X				
27133F	X				
35164F	X				
44011F		X			
60300F			X		
63112F			X		
63231F	X				
63270F		X			
63311F	X				
64233F	X				
64239F	X	X			
64270F		X			
64312F	X				
64706F	X				
ARMY		X	X		
BMDO	X		X		
NAVY			X		
USMC		X			

(2.1.B.2) What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

Functional Area	FY92 Workyears	FY93 Workyears
Air Vehicle	.14	.12
Electronic Combat	.06	.03
Armament/Weapons	.37	.45
Other Test	.16	.13
Other	0	0

Note: Workyears computed by dividing test hours by 1768 hours per workyear.

(2.2.A) Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.).

Reference the Determination of Unconstrained Capacity Form provided in Appendix A of this package.

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

Yes. Except under unusual circumstances, only one test at a time can be run using the track facilities.

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

Yes.

(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. Loss of the Test Track would impact the Guidance Test Squadron's ability to conduct sled tests of missile guidance systems. Also the Theater Missile Defense (TMD) program would have to conduct expensive live firing to get lethality data that is now collected reliably and relatively inexpensively using the Track.

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

Yes. Loss of the Test Track would impact all qualification testing on fighter and bomber egress systems, all sled testing for ICBM guidance systems, all live fire lethality testing for Theater Missile Defense (TMD), and all Infrared Countermeasures (IRCM) testing.

(3.1.A.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 and external to the site.

0%. No real time data exchange with another facility. Do not interconnect to any facilities for test.

(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.

Not applicable.

(3.1.B) Facility Condition (MV II).

Reference the Facility Condition Form provided in Appendix A of this package.

(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.

No.

(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.

Not Applicable.

(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.

No.

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

Within 50 mile radius:	40,000
Within 100 mile radius:	690,000
Within 150 mile radius:	740,000
Within 200 mile radius:	1,290,000

NOTE: The US/Mexico border lies within the 100, 150, and 200 mile radius areas. Population centers across the border were not included in the totals.

(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.

None.

(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.1) Do you have specialized facilities which 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. Sled fabrication shops: machine, sheet metal, heat treating, welding and Non Destructive Inspection (NDI), paint. Egress test support: seat buildup/teardown area, center of gravity equipment room. Rain simulation area, ballistic test range, Track Data Center, horizontal test stand, sled pulldown rails, liquid nitrogen storage area.

(3.1.D.2) Are specialized targets required to support this facility? Yes/no. If yes, explain.

Yes. Specialized targets are provided by the customer or built at the track to the customers' specifications.

(3.1.D.2.A) Have the specialized targets been validated? Yes/no. If yes, by whom?

Yes. Specialized targets are validated by the customer.

(3.1.E.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.

Yes. The Test Track is located in a remote, uninhabited desert area.

(3.1.E.1.A) Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

Yes. Armament/Weapons. Live fire testing can be accommodated as well as dynamic missile launches into White Sands Missile Range (WSMR) airspace.

(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. The adjacent White Sands Missile Range (WSMR) is available to support tests requiring extended airspace or footprints greater than the track facility areas.

(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. Holloman High Speed Test Track has supported SECRET/Special Access Required.

(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. Current sleds are held on the track by steel "slippers". This design limits sled velocities and causes other problems. The Magnetic Levitation program now underway is a multi-year test and improvement program to replace the existing sled design with a magnetically levitated sled. Such sleds would be propelled by rocket motors or switching magnetic fields.

(3.1.F.1) Is this a one-of-a-kind facility within the DOD? Yes/no. If yes, describe.

Yes. The Holloman High Speed Test Track (HHSTT) is the longest, most precisely aligned and fully instrumented facility of its kind in the world. It is capable of supporting tests requiring velocities up to 9,000 feet per second.

(3.1.F.1.A) Within the US Government? Yes/no. If yes, describe.

Yes. The Holloman High Speed Test Track (HHSTT) is the longest, most precisely aligned and fully instrumented facility of its kind in the world. It is capable of supporting tests requiring velocities up to 9,000 feet per second.

(3.1.F.1.B) Within the US? Yes/no. If yes, describe.

Yes. The Holloman High Speed Test Track (HHSTT) is the longest, most precisely aligned and fully instrumented facility of its kind in the world. It is capable of supporting tests requiring velocities up to 9,000 feet per second.

(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 FY93 by Military Department.

Yes.

ARMY		NAVY		BMDO	
FY92	FY93	FY92	FY93	FY92	FY93
9.6%	4.2%	1.8%	2.0%	49.1%	66.8%

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

No sea space. Land and the air space above it: Track - approximately 11 square miles, White Sands Missile Range (WSMR) - approximately 4,000 square miles.

(3.1.G.2) Who owns and or controls the land under the restricted airspace you use?

Holloman AFB NM, White Sands Missile Range (WSMR).

(3.1.G.3) How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

All of the White Sands Missile Range (WSMR) is restricted airspace area 5107B. Altitude limits are surface to unlimited.

(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)? Dimensions? Will it support simultaneous users? Yes/no.

No.

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

Not Applicable. No special use airspace.

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

Airspace problems are limited to scheduling conflicts with other higher priority White Sands Missile Range (WSMR) customers.

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

An item could potentially be released or launched from the track and could travel a maximum of 50 nautical miles down range before leaving restricted airspace.

(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.

Not Applicable. No public airspace over the Test Track.

(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/ravine, desert, and sea. State the area of each in square miles.

The Test Track lies on the floor of the central Tularosa Basin which lies in the Mexican Highlands section of the Basin and Range province. The principal landforms of the Basin and Range province are north/south tectonic features consisting of relatively parallel, narrow, uplifted fault block mountain ranges separated by down-thrown basins. The Basin is bordered on the west and east sides by the San Andreas and Sacramento Mountains. The Tularosa Basin floor is warm, arid and internally drained by ephemeral streams which originate largely in the mountain periphery. The surface is characterized by little standing water, although numerous ephemeral lakes and playas ranging in size from less than an acre to several km are present. The environment is characterized by typical desert scrub species such as creosote, mesquite, saltbush, yucca, sagebrush and a variety of annual forbs and grasses. The specific composition of vegetation varies across the basin floor as a function of local soils, topography, wind and precipitation. The only significant topographic feature in the Test Track area is Tularosa peak, an intrusive volcanic formation which rises 300m above the basin floor. The Test Track lies at the northeastern periphery of the vast complex of gypsum dunes derived from Lake Lucero and ancient Lake Otero, known as *White Sands.*

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

The local Tularosa Basin has a highly stable gravity vector and is highly geologically stable which enhances the local facilities. This stability is critical to maintaining the Test Track's precise alignment of .01 inches throughout the track's length. This precision is a major factor that allows the Test Track to achieve world speed records of Mach 8.

(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.

No. All requirements satisfied at this location.

(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?

Below 32 degrees:	8 days
Between 32 and 95 degrees:	357 days
Above 95 degrees:	0 days

(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%?

Below 30%:	30 days
Between 30% and 80%:	335 days
Above 80%:	0 days

(3.1.H.6) What is the number of test missions per year (1985 - 1993) canceled due to weather?

Less than three test missions are canceled per year on average.

(3.1.H.7) What is the number of test days per year (1985 - 1993) canceled due to weather?

On average there are no complete test days canceled for weather.

(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?

Less than one mile:	0 days
Between one and 3 miles:	0 days
Greater than 3 miles:	365 days

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

Not Applicable. No flight testing conducted at the Test Track.

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

Including delays for wet rails and winds exceeding test requirements, less than 1%.

(3.2.A.1) Do supersonic corridors or areas exist? Yes/no.

Not Applicable. No flight testing conducted at the Test Track.

(3.2.A.2) Where are they located relative to your airfield?

Not Applicable. There are no airfields/supersonic corridors at the Test Track.

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

Not Applicable. There are no airfields/supersonic corridors at the Test Track.

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

Not Applicable. There are no airfields/supersonic corridors at the Test Track.

(3.2.A.5) Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

Not Applicable. There are no airfields/supersonic corridors at the Test Track.

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

Not Applicable. There are no airfields/supersonic corridors at the Test Track.

(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.

Not Applicable. There is no airfield at the Test Track.

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

Not Applicable. There is no airfield at the Test Track.

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

Not Applicable. There is no airfield at the Test Track.

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

Not Applicable. There is no airfield at the Test Track.

(3.2.B.5) Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

Not Applicable. There is no airfield at the Test Track.

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

Not Applicable. There is no airfield at the Test Track.

(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)

The sled track is used for air vehicle testing including crew escape, air blast, bird strike, aeropropulsion, parachute service life, munitions launch and Infrared Countermeasures (IRCM). These tests are done by mounting an aircraft system mockup (up to full size aircraft) on a sled and launching it down the track, or by firing a test item down the track and flying an aircraft over it.

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

Yes, for both the aircraft and the sled test items.

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

One or two fixed wing aircraft (C-5, C-141, C-130, F-100, T-38) and up to three rotary wing aircraft (SH-60, HH-1) have been used to support previous tests on the sled track. The number of aircraft used during a mission is limited by the availability of White Sands Missile Range (WSMR) airspace. However, we've never had reason to use a number of aircraft in a sled test which remotely approached that limit.

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

No.

(3.2.C.5) What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

All sorts of missions can be flown within local airspace. Missions flown in support of sled track testing, however, typically involve air-to-air or air-to-ground systems, such as Rotary wing Infrared Countermeasures (IRCM) and Missile Warning Receiver (MWR).

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

Multiple telemetry channels can support two simultaneous missions.

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

One.

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

Not Applicable. There is no airfield at the Test Track.

(3.3.A.1) What is the number of threats simulated?

Most threats with infrared signatures can be simulated by firing the actual threat rocket motor down the track, or by a static motor firing of an actual Infrared (IR) threat. The guidance and control sections of these threats are typically removed before the test. Since each motor is a "simulated" threat, and most are readily attainable, there is no practical limit to the number of threats which can be simulated.

(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?

Although theoretically possible to fire up to five separate live motors (IR threats) simultaneously down track, two is the more practical number. Type is determined (supplied) by the customer. An almost unlimited number of static Infrared (IR) threats can be accommodated.

(3.3.A.3) Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

Not Applicable. Software models and simulations are not used by the Test Track. When threats are presented, actual hardware is used.

(3.3.A.4) Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

Open loop-Yes. Reactive-Yes. Closed loop-No.

(3.3.A.5) What is the threat representation (fidelity) and density?

Threats are actual Infrared (IR) threat rocket motors with guidance and control removed. Usually one motor at a time is fired during Infrared Countermeasures (IRCM) and Missile Warning Receiver (MWR) tests.

(3.3.A.6) Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

Not Applicable.

(3.3.A.7) What geographic dispersion can be simulated?

Dynamic threats are confined to the length of the track. Static Infrared (IR) threats can potentially be put anywhere on the White Sands Missile Range (WSMR).

(3.3.A.7.A) Threat lay down?

Not Applicable.

(3.3.A.7.B) Representative distance?

Not Applicable.

(3.3.A.8) Are the threats moveable (i.e. dynamic) within a test scenario? relocatable to new scenarios? yes/no

Yes, but constrained to the track.

(3. 3.A.9) Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

No.

(3.3.A.10) Is there a limit on simultaneous users? Yes/no. If no, explain.

Yes. Typically, only one test is run at a time on the sled track.

(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.

Track load limitation- Down: 100,000 pounds
Up: 50,000 pounds
Lateral: 40,000 pounds
There are no plans to increase load limits.

Design limitation - approximately Mach 10. This is the limit with the current sled and slipper designs. The limiting factor is the non existence of a higher performance rocket motor. Development of such a motor for track applications is cost prohibitive. The magnetic levitation program will permit higher velocities in the future.

(3.3.B.2) What is the number of simultaneous countermeasures that can be evaluated?

Essentially unlimited. The customer would decide how many of his countermeasures he would like to evaluate against the threats he requests.

(3.3.B.3) What range of spectra can be tested and evaluated?

Infrared (IR).

(3.3.B.4) What are the available spectra?

Infrared (IR).

(3.3.B.5) Do you have a scene generation capability? Yes/no. If yes, describe.

Not Applicable. Digital or other types of artificial scene generation are not appropriate for the type of testing conducted on the Test Track.

(3.4.A.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?

No.

(3.4.B.1.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?

Test Track - 11 square land miles. No water space. White Sands Missile Range (WSMR) - 4,000 square land miles.

(3.4.B.1.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.

Track - 11 square miles. White Sands Missile Range (WSMR) - 4,000 square miles. Both land.

(3.4.B.1.C) What are the maximum ranges (nautical miles) you can test, by type weapon?

For test items that launch from the track, a maximum range of fifty nautical miles is available before the end of the restricted area is reached. For test items that must be retained on the sled track, the maximum range is 10 miles.

(3.4.B.2.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:

--Unguided 2000 pound-class ballistic weapon	
---live?	**0**
---inert?	**3**
--Guided weapon (e.g., GBU-24 class)	
---live?	
---inert?	
--Stand-off weapon (e.g., AGM-130 class)	
---live?	
---inert?	

--Short-range missile (e.g., AIM-9)
---below 5000 feet MSL 2
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL
--Long-range missile (e.g., AIM-120)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL

(3.4.B.2.B) Were flight termination systems required? Yes/no.

Yes - Only when the range of the test item exceeded range boundary limits.

(3.4.B.2.C) If no missions were scheduled in a category, give the reason(s).

No requirement.

(3.4.B.2.D) 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.

No.

APPENDIX A

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: HOLLOMAN HIGH SPEED TEST TRACK

T&E FUNCTIONAL AREA		FISCAL YEAR							
		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	46,447	30,580	29,890	39,685	59,314	36,150	24,480	21,373
	TEST HOURS	345	252	316	414	614	332	256	216
	MISSIONS	42	22	26	52	85	40	29	21
EC	DIRECT LABOR	0	0	2,589	1,755	5,657	5,622	9,595	5,764
	TEST HOURS	0	0	27	18	59	52	100	58
	MISSIONS	0	0	7	57	74	15	57	75
ARMAMENT/WEAPONS	DIRECT LABOR	79,227	49,223	31,451	44,958	31,515	39,581	63,156	77,679
	TEST HOURS	589	407	333	470	328	364	660	787
	MISSIONS	83	53	18	35	15	15	19	30
OTHER T&E	DIRECT LABOR	22,912	33,613	51,924	39,930	31,088	30,184	27,293	22,297
	TEST HOURS	171	279	549	418	326	277	285	227
	MISSIONS	4	14	66	31	42	20	18	24
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS	0	0	0	0	0	0	0	0

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: HOLLOMAN HIGH SPEED TEST TRACK

			ANNUAL HOURS OF DOWNTIME	2,920
			AVERAGE DOWNTIME PER DAY	8
			AVERAGE HOURS AVAILABLE PER DAY	16
TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY 1,579.2
SLED	1	98.7	98.7	ANNUAL UNCONSTRAINED CAPACITY
TYPICAL SLED	0	0	0	576,408
		TOTAL SUM	98.7	

NOTE: TYPICAL REPRESENTS ADDITIONAL TESTS THAT COULD BE ACCOMPLISHED IF MANPOWER WERE UNCONSTRAINED.

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: HOLLOMAN HIGH SPEED TEST TRACK

AGE: 21 to 44 yrs

REPLACEMENT VALUE: $177,454,117

MAINTENANCE AND REPAIR BACKLOG:

DATE OF LAST UPGRADE: 1973

NATURE OF LAST UPGRADE: 15,000 ft rail extension

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: Magnetic Levitation
TOTAL PROGRAMMED AMOUNT: $20,000,000.00
SUMMARY DESCRIPTION: Construction and checkout of magnetic levitation system.

2. UPGRADE TITLE: None
TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:

HOLLOMAN HIGH SPEED TEST TRACK

GENERAL INFORMATION

Facility/Capability Title: HOLLOMAN HIGH SPEED TEST

Origin Date: 5 May 1994

Service: USAF

Organization/Activity: 46 Test Group

Location: Holloman AFB, NM

T&E Functional Area: Armament/Munitions

UIC: Not Available

T&E Test Facility Category: Measurement Facility

	T&E	S&T	DE	IE	T&D	OTHER	
PERCENTAGE USE:	100	0	0	0	0	0	TOTAL = 100%
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles	16.8	0	0	0	0	0	
Armament/Weapons	61.1	0	0	0	0	0	
EC	4.5	0	0	0	0	0	
Other	17.6	0	0	0	0	0	

TECHNICAL INFORMATION

Facility/Capability Title: HOLLOMAN HIGH SPEED TEST TRACK

Facility Description; Including Mission Statement: The Holloman High Speed Test Track is the longest (50,788 ft) and most precisely aligned and instrumented facility of its kind in the world. The track is used to simulate selected flight trajectories of aircraft and missiles under accurately programmed, closely controlled and rigorously monitored conditions. In track test, payloads and instrumentation are propelled by rocket-powered sleds along a set of straight, heavy-duty rails. Sled speeds up to 7,000 feet per second (Mach 6) are attained on a routine basis, and speeds above 8,900 feet per second (Mach 8) have been demonstrated. The payloads normally weigh up to 30,000 pounds; however, depending on mission requirements, heavier payloads are possible. Mission Statement: The Test Track Division operates the world's premier test facility for rocket sled testing of weapon systems. Provides unique test environments, such as extremely high accelerations, and hypersonic velocities. Test items include theater missile defense interceptors, aircraft, egress systems, and missile guidance systems. Conducts test planning, execution, and system performance analysis for program offices.
Interconnectivity/Mulit-Use of T&E Facility: Physical proximity to White Sands Missile Range (WSMR) allows combined testing of sled-launched air vehicles. Track personnel also operate an adjacent ballistic rain field used to qualify artillery fuzes.
Type of Test Supported: Dynamic testing of crew escape systems; aerodynamic decelerators; rain, dust, particle erosion, guidance systems; and aeropropulsion systems. Impact testing including survivability, lethality, and fragmentation warheads; transonic through hypersonic aerodynamic testing; dispense system testing; explosive blast testing; launch into free flight from moving test beds; and electronic counter-measures testing including flares, missile scoring systems, infrared devices, threat rockets, missile warning receivers, etc.
Summary of Technical Capabilities: Instrumentation/Assets: IRIG Standard FM/FM and PCM/FM telemetry with real time data collection and reduction for up to 8 simultaneous carriers. High frame rate photography, metric photography, and video capability. Full engineering design and fabrication capabilities for test items and sleds. Test operation and management support. Simulated rain environment. Horizontal test stand. Heavy equipment. Large solid rocket motor inventory.
Keywords: Rocket Sleds, Hypersonic, Aerodynamic, Explosive, Impact, Lethality, Testing, Rain Erosion, Live Fire, Infrared Countermeasures, Sled Track

HOLLOMAN HIGH SPEED TEST TRACK

ADDITIONAL INFORMATION

Facility/Capability Title: HOLLOMAN HIGH SPEED TEST TRACK

PERSONNEL	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer	6	6	6	6	6	6	6
Enlisted	2	2	2	2	2	2	2
Civilian	131	131	131	131	129	129	129
Contractor	27	27	21	21	21	21	21
Total	166	166	160	160	158	158	158

TOTAL SQUARE FOOTAGE 133,246 SF
TEST AREA SQUARE FOOTAGE 132,658 SF

OFFICE SPACE SQ. FOOTAGE 41,984 SF

TONNAGE OF EQUIPMENT About 4000 TONS
ANNUAL MAINTENANCE COST

VOLUME OF EQUIPMENT About 2,000,000 CU FT
ESTIMATED MOVING COST Not Practical

CAPITAL EQUIPMENT INVESTMENT($)

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
500,000	3,500,000	4,500,000	10,700,000	15,300,000	5,000,000	500,000

Document Separator

DET 4/TACCSF KIRTLAND AFB

Department of Defense

1995 Base Realignment and Closure T&E Joint Cross-Service Group Data Guidance

March 31, 1994

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DET 4/TACCSF KIRTLAND AFB

T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

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DET 4/TACCSF KIRTLAND AFB
T&E JOINT CROSS-SERVICE GROUP

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

The Military Departments will use the following information for data collection on each facility that has performed T&E and is still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons for any component (hardware or software), subsystem, system, or platform. Guidance is provided on conducting a cross-service analysis.

1.1 GUIDANCE

1.1.A Guidance for Identification of Test and Evaluation (T&E) Facilities / Capabilities

1.1.A.1 Scope

All DoD installations will be examined to identify facilities that have and are still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons.

All facilities (tenant and host on the installation) owned by DoD are within scope of this examination.

The Military Departments and Defense Agencies are responsible for submitting the data.

The scope of this examination will include T&E facilities that are funded from any funding source and appropriation (RDT&E, procurement, O&M, training, etc.).

1.1.A.2 T&E Facilities / Capabilities

The definition of a T&E facility/capability to be used for purposes of data collection will be a set of DoD-owned or controlled property (air/land/sea space) or any collection of equipment, platforms, ADPE or instrumentation that can

conduct a T&E operation and provide a deliverable T&E product.

The T&E facility can support T&E of components through systems platforms or missions in the following functional areas: air, land, sea, space, C4I, armaments/weapons, electronic combat, nuclear effects, chem/bio, propulsion, environmental effects, guidance, and materials.

The T&E facilities will be grouped under one of the following test facility categories: modeling and simulation, measurement, integration laboratory, hardware-in-the-loop, installed systems, or open air (See Appendix A for definitions). It will typically consist of all of the following components: data collection sensors and instrumentation, data reception and storage, data processing, and data display and reporting.

The scope will include T&E operations from all funding sources (RDT&E, procurement, O&M, training, etc.).

1.1.B Guidance for Military Department Data Collection

The Military Departments will use the T&E facility/capability definitions included within this data call package. In your descriptions of facility technical capabilities include programmed investments/upgrades in Military Department or Defense Agency 1995 Future Years Defense Plan (FY95 FYDP) in support of the President's Budget (PB95). When calculating capacity data, use the guidelines/definitions included in this package.
Data will be collected on all facilities/capabilities that are within the scope defined in section 1.1.A. Data will be collected using Appendix A, Data Forms and Instructions

1.1.C Guidance for Military Department Data Analysis

The Military Departments will use the 95 FYDP as the baseline to calculate costs and savings. Address closure/realignment opportunities at the functional T&E and facility levels. Retain essential technical capabilities for core competencies and technologies. Consider consolidation of subfunctions such as centralized

maintenance of common platforms, instrumentation, data processing. Consider retention of difficult-to-replace essential geographic assets (e.g. airspace, ground/terrain, climates, seaports) without regard to "ownership". Recognize adaptability to future technologies. Do not consider environmental cleanup costs/difficulties for closure or downsizing a facility/capability.

1.2 ASSUMPTIONS

Cross-service analyses will use the following assumptions:

1.2.A T&E workload is not a direct function of force structure, but is related to the RDT&E budget and acquisition funding.

1.2.B The FYDP is considered certified data. Information from non-DoD activities will not be used as a basis for analyses.

1.2.C At least one test facility/capability will be required to address any technology in use or nearing maturation. Geographic assets (airspace, ground space, sea space, terrain, climate, physical security) must be adequate. Closure or realignments of laboratories, maintenance depots, and training activities could necessitate consolidation with T&E facilities/capabilities.

1.2.D Evaluation of developing technologies and systems will follow a process that involves a progression of test facilities/capabilities ranging from modeling and simulation, measurements, through hardware-in-the-loop, system integration laboratories, installed-systems, to open air/range testing.

1.2.E Potential for internetting facilities/capabilities can be considered in workload projections if investments to provide internetting capability are programmed.

1.2.F With regard to outsourcing, it will be assumed that work currently performed in-house will remain in-house and that work currently outsourced will remain outsourced.

1.2.G With regard to foreign military sales (FMS), it will be assumed that the FMS workload will continue at FY93 levels into the future (straight-lined).

1.3 FUNCTIONAL AREAS

Three functional areas of T&E facilities/capabilities were selected for specific emphasis during cross-service analyses following analysis of the T&E Reliance study areas. These three areas -- air vehicles, electronic combat, and armament/weapons -- show the greatest potential for cross-service consolidation opportunities; others are predominately or nearly Military Department unique.

Over-arching measures of merit have been developed that are applicable to many T&E facilities/capabilities across the three functional areas. These measures generally relate to the overall demographics of the facility/capability at an installation and are important to evaluating a facility/capability for: overall condition; potential to support current or future contingency, mobilization and future missions; additional workload; and overall Mission Essentiality. Additional data specific to the three functional areas will also be collected. For the purpose of this data collection, the three functional areas are defined as follows:

1.3.A 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 sub-systems (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.

1.3.B Electronic Combat (EC) Systems

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.

1.3.C Armaments / 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.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

Use the forms and accompanying instructions in appendix A to provide answers for this section.

2.1 WORKLOAD

Annual workload will be reported in units as follows: for open air ranges involving flight testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

2.1.A Historical Workload

-2.1.A.1 What amount of workload have you performed each year from FY86-93? Use the Historical Workload Form provided in Appendix A of this package.

SEE THE ATTACHED HISTORICAL WORKLOAD FORM IN APPENDIX A

2.1.B Forecasted Workload

-2.1.B.1 Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP. The Military Departments will provide total funding amounts appropriated for all PEs identified in each functional area shown above.

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WE ARE UNABLE TO ACCURATELY FORECAST A GREAT PERCENTAGE OF OUR FUTURE REQUIREMENTS DUE TO THE RAPIDLY CHANGING CUSTOMER BASE. THE FOLLOWING DATA INCLUDES OUR KNOWN FUTURE REQUIREMENTS:

FY 92	FY 93	FY 94	FY 95 FYDP
63742F NCTI 534.0	1H850VUSAFAWC 50.0	27426F AFOTEC LINK 50.0	PE63832D DMSO PROJECTS
P2216 THEATER MISSILE DEFENSE (SDIO) 1750.0	AFOTEC LINK 40.0	AFOTEC LINK 40.0	JOINT THEATER MISSILE DEFENSE JOINT TEST FORCE
63216C PHILLIPS LAB - AIRBORNE LASER 450.0	150535 THEATER BATTLE ARENA 1200.0	27601F THEATER BATTLE ARENA 304.0	THEATER BATTLE ARENA DEMOS AND TESTS
696997 JADO/JEZ 10.0	832070 THEATER BATTLE ARENA 3207.0	L45828 THEATER BATTLE ARENA 500.0	AF THEATER MISSILE DEFENSE TEST
28945K JITC 25.0	696997 JADO/JEZ JTF 150.0	696997 JADO/JEZ JTF 100.0	COMBAT ID TESTING
	63832D DEFENSE MODELING & 1400.0 SIMULATION OFFICE (DMSO)	63832D DEFENSE MODELING & SIMULATION OFFICE (DMSO) JTMDSN 3187.0	
	63832D PHILLIPS LAB - E2DIS 30.0	63832D PHILLIPS LAB - E2DIS 30.0	
	63216C EADTB MODELS 250.0	UNKNOWN ARPA - ADI 1300.0	
	63216C ACC TMD STUDIES 561.0	S09177 FORCES COMMAND - JSTE 86.6	
	S09177 FORCES COMMAND - JSTE 300.0	63216C NTF FOR TMD C3I 50.0	
	63216C NTF FOR TMD C3I 50.0	63215C NTF FOR TMD C3I 14.0	

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	63216C NTF FOR TMD C3I 14.0	63216C ACC TMD STUDIES 312.0	
	BPAC83N2 SWC/FMFC 5.4	BPAC83N2 SWC/FMFC 5.40	
	CH3091 SANDIA LABS - UGS PROJECT 103.0	CH3091 SANDIA LABS - UGS PROJECT 50.0	

-2.1.B.2 What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

WORK YEARS DEVOTED DIRECTLY TO TESTING (EXCLUDING TEST BED UPGRADES, SOFTWARE/HARDWARE DEVELOPMENT, AND TEST PREPARATION) WERE:

FUNCTIONAL AREA	FY 92	FY 93
	12.5	24.5

BECAUSE OF THE NATURE OF THE UNIT'S TESTS, IT IS VIRTUALLY IMPOSSIBLE TO BREAK OUT WORK YEARS BY FUNCTIONAL AREAS. THE UNIT'S TESTS ENCOMPASS ALL OF THE AREAS CONCURRENTLY WITHOUT ANY SINGLE AREA BEING SINGLED OUT. THE TESTBED SCENARIOS INCORPORATE EACH OF THE FUNCTIONAL AREAS INTO A SINGLE SCENARIO.

2.2 UNCONSTRAINED CAPACITY

-2.2.A Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.). Provide your response by filling out the Determination of Unconstrained Capacity Form in accordance with the instructions in

Appendix A.

SEE THE ATTACHED DETERMINATION OF UNCONSTRAINED CAPACITY FORM

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

YES.
THE PHYSICAL SIZE OF THE FACILITY HAS AN IMPACT ON THE COMPUTER TESTBED CONFIGURATION AND LIMITS THE NUMBER OF COMPUTERS/SIMULATORS AND PERSONNEL REQUIRED TO INCREASE THE FACILITIES CAPABILITIES.

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. DET 4, 505TH CCEG, THEATER COMMAND AND CONTROL FACILITY DOES NOT HAVE A WAR-TIME CONTINGENCY ROLE ESTABLISHED IN APPROVED WAR PLANS.

-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?

THE HOST FACILITY, KIRTLAND AFB, WOULD NOT BE IRREPARABLY HARMED WITHOUT THE SERVICES OF TACCSF. TACCSF PROVIDES A ONE-OF-A-KIND SIMULATION FACILITY WHICH SUPPORTS T&E FOR TWO TENANT UNITS AT THE HOST INSTALLATION. TACCSF IS THE PRIMARY SIMULATION FACILITY SUPPORTING SANDIA NATIONAL LABORATORIES UNATTENDED GROUND SENSOR TESTING AND THE PHILLIPS LABORATORY AIRBORNE LASER DIRECTED ENERGY WEAPON PROGRAM. THE DEPUTY UNDERSECRETARY OF DEFENSE, ACQUISITION AND

TECHNOLOGY, DIRECTOR, TEST AND EVALUATION IS CONDUCTING A JOINT FEASIBILITY STUDY FOR CONDUCTING A THEATER MISSILE DEFENSE (TMD) JOINT TEST AND EVALUATION (JT&E) BEGINNING IN FY95. THE TMD JOINT TEST FORCE WILL BE LOCATED AT KIRTLAND AFB AND WOULD USE TACCSF AS ITS PRIMARY OPERATOR-IN-THE-LOOP SIMULATION FACILITY. THE TACCS IS A DISTRIBUTED SIMULATION HUB WHICH LINKS SEVERAL SIMULATION FACILITIES AND LIVE RANGES ACROSS THE COUNTRY USING WIDE AREA NETWORKS AND SATELLITE COMMUNICATIONS. THE TACCSF IS AVAILABLE FOR USE BY PHILLIPS LABORATORY, SANDIA NATIONAL LABORATORIES, AND THE AIR FORCE TEST AND EVALUATION CENTER AT KIRTLAND AFB.

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

YES. THE TACCSF WILL BE THE PRIMARY AIR FORCE FACILITY FOR THE DEFENSE MODELING AND SIMULATION OFFICE-SPONSORED JOINT ENVIRONMENT FOR TESTING, TRAINING, AND ANALYSIS, AN INFRASTRUCTURE PROGRAM WHICH WILL SUPPORT JOINT SERVICE T&E OF TACTICAL DATA LINKS. TACCSF IS BEING USED FOR THE BALLISTIC MISSILE DEFENSE ORGANIZATION THEATER MISSILE DEFENSE (C^3I) EXPERIMENTS DESCRIBED IN THE INTEGRATED TEST PLAN WHICH IS THE IMPLEMENTING DOCUMENT FOR TMD TEMP. TACCSF SUPPORTS THE AIR COMBAT COMMAND TMD OPERATIONS CONCEPT DEMONSTRATIONS WHICH EVALUATE THE UTILITY OF MODIFICATIONS TO NEAR-OPERATIONAL AND FIELDED SYSTEMS FOR IMPROVING TMD MISSION PERFORMANCE. DATA FROM OCDS IS BEING USED TO REFINE OPERATIONAL REQUIREMENTS DOCUMENTS FOR TMD SYSTEMS.

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

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YES. TACCSF SUPPORTS SCIENCE AND TECHNOLOGY EFFORTS ASSOCIATED WITH THE WRIGHT LABORATORIES COMBAT IDENTIFICATION AND THE ADVANCED RESEARCH PROJECTS AGENCY WAR BREAKER TIME-CRITICAL MOBILE TARGETS, AIR DEFENSE INITIATIVE SENSOR TECHNOLOGY, AND SYNTHETIC THEATER OF WAR PROGRAMS. THE FOLLOWING TRAINING AND DOCTRINE PROGRAMS USE TACCSF:

- US ARMY AIR DEFENSE ARTILLERY SCHOOL PATRIOT OFFICER'S COURSE
- US FORCES COMMAND AND JOINT WARFIGHTING CENTER JOINT SYSTEMS TRAINING EXERCISES
- USAF WEAPONS AND TACTICS CENTER WEAPONS SCHOOL CONTROLLER TRAINING COURSE

THE DEFENSE MODELING AND SIMULATION OFFICE PROVIDES FUNDING TO TACCSF TO DEVELOP DISTRIBUTED SIMULATION TECHNOLOGY WHICH MAY BE APPLIED THROUGHOUT THE LIFE CYCLE OF COMMAND AND CONTROL WEAPONS SYSTEMS. TACCSF SIMULATIONS ARE USED TO AUGMENT LIVE SYSTEMS IN THE FIELD WHEN CAPABILITY IS NOT AVAILABLE DUE TO COST, RANGE, SAFETY, SCHEDULING, AND SECURITY CONSTRAINTS DURING EXERCISES AND LIVE TESTS.

SECTION 3: MEASURES OF MERIT

This section relates the measures of merit and the required data to the four criteria that have been established for Military Value. The four military value (MV) criteria are:

CRITERION 1: The current and future mission requirements and the impact on operational readiness of the Department of Defense's total force.

CRITERION 2: The availability and condition of land, facilities and associated airspace at both the existing and potential receiving locations.

CRITERION 3: The ability to accommodate contingency, mobilization, and future total force requirements at both the existing and potential receiving locations.

CRITERION 4: The cost and manpower implications.

3.1 OVER-ARCHING MEASURES OF MERIT

The over-arching measures of merit are listed with accompanying questions (or data requirements) intended to elicit standard information upon which the cross-service analyses can be based, and on which the Joint Cross-Service Groups can base their reviews of the Military Department analyses. Additional specific measures of merit are shown under individual functional areas. The numbers in parentheses () before each measure of merit indicate the BRAC selection criteria for military value.

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 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 and external to the site.

OF THE FY93 WORKLOAD, 57% INVOLVED REALTIME DATA EXCHANGE WITH OTHER FACILITIES, ALL EXTERNAL TO TACCSF.

See p. 247a

TACCSF HAS DIRECT T-1 DATA LINKS WITH THE NATIONAL TEST FACILITY (NTF) IN COLORADO; THE NAVY'S RESEARCH, EVALUATION, AND SYSTEMS ANALYSIS (RESA) FACILITY IN SAN DIEGO, CALIFORNIA; THE THEATER BATTLE ARENA (TBA) AT THE PENTAGON; AND THE WARBREAKER NETWORK IN ARLINGTON, VIRGINIA; THE NAVY'S AEGIS TRAINING CENTER IN

INSTALLATION WORKSHEET
Modeling and Simulation
Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.1.A.1

-3.1.A.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 and external to the site.

SOURCE: Thomas J. Brown, Simulation Systems Manager, BDM ESC, TACCSF Technical Support Contract, Det 4, 505th CCEG, DSN246-1472. Ms. Kim Heard, Requirements, Det 4, 505th CCEG, DSN246-1471

METHOD: Personal Knowledge

CONCLUSION: "TACCSF has direct T-1 data links with the National Test Facility (NTF) in Colorado; the Navy's Research, Evaluation, and Systems Analysis (RESA) facility in San Diego, California; the Theater Battle Arena (TBA) at the Pentagon; and the WARBREAKER network in Arlington, VA. TACCSF also has plans to establish direct T-1 links with Tonopah Test Range (Nevada), Depth and Simultaneous Attack Battle Lab (Ft. Sill, OK), and AFOTEC (KAFB, NM). Through the WARBREAKER network, TACCSF has access to and has linked with the following sites: Navy Aegis Training Ckenter, Dahlgren, VA; Army, Fort Knox, KY; Army, Fort Rucker, AL; Wright Labs, WPAFB, OH; EXCAP, CA; F-15C Domes, McDonnel Douglas, St. Louis, MO; MICOM, Hunstville, AL; and Topographic Engineering Center, Reston, VA. Generally, broad, multi-agency, joint simulations are conducted using Distributed Interactive Simulation (DIS) protocol involving numerous AF, Army, Navy, and National systems. Approximately twelve (12) major exercises are conducted annually. Each exercise usually lasts for about one week; however, pre-test integration tests usually require one to two weeks of additional connectivity. Based on historical data, TACCSF performed 17 tests covering 53 test days during FY93. Of these test days, 19 or 30.6% involved real time exchange of data with another facility.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Thomas J. Brown Date 15 Sep 94

MR. THOMAS J. BROWN, BDM ESC., DET 4, 505TH CCEG, 246-1472

Typed Name, Rank, Office Symbol, DSN Number

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

See Major Com Sign Copy Date

Typed Name, Rank, Office Symbol, DSN Number

DAHLGREN, VIRGINIA; THE ARMY AT FORT KNOX, KENTUCKY; THE ARMY AT FORT RUCKER, ALABAMA; WRIGHT LABORATORIES, WRIGHT PATTERSON AFB, OHIO; EXCAP,

CALIFORNIA; THE F-15C SIMULATOR AT MCDONNELL DOUGLAS, ST LOUIS; MICOM, ALABAMA; AND TEC IN VIRGINIA.

TACCSF PLANS TO ESTABLISH T-1 LINKS WITH THE TONOPAH TEST RANGE IN NEVADA AND AFOTEC AT KIRTLAND AFB, NEW MEXICO. GENERALLY, BROAD, MULTI-AGENCY, JOINT SIMULATIONS ARE CONDUCTED USING DISTRIBUTED INTERACTIVE SIMULATION (DIS) PROTOCOL INVOLVING NUMEROUS AIR FORCE, ARMY, NAVY, AND NATIONAL SYSTEMS. APPROXIMATELY TWELVE (12) MAJOR EXERCISES ARE CONDUCTED ANNUALLY. EACH EXERCISE USUALLY LAST ONE WEEK. PRE-TEST INTEGRATION TESTS USUALLY REQUIRE ONE TO TWO WEEKS OF ADDITIONAL CONNECTIVITY. THROUGH SATELLITE COMMUNICATIONS, TACCSF IS ABLE TO INTERACT WITH LIVE AIR FORCE CONTROL AND REPORTING CENTERS (CRC) AND MARINE TACTICAL AIR OPERATION CENTERS (TAOC) AT THEIR UNITS LOCATED AROUND THE COUNTRY.

ALL DIS ACTIVITIES WITH THE FACILITIES LISTED ABOVE ARE SIMULTANEOUS ACTIVITIES

-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.

CLOSING TACCSF WOULD HAVE A MAJOR DETRIMENTAL IMPACT ON JOINT EXERCISES. TACCSF PROVIDES A MAJOR PORTION OF THE SCENARIO (BLUE AIR, RED AIR, AND GROUND TRACKS), AND IS TRULY A UNIQUE MAN-IN-THE-LOOP SIMULATION OF NUMEROUS AIR FORCE SYSTEMS. TACCSF SUPPORTS JOINT SIMULATION EXERCISES TO INCLUDE JOINT THEATER MISSILE DEFENSE SIMULATION NETWORK (JTMDSN), JOINT

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ENVIRONMENT FOR TESTING, TRAINING, AND ANALYSIS (JETTA), JOINT SYSTEM TRAINING EXERCISE (JSTE), OPERATIONAL CONCEPT DEMONSTRATIONS (OCD), SYNTHETIC THEATER OF WAR - EUROPE (STOW-E), AND THEATER MISSILE DEFENSE WAR GAMES. WITHOUT TACCSF, THE EFFECTIVENESS OF JOINT EXERCISES WOULD BE REDUCED DRASTICALLY.
WITH SATELLITE COMMUNICATIONS TO LIVE CRC/TAOC UNITS AND FUTURE PLANS TO INTERACTIVELY CONNECT WITH THE AIR FORCE'S AWACS AT TINKER AFB, THE ARMY'S PATRIOT UNITS AT FORT BLISS, AND THE NAVY'S AEGIS SYSTEMS, CLOSING DOWN TACCSF WOULD ADVERSELY AFFECT THE FUTURE PLANS OF JSTES.

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.

SEE THE ATTACHED FACILITY CONDITION FORM IN APPENDIX A

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.

NO. FACILITY

- 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.

- 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.

NO TACCSF DOES NOT HAVE LIMITING (CURRENT OR FUTURE) ENVIRONMENTAL AND/OR ENCROACHMENT CHARACTERISTICS ASSOCIATED WITH THE INSTALLATION/FACILITY.

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

50 NM	446,694
100NM	599,408
150NM	760,351
200NM	1,002,749

- 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.

N/A. TACCSF DOES NOT HAVE LIMITING (CURRENT OR FUTURE) ENVIRONMENTAL CHARACTERISTICS ASSOCIATED WITH THE INSTALLATION/FACILITY.

- 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

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N/A. INSTALLATION
N/A. FACILTIY

- 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.

See page 250A for update

NO TACCSF DOES NOT HAVE LIMITING (CURRENT OR FUTURE) ENVIRONMENTAL AND/OR ENCROACHMENT CHARACTERISTICS ASSOCIATED WITH THE INSTALLATION/FACILITY.

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

WITHIN 50NM: 540000 PEOPLE.
UNABLE TO OBTAIN INFORMATION FOR OTHER RADII

- 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.

N/A. TACCSF DOES NOT HAVE LIMITING (CURRENT OR FUTURE) ENVIRONMENTAL CHARACTERISTICS ASSOCIATED WITH THE INSTALLATION/FACILITY.

- 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 (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 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.

NO._ TACCSF DOES NOT HAVE SPECIALIZED FACILITIES THAT ARE REQUIRED FOR SUPPORT IN CONDUCTING TEST OPERATIONS AT ITS FACILITY

-3.1.D.2 Are specialized targets required to support this facility? Yes/no. If yes, explain.

NO.
SPECIALIZED TARGETS ARE NOT REQUIRED TO SUPPORT THIS FACILITY.

-3.1.D.2.A Have the specialized targets been validated? Yes/no. If yes, by whom?

NO. SPECIALIZED TARGETS ARE NOT REQUIRED TO SUPPORT THIS FACILITY.

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 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.

YES. TACCSF HAS AN INHERENT CAPABILITY TO PHYSICALLY EXPAND OR CONVERT EXISTING SYSTEMS TO ACCOMMODATE NEW MISSIONS/INCREASED WORK LOAD. FOR EXAMPLE TACCSF HAS INCORPORATED NUMEROUS ADVANCED SENSORS, DATA LINKS, AND ATTACK ASSETS TO SIMULATE A REALISTIC ATTACK OPERATION IN A JOINT ENVIRONMENT. THIS HAS APPLICATION TO THEATER MISSILE DEFENSE. IN ADDITION THE FACILITY HAS OVER 1500 SQ FEET OF STORAGE SPACE WHICH CAN EASILY BE CONVERTED TO AN EXPANDED TEST BED. THERE IS NO FORESEEABLE LIMIT TO THE GROWTH AND OUTPUT THAT COULD COME FROM TACCSF ALONE OR IN CONCERT WITH OTHER FACILITIES.

-3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

YES. TACCSF CAN ADAPT TO ALMOST ANY T&E WORKLOAD REQUIRED BY THE CUSTOMER. RECENT EXAMPLES INCLUDE THE ADDITION OF A GRUMMAN JSTARS JSX SIMULATOR IN THE FACILITY TO SUPPORT TMD ATTACK OPERATIONS, AN AIR FORCE WEAPONS AND TACTICS TRAINER (WTT) COCKPIT TO PROVIDE HIGH FIDELITY F-15C AND E SIMULATIONS FOR AIR DEFENSE AND ATTACK OPERATIONS, AND DEVELOPMENT OF THE THEATER BATTLE ARENA FACILITY AT TACCSF AND THE PENTAGON TO SUPPORT SIMULATIONS OF API AND BPI ACTIVE DEFENSE SYSTEMS. IN ADDITION, AN AIRBORNE LASER (ABL) MODEL WAS ADDED AT THE REQUEST OF PHILLIPS LABORATORY TO SUPPORT ITS ACQUISITION PROGRAM. WE CAN ACCEPT ANY FUNCTIONAL AREA AS IT RELATES TO MODELLING AND SIMULATION

-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.THERE IS A POTENTIAL INCREASE OF INCREASE OF 50% IN LOW LEVEL TRAINING ROUTES IN THE WESTERN PART OF THE STATE.

-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. TACCSF CAN SUPPORT SECURE OPERATIONS UP TO SECRET NOFORN AND NATO SECRET.

-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.

THE 95 FYDP INCLUDES FACILITY UPGRADES TO SEVERAL OF THE MODELS AT THE TACCSF. THESE UPGRADES INCLUDE: TADIL-J DATA LINK ADDITIONS TO JSTARS, ADVANCED SENSOR, AND THE TBA; REMOTE LINKS OVER SATELLITE TO JSTE PARTICIPANTS; ENVIRONMENT GENERATOR ADDITIONS AND UPGRADES.

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.TACCSF IS UNIQUE WITHIN THE AF AND DOD AS IT INCORPORATE NOT ONLY SYSTEM SIMULATORS, BUT ALSO OPERATOR-IN-THE-LOOP SIMULATORS, REALISTIC DATA LINKS (TADIL-B,TADIL-J, JTIDS, TIBS, ATDL-1 ETC). AND VOICE. ALTHOUGH OTHER FACILITIES MAY DUPLICATE PORTIONS OF

THE TACCSF SIMULATION, NO ONE TOTALLY REFLECTS TACCSF'S CAPABILITIES TO PROVIDE REALISTIC SIMULATIONS OF A NEARLY COMPLETE THEATER LEVEL BATTLE INCLUDING COMMAND AND CONTROL, INTELLIGENCE INPUTS, AND EXECUTION LEVEL AIR DEFENSE (INCLUDING BALLISTIC MISSILE DEFENSE).

-3.1.F.1.A Within the US Government? Yes/no. If yes, describe.

YES. TACCSF IS UNIQUE WITHIN THE US GOVERNMENT BECAUSE IT EMPLOYS THE USE OF COMBAT SIMULATORS AND EMULATORS OF CURRENT AND PROJECTED THEATER AIR DEFENSE SYSTEMS, HIGH FIDELITY DATA LINKS (TADIL-B, TADIL-J, TIBS, ATDL-T ETC.) AND VOICE NETWORKS. ALTHOUGH OTHER FACILITIES MAY REPRESENT A SUBSET OF TACCSF, NO SINGLE FACILITY REFLECTS TACCSF'S INTEGRATED AND DISTRIBUTED SIMULATION CAPABILITIES. FURTHERMORE, TACCSF IS UNIQUE BECAUSE IT REPRESENTS COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE (C4I) ARCHITECTURE OF THE AIR FORCE AND ARMY, WHICH CANNOT BE REPRESENTED IN EQUAL FIDELITY AT ANY OTHER US GOVT FACILITY.

-3.1.F.1.B Within the US? Yes/no. If yes, describe.

YES. TACCSF IS UNIQUE WITHIN THE AF AND DOD AS IT INCORPORATE NOT ONLY SYSTEM SIMULATORS, BUT ALSO OPERATOR-IN-THE-LOOP SIMULATORS, REALISTIC DATA LINKS (TADIL-B,TADIL-J, JTIDS, TIBS, ATDL-1 ETC). AND VOICE. ALTHOUGH OTHER FACILITIES MAY DUPLICATE PORTIONS OF THE TACCSF SIMULATION, NO ONE TOTALLY REFLECTS TACCSF'S CAPABILITIES TO PROVIDE REALISTIC SIMULATIONS

OF A NEARLY COMPLETE THEATER LEVEL BATTLE INCLUDING COMMAND AND CONTROL, INTELLIGENCE INPUTS, AND EXECUTION LEVEL AIR DEFENSE (INCLUDING BALLISTIC MISSILE DEFENSE).

-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 FY93 by Military Department.

YES.
TACCSF SUPPORTS OSD, AF, NAVY, ARMY AND NATIONAL AGENCIES IN VARIOUS PROGRAMS. WORKLOAD AS A SERVICE PERCENTAGE IS NEARLY IMPOSSIBLE TO BREAKOUT SINCE NEARLY ALLL EXCERCISES/WORK IS CONDUCTED IN A JOINT ENVIRONMENT. PROJECTS SUPPORTED INCLUDE THE FOLLOWING:

- **JOINT THEATER MISSILE DEFENSE SIMULATION NETWORK (DMSO)**
- **JOINT EXCERCISES FOR TESTING,TRAINING, AND ANALYSIS (DMSO)**
- **JOINT SYSTEM TRAINING EXERCISES (JWFC)**
- **SYNTHETIC THEATER OF WAR - EUROPE (ARPA)**
- **THEATER MISSILE DEFENSE WAR GAME (BMDO)**

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?

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE.

-3.1.G.2 Who owns and or controls the land under the restricted airspace you

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use?

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE.

-3.1.G.3 How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE.

-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)? Dimensions? Will it support simultaneous users? Yes/no.

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. See p. 256a

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

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE.

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

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE.

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

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE.

-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.

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE.

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/riverine, desert, and sea. State the area of each in square miles.

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE.

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

NO. TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE.

-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.

NO TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE.

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Modeling and Simulation
Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.1.G.4

-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)? Dimensions? Will it support simultaneous users? Yes/no.

SOURCE: Maj Robert J. Sirois, Deputy Commander, Det 4, 505th CCEG, DSN246-1472

METHOD: Personal Knowledge

CONCLUSION: No. TACCSF is a modeling and simulation facility. It does not require the availability of air, land, and sea space.

Preparer: I certify the above information is ~~accurate and~~ complete to the best of my knowledge and belief.

_____ **Date** 13 Sep 94

MAJ SIROIS, DET 4, 505TH CCEG, 246-1472

_____
Typed Name, Rank, Office Symbol, DSN Number

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

See Majcom for sign copy _____ **Date**_____

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256a

-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?

DAYS BELOW 32 DEGREES F: 115
DAYS BETWEEN 32 AND 95 DEGREES F: 227
DAYS ABOVE 95 DEGREES F: 23

-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%?

DAYS PER YEAR THE AVERAGE RELATIVE HUMIDITY IS BELOW 30%: 0

DAYS PER YEAR THE AVERAGE RELATIVE HUMIDITY IS BETWEEN 30% AND 80%: 365

DAYS PER YEAR THE AVERAGE RELATIVE HUMIDITY IS ABOVE 80%: 0

-3.1.H.6 What is the number of test missions per year (1985 - 1993) canceled due to weather?

0 MISSIONS CANCELED DUE TO WEATHER. CLIMATOLOGICAL FACTORS DO NOT IMPACT ON THE FACILITIES CAPABILITIES.

-3.1.H.7 What is the number of test days per year (1985 - 1993) canceled due to weather?

0 MISSIONS CANCELED DUE TO WEATHER. CLIMATOLOGICAL FACTORS DO NOT IMPACT ON THE FACILITIES CAPABILITIES.

-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?

DAYS PER YEAR THE VISIBILITY IS LESS THAN 1 MILE: 12
DAYS PER YEAR THE VISIBILITY IS BETWEEN 1 AND 3 MILES: 24
DAYS PER YEAR THE VISIBILITY IS GREATER THAN 3 MILES: 329

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

N/A TACCSF IS NOT INVOLVED IN FLIGHT TEST AT KIRTLAND AFB.

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

0%

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. Unmanned air vehicles and cruise missiles are included.

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.

~~261~~ 259

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Modeling and Simulation
Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.2.A.1

-3.2.A.1 Do supersonic corridors or areas exist? Yes/no.

SOURCE: Maj Robert J. Sirois, Deputy Commander, Det 4, 505th CCEG, DSN246-1472

METHOD: Personal Knowledge

CONCLUSION: No. TACCSF is a modeling and simulation facility. It does not require the availability of air, land, and sea space. The facility does not directly or indirectly support actual air vehicle operations.

Preparer: I certify the above information is ~~accurate and~~ complete to the best of my knowledge and belief.

_____ Date 30 Sep 94

MAJ SIROIS, DET 4, 505TH CCEG, 246-1472

Typed Name, Rank, Office Symbol, DSN Number

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2600a.

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Modeling and Simulation
Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.2.A.2

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

SOURCE: Maj Robert J. Sirois, Deputy Commander, Det 4, 505th CCEG, DSN246-1472

METHOD: Personal Knowledge

CONCLUSION: N/A (Reference 3.2.A.1).

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Date 13 Sep 94

MAJ SIROIS, DET 4, 505TH CCEG, 246-1472

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Date

Typed Name, Rank, Office Symbol, DSN Number

2606.

INSTALLATION WORKSHEET
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Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.2.A.3

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

SOURCE: Maj Robert J. Sirois, Deputy Commander, Det 4, 505th CCEG, DSN246-1472

METHOD: Personal Knowledge

CONCLUSION: N/A (Reference 3.2.A.1).

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Date 13 Sep 94

MAJ SIROIS, DET 4, 505TH CCEG, 246-1472

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2600

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Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.2.A.4

-3.2.A.4 Over land or water? What size and shape (length and width)?

SOURCE: Maj Robert J. Sirois, Deputy Commander, Det 4, 505th CCEG, DSN246-1472

METHOD: Personal Knowledge

CONCLUSION: N/A (Reference 3.2.A.1).

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Robert J. Sirois Date 13 Sep 94

MAJ SIROIS, DET 4, 505TH CCEG, 246-1472

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2600d

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Modeling and Simulation
Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.2.A.5

-3.2.A.5 Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

SOURCE: Maj Robert J. Sirois, Deputy Commander, Det 4, 505th CCEG, DSN246-1472

METHOD: Personal Knowledge

CONCLUSION: No.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Robert J. Sirois Date 13 Sep 94

MAJ SIROIS, DET 4, 505TH CCEG, 246-1472

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260e.

DET 4/TACCSF KIRTLAND AFB

NO. THERE ARE NO SUPERSONIC CORRIDORS OR AREAS WITHIN 200 NM OF KIRTLAND AFB.
TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS.

See p. 260a

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

N/A See p. 260b.

~~**TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS.**~~

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

N/A See p. 260c.

~~**TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS.**~~

-3.2.A.4 Over land or water? What size and shape (length and width)?

N/A See p. 260d.

~~**TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS.**~~

-3.2.A.5 Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

No See p. 260e.

~~**TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT**~~

ACTUAL AIR VEHICLE OPERATIONS.

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

N/A See p. 26/a

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS.

-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.

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS. THE AIRFIELD IS NOT REQUIRED FOR TACCSF OPERATIONS.

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

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS. THE AIRFIELD IS NOT REQUIRED FOR TACCSF OPERATIONS.

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

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Modeling and Simulation
Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.2.A.6

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

SOURCE: Maj Robert J. Sirois, Deputy Commander, Det 4, 505th CCEG, DSN246-1472

METHOD: Personal Knowledge

CONCLUSION: N/A (Reference 3.2.A.5).

Preparer: I certify the above information is ~~accurate and~~ complete to the best of my knowledge and belief.

Robert J. Sirois Date 13 Sep 94

MAJ SIROIS, DET 4, 505TH CCEG, 246-1472

Typed Name, Rank, Office Symbol, DSN Number

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26a.

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Modeling and Simulation
Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.2.B.5

-3.2.B.5 Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

SOURCE: Maj Robert J. Sirois, Deputy Commander, Det 4, 505th CCEG, DSN246-1472

METHOD: Personal Knowledge

CONCLUSION: No. TACCSF is a modeling and simulation facility. It does not require the availability of air, land, and sea space. The facility does not directly or indirectly support actual air vehicle operations. The airfield is not required for TACCSF operations.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Date 13 Sep 94

MAJ SIROIS, DET 4, 505TH CCEG, 246-1472

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TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS. THE AIRFIELD IS NOT REQUIRED FOR TACCSF OPERATIONS. WORKING AIRSPACE IS NOT REQUIRED FOR TACCSF OPERATIONS.

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

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS.

-3.2.B.5 Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

See p. 262a.

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS. THE AIRFIELD IS NOT REQUIRED FOR TACCSF OPERATIONS.

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

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS. THE AIRFIELD IS NOT REQUIRED FOR TACCSF OPERATIONS.

-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)

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-3.2.C.2 Do ground support facilities exist for pre-flight checkout or rehearsal of test missions?
TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS. THE AIRFIELD IS NOT REQUIRED FOR TACCSF OPERATIONS.

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

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS.

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

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT

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Modeling and Simulation
Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.2.C.8

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

SOURCE: Maj Robert J. Sirois, Deputy Commander, Det 4, 505th CCEG, DSN246-1472

METHOD: Personal Knowledge

CONCLUSION: Zero. TACCSF is a modeling and simulation facility. It does not require the availability of air, land, and sea space. The facility does not directly or indirectly support actual air vehicle operations. TACCSF is a tenant unit at Kirtland AFB.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Robert J. Sirois Date 13 Sep 94

MAJ SIROIS, DET 4, 505TH CCEG, 246-1472

Typed Name, Rank, Office Symbol, DSN Number

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See Major Sum Copy Date_____

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ACTUAL AIR VEHICLE OPERATIONS.

-3.2.C.5 What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS.

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

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS.

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

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS.

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

See p. 264a

TACCSF IS A MODELING AND SIMULATION FACILITY. IT DOES NOT REQUIRE THE AVAILABILITY OF AIR, LAND, AND SEA SPACE. THE FACILITY DOES NOT DIRECTLY OR INDIRECTLY SUPPORT ACTUAL AIR VEHICLE OPERATIONS. TACCSF IS A TENANT UNIT AT KIRTLAND AFB

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 TACCSF FACILITY CAN SIMULATE A MAXIMUM OF 2,500 THREATS.

-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?

TACCSF CAN SIMULATE SIMULTANEOUSLY 2,000 AIRBORNE INTERCEPTORS PLUS 500 SAM THREATS. SIMULATED SIGNAL DENSITY CAN BE VARIED FROM 0 - 300 MILLION WATTS RADIATED PER EMITTER AND BANDWIDTH CAN BE VARIED FROM 0 - 32,767 MHZ. THESE THREATS ARE SIMULATED AND AFFECT ALL OTHER SENSOR SIMULATIONS WITHIN THE TESTBED. BASED ON SIGNAL LEVEL, DIRECTION, AND FREQUENCY COVERAGE.

-3.3.A.3 Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

YES, PARTIALLY.
THE TACTICAL MODELS DEVELOPED BY THE JOINT TEST FORCE

IDENTIFICATION FRIEND, FOE, OR NEUTRAL (IFFN) AND CURRENTLY USED AT TACCSF WERE CERTIFIED BY THE JTF. THE ELECTRONIC COMBAT MODELS AT TACCSF ARE IN THIS CATEGORY. MODELS DEVELOPED SINCE THE JTF TURNED OVER THE TESTBED TO TACCSF ARE BEING VALIDATED. TACCSF HAS DEVELOPED A PILOT VV&A PROGRAM BASED ON DOD AND AF GUIDANCE FOR THE ENTIRE TESTBED.

-3.3.A.4 Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

YES, OPEN LOOP
YES, REACTIVE
NO, CLOSED LOOP

TACCSF IS AN OPEN LOOP, OPERATOR-IN-THE-LOOP (F-15, AWACS, PATRIOT, HAWK, MCE, ADVANCED SENSOR), REACTIVE SIMULATOR.

-3.3.A.5 What is the threat representation (fidelity) and density?

THREAT REPRESENTATION IS MEDIUM TO LOW FIDELITY WITH UP TO 2500 ENTITIES OPERATING IN REAL TIME. THE MODELS ARE REPRESENTED WITH ENOUGH DETAIL THAT THE EFFECTS OF ELECTRONIC COMBAT ON EACH OF THE OPERATOR IN THE LOOP SIMULATORS ARE REALISTIC.

-3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

YES FOR LAND, SEA, AND COMBINED LAND/SEA.
TACCSF SIMULATES LAND AND SEA THREATS AT MEDIUM TO LOW FIDELITY. THE MODELS ARE REPRESENTED WITH ENOUGH DETAIL THAT THE EFFECTS OF ELECTRONIC COMBAT ON EACH OF THE OPERATOR IN THE LOOP SIMULATORS ARE REALISTIC.

-3.3.A.7 What geographic dispersion can be simulated?

~~**TACCSF CAN SIMULATE AN AREA DURING ANY ONE SCENARIO OF 1024 NM X 1024 NM.**~~ See p. 267a

-3.3.A.7.A Threat lay down?

~~**THREAT LAY DOWN IS THEATER LEVEL WITHIN THE 1024 NM X 1024 NM AREA.**~~ See p. 267b.

-3.3.A.7.B Representative distance?

~~**THREAT LAY DOWN IS THEATER LEVEL WITHIN THE 1024 NM X 1024 NM AREA.**~~ See p. 267c.

-3.3.A.8 Are the threats moveable (i.e.dynamic) within a test scenario? relocatable to new scenarios? yes/no.

YES, MOVEABLE (DYNAMIC).
YES, RELOCATABLE TO NEW SCENARIOS.

WITHIN TACCSF SIMULATED AIR THREATS "FLY" IN REAL TIME AND MOBILE GROUND UNITS (TELS, AAAS, SAMS) MOVE IN REAL TIME. REACTION MACROS CAN BE DEFINED FOR THESE THREATS WHICH CAUSE THEM TO REACT DYNAMICALLY TO OTHER STIMULI IN THE SCENARIO, I.E., ILLUMINATION OF A RED AIR THREAT BY A BLUE WEAPON RADAR CAN CAUSE EVASIVE MANEUVERS TO BE EXECUTED. NEW SCENARIOS MAY BE CREATED BY COPYING DATA (THREATS, LOCATION, PATHS) FROM AN EXISTING SCENARIO.

-3.3.A.9 Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

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Modeling and Simulation
Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.3.A.7

-3.3.A.7 What geographic dispersion can be simulated?

SOURCE: Mr. Thomas J. Brown, Simulation Systems Manager, BDM ESC, TACCSF Technical Support Contract, Det 4, 505th CCEG, DSN246-1472

METHOD: Personal Knowledge, TACCSF Master Simulation Program Performance Specification

CONCLUSION: TACCSF can simulate an area during any one scenario of 2048 X 2048 NM.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Thomas J. Brown Date 15 Sep 94

MR. THOMAS J. BROWN, BDM ESC, DET 4, 505TH CCEG, 246-1472

Typed Name, Rank, Office Symbol, DSN Number

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

See Major Symcoy Date

Typed Name, Rank, Office Symbol, DSN Number

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Modeling and Simulation
Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.3.A.7.A

-3.3.A.7.A Threat lay down?

SOURCE: Mr. Thomas J. Brown, Simulation Systems Manager, BDM ESC, TACCSF Technical Support Contract, Det 4, 505th CCEG, DSN246-1472

METHOD: Personal Knowledge, TACCSF Master Simulation Program Performance Specification

CONCLUSION: Threat lay down is theater level within the 2048 X 2048 NM area.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Thomas J. Brown Date 15 Sep 94

MR. THOMAS J. BROWN, BDM ESC, DET 4, 505TH CCEG, 246-1472

Typed Name, Rank, Office Symbol, DSN Number

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Typed Name, Rank, Office Symbol, DSN Number

267b

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Modeling and Simulation
Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.3.A.7.B

-3.3.A.7.B Representative distance?

SOURCE: Mr. Thomas J. Brown, Simulation Systems Manager, BDM ESC, TACCSF Technical Support Contract, Det 4, 505th CCEG, DSN246-1472

METHOD: Personal Knowledge, TACCSF Master Simulation Program Performance Specification

CONCLUSION: Threat lay down is theater level within the 2048 NM X 2048 NM area.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Thomas J. Brown Date 15 Sep 94

MR. THOMAS J. BROWN, BDM ESC, DET 4, 505TH CCEG, 246-1472

Typed Name, Rank, Office Symbol, DSN Number

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

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267C

YES.
TACCSF IS LINKED TO REMOTE SITES THROUGH T-1 LINKS USING DISTRIBUTED INTERACTIVE SIMULATION (DIS) PROTOCOL. THESE REMOTE SITES CAN AND DO PROVIDE THREATS OF THEIR OWN DEPENDING ON THEIR CAPABILITY.

-3.3.A.10 Is there a limit on simultaneous users? Yes/no. If no, explain.

NO.
TACCSF HAS NO KNOWN LIMIT ON THE NUMBER OF SIMULTANEOUS USERS; THE MOST RECENT DISTRIBUTED JOINT EXERCISE INCLUDED FIVE USERS WITH NO PROBLEMS ENCOUNTERED.

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.

YES.
TACCSF OPERATING ALONE CAN SUPPORT TEST OPERATIONS WITHIN A 1024 NM X 1024 NM BOUNDARY WITH UP TO 6000 GROUND AND AIR ENTITIES IN SCENARIOS LESS THAN 12 HOURS. LINKED WITH OTHER FACILITIES USING DIS THE FACILITY CAN SUPPORT AN EXERCISE WITH LIMITS ESTABLISHED ONLY BY THE BANDWIDTH OF THE DIS CONNECTION.

-3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

TACCSF CAN EVALUATE 200 JAMMERS AND 20 CHAFF TRACKS SIMULTANEOUSLY IN A COUNTERMEASURES ROLE.

-3.3.B.3 What range of spectra can be tested and evaluated?

THE FREQUENCY RANGE THAT CAN BE EVALUATED AND TESTED IN THE COUNTER MEASURE ROLE IS RF FROM 0 MHZ TO 32,767 MHZ.

-3.3.B.4 What are the available spectra?

THE ONLY SPECTRA AVAILABLE IN TACCSF COUNTERMEASURES IS RF.

-3.3.B.5 Do you have a scene generation capability? Yes/no. If yes, describe.

YES
TACCSF USES SCENE GENERATION CAPABILITY FOR BOTH AIR AND GROUND TRUTH. COCKPIT OUT-THE-WINDOW DISPLAYS PROVIDE VERY REALISTIC VIEWS OF TERRAIN ELEMENTS AS WELL AS AIR AND GROUND VEHICLES.

3.4 ARMAMENTS / 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.

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.

-3.4.A.1 Do you currently test directed energy weapon systems? Yes/no.

YES. ← See p. 269a

INSTALLATION WORKSHEET
Modeling and Simulation
Kirtland AFB, NM

PURPOSE: To document the answer to question: -3.4.A.1

-3.4.A.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?

SOURCE: Mr. Thomas J. Brown, Simulation Systems Manager, BDM ESC, TACCSF Technical Support Contract, Det 4, 505th CCEG, DSN246-1472

METHOD: Personal Knowledge, ABL Test Plans and Reports

CONCLUSION: "Yes. TACCSF, in conjunction with Phillips Laboratory (KAFB, NM) and Los Alamos National Laboratory (NM), has developed and incorporated into the testbed a protorype Airborne Laser (ABL) simulation system designed to destroy TBMs while in the boost phase. The model includes factors such as atmospheric effects, range to target, aspect of target, and laser power. The laser weapon, as modeled, is mounted on a simulated 747 aircraft platform. A series of tests have been completed with more planned in the near future. The test objectives are focused on timelines, concept of operations, destructive capability, and operational effectiveness."

"Available power sources are simulated and can be of any magnitude or source which can be programmed into the model."

"The maximum downrange distance is only limited by the modeled terrain representation which is 2048 DM x 2048 DM."

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Thomas J. Brown Date 15 Sep 94

MR. THOMAS J. BROWN, BDM ESC, DET 4, 505TH CCEG, 246-1472

Typed Name, Rank, Office Symbol, DSN Number

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Lee Major SKN Capt Date

Typed Name, Rank, Office Symbol, DSN Number

DET 4/TACCSF KIRTLAND AFB

TACCSF, IN CONJUNCTION WITH PHILLIPS LABORATORY (KAFB, NM) AND LOS ALAMOS NATIONAL LABORATORY (NM), HAS DEVELOPED AND INCORPORATED INTO THE TESTBED A PROTOTYPE AIRBORNE LASER (ABL) SYSTEM DESIGNED TO DESTROY TBMS WHILE STILL IN THE BOOST PHASE. THE MODEL INCLUDES FACTORS SUCH AS ATMOSPHERIC EFFECTS, RANGE TO TARGET, ASPECT OF TARGET, AND LASER POWER. THE LASER WEAPON IS MOUNTED ON A 747 AIRCRAFT PLATFORM. A SERIES OF TESTS HAVE BEEN COMPLETED WITH MORE PLANNED IN THE NEAR FUTURE. THE TEST OBJECTIVES ARE FOCUSED ON TIMELINES, CONCEPT OF OPERATIONS, DESTRUCTIVE CAPABILITY, AND OPERATIONAL EFFECTIVENESS.

If yes, explain. Describe the power source(s) you have available. What is your maximum downrange distance?

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.

-3.4.B.1 Ground Space

-3.4.B.1.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?

TACCSF DOES NOT TEST LIVE SYSTEMS.

-3.4.B.1.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.

TACCSF DOES NOT TEST LIVE SYSTEMS.

-3.4.B.1.C What are the maximum ranges (nautical miles) you can test, by type weapon?

TACCSF DOES NOT TEST LIVE SYSTEMS.

3.4.B.2 Test Operations

-3.4.B.2.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:

--Unguided 2000 pound-class ballistic weapon
---live?
---inert?
--Guided weapon (e.g., GBU-24 class)
---live?
---inert?
--Stand-off weapon (e.g., AGM-130 class)
---live?
---inert?
--Short-range missile (e.g., AIM-9)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL
--Long-range missile (e.g., AIM-120)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL

TACCSF DOES NOT TEST LIVE SYSTEMS.

-3.4.B.2.B Were flight termination systems required? Yes/no.

TACCSF DOES NOT TEST LIVE SYSTEMS.

-3.4.B.2.C If no missions were scheduled in a category, give the reason(s).

TACCSF DOES NOT TEST LIVE SYSTEMS.

-3.4.B.2.D 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.

TACCSF DOES NOT TEST LIVE SYSTEMS.

APPENDIX A - DATA FORMS AND INSTRUCTIONS

1. Form, General Information

Facility/Capability: Enter the descriptive title for the facility/capability. Avoid using acronyms and abbreviations unless the title defines the acronym. Example: Guided Weapons Evaluation Facility (GWEF).

Origin date: Enter today's date in the format MM/DD/YY.

Military Department: Allowable entries include "N" for Navy, "A" for Army, and "AF" for Air Force. If the facility/capability is managed by an "Other Government Agency" (e.g. ARPA, DNA, ACC) enter the appropriate Agency name.

Organization/Activity: Enter the name (with acronym) for the field activity. Example: White Sands Missile Range (WSMR).

Location: Enter the location where the facility/capability is physically located (installation, city or other common name).

Unit Identification Code (UIC): Enter the UIC.

T&E Functional Area: Enter the single area this facility/capability primarily

DET 4/TACCSF KIRTLAND AFB

supports: Air Vehicles, Armament/Weapons, Electronic Combat, or Other.

T&E Test Facility Category: Enter the facility category based on the following definitions:

(1) Digital Models and Computer Simulations (DMS)- Those models and simulations which either provide a simulated test environment or representations of systems, components, and platforms. DMSs are used throughout the development and test process, as analytical tools, as well as tools to drive or control electronic and other environmental stimuli provided, the test articles on Open Air Ranges (OARs), Installed Systems Test Facilities (ISTFs), Hardware in the Loop Test Facilities (HITLs), Integration Laboratories (ILs), and Measurement Facilities (MFs).

(2) Measurement Facilities (MF)- Those facilities used to provide a specialized test environment and/or data collection capability. MFs may be ground based laboratories or open air facilities (often located at or part of OARs).

(3) Integration Laboratories (IL)- Those facilities designed to support the integration and test of various systems and components that will be installed in a host platform. ILs are generally platform specific or unique. However, the simulated stimuli and data collection capabilities required by ILs are often common with those required by HITLS and ISTFs.

(4) Hardware-In-The-Loop (HITL)- Those facilities which provide capabilities to test systems or their components at various stages of development (e.g., brassboard, breadboard, prototype, preproduction, production). HITLs provide stimuli and data collection capabilities to permit test and evaluation of a system/component independent of the host platform.

(5) Installed Systems Test Facilities (ISTF)- Ground based test facilities (usually chambers) that allow test of systems and weapons as installed in the combat platform. ISTFs provide simulated test environments and stimuli and data collection capabilities for the test article(s).

(6) Open Air Ranges (OAR)- Those facilities which consist of controlled or restricted areas to support the test of platforms/systems in a real world, dynamic environment. They are instrumented with data collection, time-space-position information, positive control of test participants, and real or simulated targets and threats as appropriate.

Percentage Use: Enter percentage of time, based on hours, the facility is used to support each of the following (total must sum to 100%):

(1) Test and Evaluation (T&E)- Any facility that is accountable to Military Department and/or OSD T&E management oversight. Operation and sustainment of these facilities are typically funded from 6.5 or procurement program elements. Facilities in this category were developed to support developmental and/or operational test and evaluation and focus on the evaluation of system safety, technical performance, environmental (climatic, electromagnetic, etc.) effects, sustainability and operational suitability, maturity of production processes, and compliance with system specifications and quality standards.

(2) Science & Technology (S&T)- Any facility that is accountable to Military Department and/or OSD S&T management oversight. Operation and sustainment of these facilities are typically funded from 6.1, 6.2, and 6.3a program elements. Facilities in this category were developed to support experimental studies leading to enhanced understanding of new phenomena for new military applications as well as efforts directed toward the solution of problems in the physical, behavioral, and social sciences.

(3) Developmental Engineering (DE)- Any facility that is accountable to Military Department and/or OSD Research, Development and Engineering or acquisition management oversight. Operation and sustainment of these facilities are typically funded from 6.3b through 6.4 or procurement program elements. Facilities in this category were developed to support proof-of-principle and engineering development of systems.

(4) In-Service Engineering (IE)- Any facility that is accountable to Military

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Department and/or OSD logistics management oversight. Operation and sustainment of these facilities are typically funded from 6.7 or Operations and Maintenance (O&M) program elements. Facilities in this category were developed to support the maintenance facilities. These facilities tend to be system peculiar capabilities to conduct checkouts of the system/subsystems after they have undergone a modification, upgrade or improvement.

(5) Training and Doctrine (T&D)- Any facility that is accountable to Military Department and/or OSD training and doctrine management oversight. Operation and sustainment of these facilities are typically funded from O&M program elements. Facilities in this category were developed to support the training and proficiency of operational forces and/or the development of new tactics, doctrine or force structure concepts.

(6) Other - Any work outside the above.

Breakout by T&E Functional Area: For each of the above categories (T&E, S&T, DE, IE, T&D, Other) enter percentage of time facility is used to support Air Vehicles, Armament/Weapons, Electronic Combat, or Other. Total of breakout areas must sum to top line percentage.

2. Form, Technical Information

Facility Description: Enter a brief description of the facility, including the mission statement.

Interconnectivity/Multi-Use of Facility: Describe any linking/interconnectivity with other T&E facilities. Include physical and/or data linkages (bandwidth, data rate, etc.). Describe any unique characteristics or multiple use of the resource (e.g., operating by rotating crew, availability of resource dependent on ..., equipment will be obsolete by ..., etc.)

Type Tests Supported: Enter specific types of tests accomplished by the Facility (e.g., electromagnetic compatibility, radar cross section, missile miss distance, air-to-air radar simulation, etc).

Summary of Technical Capabilities: Describe technical capabilities at your facility to include:

Instrumentation/Assets: Enter instrumentation and other assets (e.g., jammers, target generators, recording equipment, computer support equipment) associated with the resource.

Provide fact sheets, not to exceed two pages.

Keywords: Enter any keywords (spelled-out with acronyms) associated with functions and capabilities of the facility (e.g., electromagnetic interference/electromagnetic compatibility (EMI/EMC), anechoic chamber, radar cross section (RCS)).

3. Form, Additional Information

Additional Information Form. Enter facility name. Provide personnel numbers for FY93, FY94, and each year in the FY95 FYDP broken out according to officers, enlisted, civilians and contractors. Enter total area square footage of indoor space, test area square footage of indoor space used for T&E purposes, and list office space square footage separately. Tonnage of equipment is the weight of all equipment associated with this facility. Volume of equipment is the volume of all equipment associated with this facility. Annual maintenance cost is self explanatory. Moving costs are estimates for packing equipment at the losing site and reassembly, calibration, etc at the receiving site, not including transportation costs. Capital equipment investments are the current improvement and modernization funds as well as any programs funds earmarked for equipment purchase.

4. Form, Facility Condition

Facility/Capability: Enter the descriptive title for the facility/capability.

Age: Indicate the age of the facility/capability as of the date on the General Information Form.

Replacement Value: Enter the replacement value for the facility/capability. Indicate whether this includes the replacement cost for the equipment.

Maintenance and Repair Backlog: Enter the total dollar amount of the backlog for maintenance and repair items.

Date of Last Upgrade: Date of the last major upgrade to the facility.

Nature of Last Upgrade: Describe the purpose and capability increase from the last major upgrade. Indicate the date this upgrade became available for use.

Major Upgrades Programmed: Enter information on each of the major upgrades that are programmed. Indicate the total programmed amount and provide a summary description of the upgrade.

5. Form, Historical Workload

Use this form to report the workload performed at this facility each year from FY86-93.

Facility/Capability Title: Enter the descriptive title for the facility/capability. Avoid using acronyms and abbreviations unless the title defines the acronym. Example: Guided Weapons Evaluation Facility (GWEF).

T&E Functional Area: For each of these functional areas (Air Vehicles, Armament/Weapons, Electronic Combat, Other Test, and Other), enter direct labor hours, test hours, and/or missions for FY86 through FY93. For open air ranges involving flight testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity

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on page 28.

6. Form, Determination of Unconstrained Capacity

Annual Hours of Downtime, 1: If the facility were required to operate continuously for 24 hours a day, seven days a week, 52 weeks a year, determine the number of hours per day the facility can reasonably operate if it is not constrained by personnel strength? Consider your facilities, equipment, and instrumentation fixed at current levels.

1. Add up the total hours of downtime per year for maintenance, weather, darkness (daylight), holidays, etc. Enter in line 1.

Average Downtime Per Day, 2: Divide line 1 by 365 to get the average downtime per day. Fill in at line 2.

Average Hours Available Per Day, 3: Subtract line 2 from 24 hours to get the average number of hours per day the facility is available for test. Fill in at line 3.

Analyze your historic workload mix to determine the average number and type of tests that have been run simultaneously at your facility. Determine the maximum number of tests that can be run simultaneously if there is no limit to personnel authorizations. Enter the following data from your analysis

Test Types, 4: Enter in column 4 the name of the type of test.

Tests at One Time, 5: List the number of each type of test that can be conducted simultaneously in column 5.

Workload Per Test
Per Facility Hour, 6: List the workload (reported in units as follows: For open air range flight testing, report workload in flight hours and numbers of missions. For all other test facility categories, including open air range other than flight

testing, report workload in direct labor hours) represented by each hour the test is run. Do this at line 6.

From the historic workload analysis, determine the average workload per facility hour represented by the average or "typical" test. In the row titled "TYPICAL", in column 5, enter the number of these "typical" tests that can be run in addition to those already listed above. Enter the workload per "typical" test per facility hour in column 6. To estimate test hours from direct labor hours for the Historic Workload Form, divide the facility workload by this number (the number of direct labor hours per "typical" test per facility hour) and enter in the test hour block on the Historic Workload Form.

Workload Per Facility Hour, 7: Multiply column 5 by column 6. Enter in column 7. Total column 7.

Unconstrained Capacity Per Day, 8: Multiply the total from column 7 by line 3 to get the unconstrained capacity per average day. Enter in line 8.

Annual Unconstrained Capacity, 9: Multiply line 8 by 365 to get the unconstrained capacity per year for the facility. Enter on line 9.

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DET 4/TACCSF KIRTLAND AFB
FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Det 4, Theater Air Command and Control Facility (TACCSF) / Modeling and Simulation

AGE: Facility Age - 46 YRS/TACCSF Capability - 4 YRS

REPLACEMENT VALUE: $ 224M

MAINTENANCE AND REPAIR BACKLOG: $ 100 K

DATE OF LAST UPGRADE: FY93

NATURE OF LAST UPGRADE: Facility Upgrade: The facility has not had any upgrades since the inception of TACCSF in 1990. This is
due to lack of funding.

Capability Upgrade: Established a distributed simulation node of the TACCSF in the HQ USAF Directorate of Modeling, Analysis, and Simulation (XOM), Theater Battle Arena, located in the Pentagon. It was operational in Mar 94.

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: Joint Environment for Testing, Training, and Analysis
TOTAL PROGRAMMED AMOUNT: $1.388M
SUMMARY DESCRIPTION: Developing Distributed Simulation Linkage to 10 Joint Test Facilities. A data link test suite will be installed which will link simulate simulation facilities and live systems to interoperate by exchanging TADIL J messages.

2. UPGRADE TITLE: Joint Systems Training Exercises

DET 4/TACCSF KIRTLAND AFB

TOTAL PROGRAMMED AMOUNT: $1.215M

SUMMARY DESCRIPTION: Additional distributed simulation architecture which will allow TACCSF to interoperate with Air Force

Airborne warning and control system simulators, Army Patriot, and Navy Aegis Cruiser live systems.

DET 4/TACCSF KIRTLAND AFB

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Det 4, Theater Air Command and Control Simulation Facility (TACCSF) / Modeling and Simulati

T&E FUNCTIONAL AREA	HOURS	FISCAL YEAR 86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
EC	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
OTHER T&E	DIRECT LABOR	0	0	0	29,000	111,800	150,310	145,540	192,689
	TEST HOURS	0	0	0	0	180	80	250	490
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								

DET 4/TACCSF KIRTLAND AFB

FACILITY/CAPABILITY TITLE: Det 4, Theater Air Command and Control Simulation Facility (TACCSF) / Modeling and Simulation

ANNUAL HOURS OF DOWNTIME	1	2650
AVERAGE DOWNTIME PER DAY (LINE 1÷ 365)	2	7.25
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	16.75

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ 8
Theater Level Simulation	1	100	100	1675
			TOTAL Σ	ANNUAL UNCONSTRAINED CAPACITY 9
			100	611,375
TYPICAL	1	100	100	

DET 4/TACCSF KIRTLAND AFB

TECHNICAL INFORMATION

Facility/Capability Title: Det 4, TACCSF / Modeling and Simulation

Facility Description; Including mission statement: The Theater Air Command and Control Simulation Facility (TACCSF), located at Kirtland AFB, New Mexico, is the world's largest operator-in-the-loop, air defense simulation facility, supporting joint services and the Department of Defense. The mission is to provide simulation for theater air defense, battle management, command, control, computers, and intelligence (BMC4I), and weapons system testing and training.

Interconnectivity/Multi-Use of T&E Facility: The facility is interconnected to several service simulation centers and national facilities through T-1 links using Distributed Interactive Simulation (DIS) and Defense Simulation Internet (DSI) networks. The facility also uses Satellite Communication networks. The TACCSF is used for numerous joint exercises involving the services and national assets.

Type of Test Supported: Joint Service Training, Theater Ballistic Missile Defense exercises, Army Patriot Training, USAFWS Controller Training, system development tests such as the Airborne Laser, Boost Phase Interceptor developmental tests, live test rehearsals such as the Operations Concept Demonstrations, DIS development exercises, IFF testing, and system/concept demonstration facility for senior Department of Defense leadership.

Summary of Technical Capabilities: The TACCSF simulates air defense functions and offensive operations such as tracking, identification, weapons allocation and control, and kill assessment at all execution levels from a control and reporting center (CRC) down to individual fire units or airborne interceptors. High fidelity data link models use actual message formats and data rates/capabilities. The models include accurate representation of processing algorithms for detection, tracking, track correlation, task saturation, and target allocation, and engagement; with kill assessment to satisfy the operators need for engagement feedback. Scenarios can place the participants anywhere in the world.

Keywords: Distributed Interactive Simulation (DIS), Scenario, Real-Time, Operator-in the-Loop, Theater Level Simulation,

DET 4/TACCSF KIRTLAND AFB
GENERAL INFORMATION

Facility/Capability Title: Det 4, 505th CCEG, Theater Air Command and Control Simulation Facility (TACCSF

Origin Date: 20 May 94

DET 4/TACCSF KIRTLAND AFB

Service: USAF Organization/Activity: Theater Air Command and Control Simulation Facility (TACCSF)
Location: Kirtland AFB, NM
Complete form for FY93

T&E Functional Area: Other UIC = KVICF9K6

T&E Test Facility Category: Digital Models and Computer Simulations

	T&E	S&T	D&E	IE	T&D	OTHER	= 100
PERCENTAGE USE:							
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles							
Electronic Combat							
Armament/Weapons							
Other Test	60	10	20		10		

DET 4/TACCSF KIRTLAND AFB
ADDITIONAL INFORMATION

Facility/Capability Title: Det 4/TACCSF/Modeling and Simulation

PERSONNEL

	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer	11	11	16	16	16	16	16
Enlisted	5	5	6	6	6	6	6
Civilian	9	9	10	10	10	10	10
Contractor	78	85	85	85	85	85	85
Total	103	103	110	110	110	110	110

Total Square Footage: 40,000

Test Area Square Footage: 17,208

Office Space Square Footage: 22,792

Tonnage of Equipment: 88

Volume of Equipment: 24,804 cubic feet

Annual Maintenance Cost: $1,450,000

Estimated Moving Cost: $2.46 Million

CAPITAL EQUIPMENT INVESTMENT ($)

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
2,977,000	5,064,000	4,000,000	5,000,000	6,000,000	3,000,000	2,000,000

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T&E PERCENTAGES

SITE/ACTIVITY: OFFUTT AFB / 513 ETS

FACILITY	TOTAL % T&E	AV	A/W	EC	OTHER
BOMBER EC GROUND TEST FACILITY	30	Ø	Ø	30	

SIGNATURE DATE 8/12/94

SIGNATURE DATE 8/12/94

SIGNATURE DATE

ACC

T&E PERCENTAGES

SITE/ACTIVITY: NELLIS AFB USAF WEAPONS TRAINING CENTER

FACILITY	TOTAL % T&E	AV	A/W	EC	OTHER
57TH TEST GROUP					

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

ACC

T&E PERCENTAGES

SITE/ACTIVITY: TYNDALL AFB 475 WEG

FACILITY	TOTAL % T&E	AV	A/W	EC	OTHER
* WETSTONE CONTROL / GCI	17%	HSN	HSN 31		69%
RADAR TEST FACILITY	86%	86%	0 HSN	0 HSN	
* RANGE FACILITY & ANALYSIS	90%	10%	70%	10%	
* E-9 AIRBORNE TELEMETRY	90%	5%	80%	5%	
* [redacted] SUBSCALE AERIAL TARGETS	100%	0	100%	0	
* FULLSCALE AERIAL TARGETS	100%	0	100%	0	
* GULF RANGE DRONE CONTROL UPGRADE	100%	0	100%	0	

?

* TEST SUPPORT NOT TEST

SIGNATURE 8/12/94 DATE

SIGNATURE 8/12/94 DATE

SIGNATURE DATE

ACC

T&E PERCENTAGES

SITE/ACTIVITY: KIRTLAND AFB / DET 4

FACILITY	TOTAL % T&E	AV	A/W	EC	OTHER
DET 4 THEATER AIR COMMAND AND CONTROL SIMULATION FACILITY	60%	Ø	Ø	Ø	60%

SIGNATURE DATE 8/12/91

SIGNATURE DATE 8/12/91

SIGNATURE DATE

1 ---**Air Force Certified Changes and Additions to T&E JCSG AF Certified Data**
8/19/94 ----- For Official Use Only

BOOK 313	PAGES 22-27	REMOVED AND REPLACED- PE NUMBERS
	PAGE 28	R&R HISTORICAL WORKLOAD
	PAGE 34-35	R&R FACILITY WORKLOAD
	PAGE 29A	ADDED TO REPLACE 2.2.A WRITE-UP
	PAGE 33	R&R 3.1 OVER ARCHING MERIT
	PAGE 70	R&R additional information, personnel/equipment
	PAGE 64A,B,C, " "	ADD. Technical information & Unconstrained capacity USAF Weapons and Tactics Center
	PAGE 250A	ADDED FOR CHANGE TO 3.1.C.4
	PAGE 80A	ADD 2.1.A.1 DOCUMENTATION
	PAGE 156 A	ADD Full scale aerial targets historical workload
	PAGE 156B	ADD Sub scale aerial targets historical workload
	PAGE 80B	ADD, Document answer to 2.1.A.1
18 Aug. 1994		
BOOK 301	AFFTC PAGES 8,9	REPLACES OUTDATED VERSION
	AFFTC pages 8,9	REPLACES PAGES AFFTC 164,165
	AFFTC PAGE 11	REPLACES AFFTC PG 11
	AFFTC PG 54 (SEC 1)	REPLACES
	AFFTC SEC1 PG 57	REPLACES
	AFFTC SEC1 PG 61	REPLACES
	AFFTC SEC 1 PG63,64	REPLACES
	AFFTC SEC1 PG12,13,17, 55	REPLACES
	AFFTC SEC 1 PG 127	REPLACES DIRECTED ENERGY Q. UPDATE
	AFFTC SEC 1 PG 128, 128A, 129	UPDATE TO 3.4.B.1.C , REPLACES
	AFFTC SEC1 PG 131	NEW PG CTF FAC CONDITION
	AFFTC SEC 1 PG 135	REPLACES FAC COND OF MUNITIONS INTEG FAC
	AFFTC SEC 1 PG 138	REPLACES ARIA FAC CONDITION FORM
	AFFTC SEC 1 PG 139	REPLACES MAINT. TEST SPT FAC. COND.
	AFFTC SEC 1 PG 144,145	REPLACES RCC FAC COND
	AFFTC SEC 1 PG 147	REPLACES TEST MEASUREMENT FAC COND
	AFFTC SEC1 PG 153	SAR FAC COND- REPLACES
	AFFTC SEC 1 PG 151	REPLACES INSTR. PROP COMPLE FAC COND
	AFFTC SEC1 PG154	REPLACES EFTR FAC COND
	AFFTC SEC1 PG161,162,162A	NEW PAGES, AIRCRAFT CORROSION FAC COND, FUEL SYST. DOCK FAC COND, NDI FAC COND.
	AFFTC SEC1 165	REPLACE AFFTC UNCONSTRAINED CAPACITY
	AFFTC SEC2PG14	REPLACES TEMS GEN. INFO PAGE
	AFFTC SEC3 PG10	REPLACES PARACHUTE TEST COMPLEX ADD. INFO
	AFFTC SEC3 PG 5	REPLACES IPS 3.1.E.1.A, SPECIAL ACCESS ID
	AFFTC SEC3PG7	REPLACES CLARIFICATION ON INSTR.
	AFFTC SEC 3 PG 9	REPLACE, REVISED EQUIP. VALUE
	AFFTC SEC 3, PG 9	CLARIFICATION ON TECH DATA OF IPS
	AFFTC SEC 3, PG 13	REPLACE, CORRECTION OF EQUIP COST
	AFFTC SEC 3, PG8 NDI	REPLACE UNCONSTRAINED CAP -CORRECTIONS
	AFFTC SEC 3, NDI PG9	REPLACE, NEW EQUIP COST
	AFFTC SEC3 NDI, PG10	REPLACES HISTORICAL WORKLOAD
	AFFTC SEC3 NDI PG11	NEW ADD FAC COND.
	AFFTC	REPLACES CLARIFICATION

	SEC3TMDEPG2,3	
	AFFTC SEC3 PG 6	REPLACES SEC. 3.1.E.1
	SEC3 TMDE PG 8	CORRECTIONS TO GEN. INFO
	SEC3 TMDE PG 10	UPDATE TECH CAP. WRITE-UP
	SEC3 TMDE PG12	UPDATES DIRECT LABOR HOURS
	SEC3 TMDE PG14	REPLACES ADD. INFO, UPDATES EQUIP COST
	SEC 3 TMDE PG15	REPLACES FAC COND SHEET
	SEC4 MUN FAC, PG10	UPDATES FAC COND SHEET, EQUIP COST
	SEC4 TSP(SB)PG14	UPDATES UNCONSTRAINED CAP
	SEC4 TSP(SB) PG19,20	UPDATES ADDITIONAL INFO CHARTS
	SEC4 SAR (NB)PG11	REPLACES TECH INFO, CORRECTIONS
	SEC4 SAR (NB) PG7	REPLACES FAC COND. DATA
	SEC4 ARIA PG1	COVER PAGE REPLACE, ADD INFO
	SEC4 ARIA PG2	REPLACES 2.1.A.1-2.3.B.2 ADD INFO
	SEC 4 ARIA PG 9	REPLACES 8 CORRECTIONS TO WORKSHEET
	SEC4 ARIA PG 10	REPLACES , UPDATE TO REPLACEMENT COST
BOOK302	SEC5 GUNBUTTPG10	REPLACES, ADD INFO DATA CORRECTION
	SEC7 RMCCPG156	REPLACES 2.2 UPDATES WORKYEARS
	SEC7 RMCC PG158,158A,159	REPLACES, UPDATES
	SEC7 RMCC PG162,162A,162B	UPDATES SECT 3.1.D.1,3.1.D.2
	SEC7 RMCC PG164A,164B	UPDATES SECT 3.1.E.4
	SEC7 RMCC PGS170A,170B, 171	UPDATES ADDED FOR SEC 3.2.C.2 - 3.4
	SEC7 RMCC PG 174A, 174B	UPDATES TO SECTION 3.4.B.1.C REPLACES
	SEC 7 RMCC PG 176	REPLACES HISTORICAL WORKLOAD
	SEC 7 RMCC PG186	REPLACES GEN. INFO, UPDATES T&E %
	SEC 7 RMCC PG 187	REPLACES ADD INFO, NEW DATA
	SEC 7 RMCC PG 189A	ADDED TO UPDATE EQUIPMENT FAC COST
	SEC7 RMCC PG 190	FAC UPGRADES, NO CHANGE
	SEC7 EFTR PG94A	ADDS UPDATE TO LAST SENTENCE ON3.A.2
	SEC7 EFTR PG 96A,96B 96C	ADDS WRITE-UP ON DAGRAG
	SEC 7 EFTR PG102A,B	ADDED,REPLACES SECTION 3.1.3.4
	SEC 7 EFTR PG 112A	ADDED , REPLACES SECTION 3.1.H.8
	SEC 7 EFTR PG 114A	ADDED TO UPDATE 3.2.A.2
	SEC7 EFTR PG 118A	ADDED TO UPDATE 3.2.C.2
	SEC7 EFTR PG 119A	ADDED, NO TO ENERGY WEAPONS
	SEC7 EFTR PG 121A,B	ADDED UPDATES 3.4.B.1.C
BOOK 303	SEC8 CORR PG 16A	ADDED, FAC CONDITION OF CORROSION FAC
	SEC8 FUEL PG 51, 52, 53, 53A, 54,55,56,57,58,59	UPDATES, NEW DATA AND CLARIFICATION
	SEC8 M&M PG 100	REPLACED UPDATE
	SEC 8M&M PG 111A	ADDED, UPDATES SECTION 3.1.F.2

3 ---**Air Force Certified Changes and Additions to T&E JCSG AF Certified Data**
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	SEC8M&M PG 150,151,152,153,154,155, 156,157,180,166	REPLACED HIST WORKLOAD & UC WORKLOAD
	SEC 8M&M PG 163	ADD, 412 EMS MACHINE SHOP HISTORICAL WL
	SEC8M&M PG 188	REPLACE, FAC UPDATE, EQUIP COST
	SEC8 PHOTOPLANT PG31A	ADDED TO CHANGE ANSWER FOR 2.3.B
	SEC 8 PHOTO PG35,36	REPLACE, HISTORICAL WORKLOAD
	SEC 8 PHOTO PG 39-44	REPLACE UC CAPACITY WITH 1 SHEET, SHEET NUMBERED 39-44 TO MAINTAIN SEQUENCE.
	SEC 8 PHOTO PG45	FAC TECH INFO SHEET UPDATED
	SEC 8 PHOTO PG46	GENERAL INFO SHEET UPDATED WITH %
	SEC 8 RWYS/DRY LAKES PG 190-210	NEW SECTION ADDED UNDER MISSION SPT FAC RUNWAYS/DRY LAKES

Document Separator

USAFWTC NELLIS, AFB

Department of Defense

1995 Base Realignment and Closure T&E Joint Cross-Service Group Data Guidance

March 31, 1994

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T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

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T&E JOINT CROSS-SERVICE GROUP

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

The Military Departments will use the following information for data collection on each facility that has performed T&E and is still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons for any component (hardware or software), subsystem, system, or platform. Guidance is provided on conducting a cross-service analysis.

1.1 GUIDANCE

1.1.A Guidance for Identification of Test and Evaluation (T&E) Facilities / Capabilities

1.1.A.1 Scope

All DoD installations will be examined to identify facilities that have and are still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons.

All facilities (tenant and host on the installation) owned by DoD are within scope of this examination.

The Military Departments and Defense Agencies are responsible for submitting the data.

The scope of this examination will include T&E facilities that are funded from any funding source and appropriation (RDT&E, procurement, O&M, training, etc.).

1.1.A.2 T&E Facilities / Capabilities

The definition of a T&E facility/capability to be used for purposes of data collection will be a set of DoD-owned or controlled property (air/land/sea space) or any collection of equipment, platforms, ADPE or instrumentation that can conduct a T&E operation and provide a deliverable T&E product.

The T&E facility can support T&E of components through systems platforms or missions in

the following functional areas: air, land, sea, space, C4I, armaments/weapons, electronic combat, nuclear effects, chem/bio, propulsion, environmental effects, guidance, and materials.

The T&E facilities will be grouped under one of the following test facility categories: modeling and simulation, measurement, integration laboratory, hardware-in-the-loop, installed systems, or open air (See Appendix A for definitions). It will typically consist of all of the following components: data collection sensors and instrumentation, data reception and storage, data processing, and data display and reporting.

The scope will include T&E operations from all funding sources (RDT&E, procurement, O&M, training, etc.).

1.1.B Guidance for Military Department Data Collection

The Military Departments will use the T&E facility/capability definitions included within this data call package. In your descriptions of facility technical capabilities include programmed investments/upgrades in Military Department or Defense Agency 1995 Future Years Defense Plan (FY95 FYDP) in support of the President's Budget (PB95). When calculating capacity data, use the guidelines/definitions included in this package.

Data will be collected on all facilities/capabilities that are within the scope defined in section 1.1.A. Data will be collected using Appendix A, Data Forms and Instructions

1.1.C Guidance for Military Department Data Analysis

The Military Departments will use the 95 FYDP as the baseline to calculate costs and savings. Address closure/realignment opportunities at the functional T&E and facility levels. Retain essential technical capabilities for core competencies and technologies. Consider consolidation of subfunctions such as centralized maintenance of common platforms, instrumentation, data processing. Consider retention of difficult-to-replace essential geographic assets (e.g. airspace, ground/terrain, climates, seaports) without regard to "ownership". Recognize adaptability to future technologies. Do not consider environmental cleanup costs/difficulties for closure or downsizing a facility/capability.

1.2 ASSUMPTIONS

Cross-service analyses will use the following assumptions:

1.2.A T&E workload is not a direct function of force structure, but is related to the RDT&E budget and acquisition funding.

1.2.B The FYDP is considered certified data. Information from non-DoD activities will not be used as a basis for analyses.

1.2.C At least one test facility/capability will be required to address any technology in use or nearing maturation. Geographic assets (airspace, ground space, sea space, terrain, climate, physical security) must be adequate. Closure or realignments of laboratories, maintenance depots, and training activities could necessitate consolidation with T&E facilities/capabilities.

1.2.D Evaluation of developing technologies and systems will follow a process that involves a progression of test facilities/capabilities ranging from modeling and simulation, measurements, through hardware-in-the-loop, system integration laboratories, installed-systems, to open air/range testing.

1.2.E Potential for internetting facilities/capabilities can be considered in workload projections if investments to provide internetting capability are programmed.

1.2.F With regard to outsourcing, it will be assumed that work currently performed in-house will remain in-house and that work currently outsourced will remain outsourced.

1.2.G With regard to foreign military sales (FMS), it will be assumed that the FMS workload will continue at FY93 levels into the future (straight-lined).

1.3 FUNCTIONAL AREAS

Three functional areas of T&E facilities/capabilities were selected for specific emphasis during cross-service analyses following analysis of the T&E Reliance study areas. These three areas -- air vehicles, electronic combat, and armament/weapons -- show the greatest potential for cross-service consolidation opportunities; others are predominately or nearly Military Department unique.

Over-arching measures of merit have been developed that are applicable to many T&E facilities/capabilities across the three functional areas. These measures generally relate to the overall demographics of the facility/capability at an installation and are important to evaluating a facility/capability for: overall condition; potential to support current or future contingency, mobilization and future missions; additional workload; and overall Mission Essentiality. Additional data specific to the three functional areas will also be collected. For the purpose of this data collection, the three functional areas are defined as follows:

1.3.A 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 sub-systems (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.

1.3.B Electronic Combat (EC) Systems

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.

1.3.C Armaments / 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.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

Use the forms and accompanying instructions in appendix A to provide answers for this section.

2.1 WORKLOAD

Annual workload will be reported in units as follows: for open air ranges involving flight testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

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2.1.A Historical Workload

-2.1.A.1 What amount of workload have you performed each year from FY86-93?

The following is a break down by year of the projects accomplished by the Test Group documented or on file within the 57th Wing historian's office. This list is by no means complete due to the lack of permanent records, but provides an indication of the amount and diversity of projects conducted and supported through the 57th Test Group. Historical worksheet is attached.

57th Test Group Projects			
Year	Project Number	Title	Classification
1986	82A-199F	F-15 Operational Flight Program, BAM/CC 106) FOT&E	S
	82A-199F	F-15 Operational Flight Program, CAJ/CC 1065/ CC 1002) FOT&E	S
	83C-069F	HAMOTS Upgrade System IOT&E	U
	84A-035F	CBU-87/B Combined Effects Munition FOT&E	S
	84W-102F	A-10 Offensive/Defensive Tactics Against Helicopters TD&E	S
	85A-004F	AGM-65D Infrared Maverick FOT&E Phase II	S
	85A-022F	Low Level Laser Guided Bomb FOT&E	S
	85A-029F	F-16C Multi-national Staged Improvement Program FOT&E	S
	85G-061F	F-15E Camouflage Evaluation	U
	86B-013F	A-10 Sidewinder Control System QT&E/QOT&E	U
	86W-001F	Protection of High Value Airborne Assets TD&E	S
	86W-007F	A-10 AGM-65D Employment TD&E	S
	86W-010F	F-15 Night Adverse Weather A/A Employment TD&E	S
	86W-013F	AIM-9 Performance Against MiG-21 and MiG-23 Aircraft	S
1987	85B-032F	F-111D Avionics Modernization Program QOT&E	U
	86A-067F	F-15 Operational Flight Program, BAM/AFL, FOT&E	S
	86A-069F	F-111F Pave Tack OFP-07 FOT&E	U
	86W-001F	Protection of High Value Airborne Assets - Phase II	S
	Number Not Available	A-10 Operational Test and Evaluation	U
	Number Not Available	A-10 TD&E	S
	Number Not Available	F-15 TD&E	S

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2.1.A Historical Workload

-2.1.A.1 What amount of workload have you performed each year from FY86-93?

The following is a break down by year of the projects accomplished by the Test Group documented or on file within the 57th Wing historian's office. This list is by no means complete due to the lack of permanent records, but provides an indication of the amount and diversity of projects conducted and supported through the 57th Test Group. Historical worksheet is attached.

57th Test Group Projects			
Year	*Project Number*	*Title*	*Classification*
1986	82A-199F	F-15 Operational Flight Program, BAM/CC 106) FOT&E	S
	82A-199F	F-15 Operational Flight Program, CAJ/CC 1065/ CC 1002) FOT&E	S
	83C-069F	HAMOTS Upgrade System IOT&E	U
	84A-035F	CBU-87/B Combined Effects Munition FOT&E	S
	84W-102F	A-10 Offensive/Defensive Tactics Against Helicopters TD&E	S
	85A-004F	AGM-65D Infrared Maverick FOT&E Phase II	S
	85A-022F	Low Level Laser Guided Bomb FOT&E	S
	85A-029F	F-16C Multi-national Staged Improvement Program FOT&E	S
	85G-061F	F-15E Camouflage Evaluation	U
	86B-013F	A-10 Sidewinder Control System QT&E/QOT&E	U
	86W-001F	Protection of High Value Airborne Assets TD&E	S
	86W-007F	A-10 AGM-65D Employment TD&E	S
	86W-010F	F-15 Night Adverse Weather A/A Employment TD&E	S
	86W-013F	AIM-9 Performance Against MiG-21 and MiG-23 Aircraft	S
1987	85B-032F	F-111D Avionics Modernization Program QOT&E	U
	86A-067F	F-15 Operational Flight Program, BAM/AFL, FOT&E	S
	86A-069F	F-111F Pave Tack OFP-07 FOT&E	U
	86W-001F	Protection of High Value Airborne Assets - Phase II	S
	Number Not Available	A-10 Operational Test and Evaluation	U
	Number Not Available	A-10 TD&E	S
	Number Not Available	F-15 TD&E	S

	Number Not Available	F-15 Three-Ship TD&E	S
	Number Not Available	F-16 Advanced Fighter Technology	U
	Number Not Available	Have Cedar	S
	Number Not Available	Adversary TD&E	S
1988	84A-028F	CBU-89/B Gator FOT&E	S
	84W-161F	F-16 Under the Weather Conventional Attack TD&E	S
	85A-029F	F-16C Multi-national Staged Improvement Program FOT&E, Annex B	S
	85B-031F	F-111F Avionics Modernization Program QOT&E	U
	86A-057F	F-16A/B Operational Capabilities Upgrade (OCU) FOT&E	S
	86A-067F	F-15 Operational Flight Program, BAN/CAL, FOT&E	S
	86A-067F	F-15 Gun Director Sight Evaluation	S
	86A-068F	F-16 Operational Flight Program, Block 15S2, FOT&E	U
	87A-064F	Infrared GBU-15 FOT&E Phase II	U
	87A-078F	GBU-24A/B LLLGB FOT&E	S
	87W-017F	F-15 APG-63 Special Modes TD&E	S
	87W-501F	F-15 All Aspect Adversary Countertactics TD&E	S
	88B-016F	F-15E Advanced Radar QOT&E	U
	88W-558F	Title Not Available	U
	Number Not Available	F-15 AIM-9L/M Threshold Delete FOT&E	S
1989	86A-067F	F-15 Operational Flight Program, BBA, FOT&E	S
		57th Test Group Projects	
Year	*Project Number*	*Title*	*Classification*
1989	86A-068F	F-16 Operational Flight Program FOT&E	S
	86A-069F	F-111 Operational Flight Program, F-03, FOT&E	U
	87A-033F	FMU-139A/B Electronic Bomb Fuse FOT&E	U
	87G-048F	Have Sabre	S
	87W-501F	F-15 All Aspect Adversary Countertactics TD&E	S
	88B-016F	F-15E Advanced Radar QOT&E	U
	88G-030F	AMRAAM LOUE	S
	88W-515F	AMRAAM TD&E	S
	88W-544F	F-16 All Aspect Adversary Countertactics TD&E	S
	88W-550F	F-16 Air-to-Surface Versus All-Aspect Adversary TD&E	S
	88W-554F	A-10 Air-to-Surface Versus All-Aspect Adversary TD&E	S
	89A-167F	F-16D Anticipatory Anti-G System Flight Demonstration	U
	89A-184FT	Have Bunker	U
	89W-001F	F-15 Emcon TD&E	S
	89W-007F	AGM-65D Target Signature Study TD&E	S

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	Number Not Available	F-15 Three-Ship TD&E	S
	Number Not Available	F-16 Advanced Fighter Technology	U
	Number Not Available	Have Cedar	S
	Number Not Available	Adversary TD&E	S
1988	84A-028F	CBU-89/B Gator FOT&E	S
	84W-161F	F-16 Under the Weather Conventional Attack TD&E	S
	85A-029F	F-16C Multi-national Staged Improvement Program FOT&E, Annex B	S
	85B-031F	F-111F Avionics Modernization Program QOT&E	U
	86A-057F	F-16A/B Operational Capabilities Upgrade (OCU) FOT&E	S
	86A-067F	F-15 Operational Flight Program, BAN/CAL, FOT&E	S
	86A-067F	F-15 Gun Director Sight Evaluation	S
	86A-068F	F-16 Operational Flight Program, Block 15S2, FOT&E	U
	87A-064F	Infrared GBU-15 FOT&E Phase II	U
	87A-078F	GBU-24A/B LLLGB FOT&E	S
	87W-017F	F-15 APG-63 Special Modes TD&E	S
	87W-501F	F-15 All Aspect Adversary Countertactics TD&E	S
	88B-016F	F-15E Advanced Radar QOT&E	U
	88W-558F	Title Not Available	U
	Number Not Available	F-15 AIM-9L/M Threshold Delete FOT&E	S
1989	86A-067F	F-15 Operational Flight Program, BBA, FOT&E	S

57th Test Group Projects

Year	*Project Number*	*Title*	*Classification*
1989	86A-068F	F-16 Operational Flight Program FOT&E	S
	86A-069F	F-111 Operational Flight Program, F-03, FOT&E	U
	87A-033F	FMU-139A/B Electronic Bomb Fuse FOT&E	U
	87G-048F	Have Sabre	S
	87W-501F	F-15 All Aspect Adversary Countertactics TD&E	S
	88B-016F	F-15E Advanced Radar QOT&E	U
	88G-030F	AMRAAM LOUE	S
	88W-515F	AMRAAM TD&E	S
	88W-544F	F-16 All Aspect Adversary Countertactics TD&E	S
	88W-550F	F-16 Air-to-Surface Versus All-Aspect Adversary TD&E	S
	88W-554F	A-10 Air-to-Surface Versus All-Aspect Adversary TD&E	S
	89A-167F	F-16D Anticipatory Anti-G System Flight Demonstration	U
	89A-184FT	Have Bunker	U
	89W-001F	F-15 Emcon TD&E	S
	89W-007F	AGM-65D Target Signature Study TD&E	S

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1990	86A-067F	F-15 Operational Flight Proogram, CC 1006, FOT&E	S
	86A-068F	F-16 Operational Flight Program, Z1A, FOT&E	U
	86A-069F	F-111D Operational Flight Program, D-03, FOT&E	U
	86A-069F	F-111F Operaional Flight Program, F-03A, FOT&E	U
	88C-089F	F-16 Air Defense Fighter IOT&E	S
	89W-007F	AGM-65D Target Signature Study TD&E	S
	90-023F	A-10 Low Altitude Safety Targeting Enhancement Operational Flight Program FOT&E	U
	90-025F	F-16 Operational Quick Look, Block 30K, Maverick Short Pulse Demonstration	U
	90-038F	F-15 Gun Boresight FOT&E	U
	91W-034F	All Aspect Adversary Countertactics V TD&E	S
	Number Not Available	A-10 Low Altitude Safety Targeting Enhancement QOT&E	U
	Number Not Available	A-10 Targeted Against Helicopters TD&E	S
	Number Not Available	TGM-65D/G Quick Look	S
	Number Not Available	F-15 Day, Mixed Loads TD&E	S
	Number Not Available	AIM-9R Quick Look	S
	Number Not Available	All Aspect Adversary Countertactics IV TD&E	S
1991	86A-068F	F-16 Operational Flight Program, Block 30J, FOT&E	U
	86A-069F	F-111D Operational Flight Program, D-03B, FOT&E	U
	86A-069F	F-111E Operational Flight Program, E-01, FOT&E	U
	87-067F	F/EF-111 Digital Flight Control System IOT&E Phase I	U
	89A-208FT	F-16 Block 40 FOT&E	S
	89W-513F	F-16 All Aspect Adversary Countertactics III TD&E	S
	90-061F	F-16 Block 40 Ring Laser GyroRetrofit Special Project	U
	90-065FR	F-16C/D Block 40 8mm Video Recorder Special Project	U
	Number Not Available	Low Altitude Safety Targeting Enhancement Operational Flight Program Version 3.2 FOT&E	U

57th Test Group Projects			
Year	*Project Number*	*Title*	*Classification*
1991	Number Not Available	Low Altitude Safety Targeting Enhancement Operaional Flight Program Version 3.3 FOT&E	U

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1990	86A-067F	F-15 Operational Flight Proogram, CC 1006, FOT&E	S
	86A-068F	F-16 Operational Flight Program, Z1A, FOT&E	U
	86A-069F	F-111D Operational Flight Program, D-03, FOT&E	U
	86A-069F	F-111F Operaional Flight Program, F-03A, FOT&E	U
	88C-089F	F-16 Air Defense Fighter IOT&E	S
	89W-007F	AGM-65D Target Signature Study TD&E	S
	90-023F	A-10 Low Altitude Safety Targeting Enhancement Operational Flight Program FOT&E	U
	90-025F	F-16 Operational Quick Look, Block 30K, Maverick Short Pulse Demonstration	U
	90-038F	F-15 Gun Boresight FOT&E	U
	91W-034F	All Aspect Adversary Countertactics V TD&E	S
	Number Not Available	A-10 Low Altitude Safety Targeting Enhancement QOT&E	U
	Number Not Available	A-10 Targeted Against Helicopters TD&E	S
	Number Not Available	TGM-65D/G Quick Look	S
	Number Not Available	F-15 Day, Mixed Loads TD&E	S
	Number Not Available	AIM-9R Quick Look	S
	Number Not Available	All Aspect Adversary Countertactics IV TD&E	S
1991	86A-068F	F-16 Operational Flight Program, Block 30J, FOT&E	U
	86A-069F	F-111D Operational Flight Program, D-03B, FOT&E	U
	86A-069F	F-111E Operational Flight Program, E-01, FOT&E	U
	87-067F	F/EF-111 Digital Flight Control System IOT&E Phase I	U
	89A-208FT	F-16 Block 40 FOT&E	S
	89W-513F	F-16 All Aspect Adversary Countertactics III TD&E	S
	90-061F	F-16 Block 40 Ring Laser GyroRetrofit Special Project	U
	90-065FR	F-16C/D Block 40 8mm Video Recorder Special Project	U
	Number Not Available	Low Altitude Safety Targeting Enhancement Operational Flight Program Version 3.2 FOT&E	U

57th Test Group Projects			
Year	*Project Number*	*Title*	*Classification*
1991	Number Not Available	Low Altitude Safety Targeting Enhancement Operaional Flight Program Version 3.3 FOT&E	U

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	Number Not Available	YA-7F Operational Quick Look	U
	Number Not Available	A/OA-10 Technology Demonstrator	U
	Number Not Available	BOL Chaff Support Test	S
	Number Not Available	F-15E FOT&E	S
	Number Not Available	F-15E ECP 2170/DAE OFP FOT&E	S
	Number Not Available	F-16 All Aspect Adversary Countertactics IV TD&E	S
	Number Not Available	Desert Storm LANTIRN Cross-Talk Quick Look	U
1992	86A-067F	F-15 Operational Flight Pogram, BBB/CC 1080	S
	86A-068F	F-16 Operational Flight Program, SCU-1, FOT&E	U
	86A-068F	F-16 Operational Flight Program, Block 40 T-3, FOT&E	U
	87-067F	F/EF-111 Digital Flight Control System IOT&E Phase II	S
	88A-044F	Aircraft Compatibility Unit Acceptance Test	U
	89-119FT	F-15E FOT&E, Assessment of F-15E Capabilities to Deliver AGM-65 Missiles	U
	90-023F	A-10 Low Altitude Safety Targeting Enhancement TD&E	S
	90-023F	A-10 Operational Flight Program, Version 4.0, FOT&E	U
	90-024F	A-10 Low Altitude Safety Targeting Enhancement FOT&E	U
	91-031F	F-16 All Aspect Adversary Countertactics V TD&E	S
	91W-036F	F-15 All Aspect Adversary Countertactics VI TD&E	S
	92-013F	F-15 Night Mixed Loads TD&E	S
	92-023F	F-16 AGM-65G TD&E	S
	92-025RF	F-16 and A/OA-10 Night Vision Enhancement QOT&E	S
	92-050FT	A-10 Low Altitude Safety Targeting Enhancement Operational Flight Program 4.0 FOT&E	U
	92-052FT	F-15E DAE+ Operational Flight Program FOT&E	S
	93-006F	F-16 Special Project, Block 40 Night Compatible Lighting Assessment	U
	93-017F	B-1 Night Vision Enhancement Special Project	U
	94-512F	F-15 AIM-120A Quick Look	S
1993	88-044F	MDS Software Version 3.2/4.0 Verification Testing	U
	88-044F	Global Positioning System Demonstration	U
	88-518F	F-15E Employment TD&E	U
	88-551F	F-111 Air-to-Surface Versus All-Aspect Adversary TD&E	S
	89-119FT	F-15E Dual Role Fighter FOT&E	S
	89-514F	F-16 LANTIRN/GPS TD&E	S
	89-526F	Title Not Available	U

USAFWTC NELLIS, AFB

	Number Not Available	YA-7F Operational Quick Look	U
	Number Not Available	A/OA-10 Technology Demonstrator	U
	Number Not Available	BOL Chaff Support Test	S
	Number Not Available	F-15E FOT&E	S
	Number Not Available	F-15E ECP 2170/DAE OFP FOT&E	S
	Number Not Available	F-16 All Aspect Adversary Countertactics IV TD&E	S
	Number Not Available	Desert Storm LANTIRN Cross-Talk Quick Look	U
1992	86A-067F	F-15 Operational Flight Pogram, BBB/CC 1080	S
	86A-068F	F-16 Operational Flight Program, SCU-1, FOT&E	U
	86A-068F	F-16 Operational Flight Program, Block 40 T-3, FOT&E	U
	87-067F	F/EF-111 Digital Flight Control System IOT&E Phase II	S
	88A-044F	Aircraft Compatibility Unit Acceptance Test	U
	89-119FT	F-15E FOT&E, Assessment of F-15E Capabilities to Deliver AGM-65 Missiles	U
	90-023F	A-10 Low Altitude Safety Targeting Enhancement TD&E	S
	90-023F	A-10 Operational Flight Program, Version 4.0, FOT&E	U
	90-024F	A-10 Low Altitude Safety Targeting Enhancement FOT&E	U
	91-031F	F-16 All Aspect Adversary Countertactics V TD&E	S
	91W-036F	F-15 All Aspect Adversary Countertactics VI TD&E	S
	92-013F	F-15 Night Mixed Loads TD&E	S
	92-023F	F-16 AGM-65G TD&E	S
	92-025RF	F-16 and A/OA-10 Night Vision Enhancement QOT&E	S
	92-050FT	A-10 Low Altitude Safety Targeting Enhancement Operational Flight Program 4.0 FOT&E	U
	92-052FT	F-15E DAE+ Operational Flight Program FOT&E	S
	93-006F	F-16 Special Project, Block 40 Night Compatible Lighting Assessment	U
	93-017F	B-1 Night Vision Enhancement Special Project	U
	94-512F	F-15 AIM-120A Quick Look	S
1993	88-044F	MDS Software Version 3.2/4.0 Verification Testing	U
	88-044F	Global Positioning System Demonstration	U
	88-518F	F-15E Employment TD&E	U
	88-551F	F-111 Air-to-Surface Versus All-Aspect Adversary TD&E	S
	89-119FT	F-15E Dual Role Fighter FOT&E	S
	89-514F	F-16 LANTIRN/GPS TD&E	S
	89-526F	Title Not Available	U

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USAFWTC NELLIS, AFB

	90-062TF	Improved Data Link IOT&E Support	U
	91-004F	Unmanned Threat Emitter QOT&E	U
	91W-008F	F-15 Versus Advanced Electronic Countermeasures TD&E	S
	91-027FT	F-16 Block 50A FOT&E Phase I	U
57th Test Group Projects			
Year	*Project Number*	*Title*	*Classification*
1993	91-031F	F-16 All Aspect Adversary Countertactics V TD&E	S
	91-508F	F-15 Versus Advanced Electronic Countermeasures TD&E	S
	92-020FT	AIM-9-8/-9 JIOT&E	S
	92-023F	F-16 AGM-65G TD&E	S
	92-025RF	F-16 and A/OA-10 Night Vision Enhancement Special Project	S
	92-050FT	A-10 Operational Flight Program FOT&E	U
	92-051FT	F-15 Operational Flight Program, BBB, FOT&E	S
	92-051FT	F-15 Operational Flight Program, CAM, FOT&E	S
	92-051FT	F-15 Operational Flight Program, CAN, FOT&E	S
	92-051FT	F-15 Operational Flight Program, DAF, FOT&E	S
	92-052FT	F-15E Operational Flight Program, OFP 2367, FOT&E	U
	92-053FT	F-16 Operational Flight Program, Blok 40 T-3, FOT&E	U
	92-053FT	F-16 Operational Flight Program, Blok 40 T-4, FOT&E	U
	92-054FT	F-111 Operational Flight Program FOT&E	U
	92-055FT	F-117 Operational Flight Program, OFP 55, FOT&E	S
	92-058F	National Training Center/ Air Warrior Acceptance Test	U
	93-001R	RF-4C/ALE Programmable Countermeasures Modification Special Project	U
	93-002F	F-117 Employment TD&E	S
	93-008T	Theater Missile Defense Operational Concept Demonstration	U
	93-014F	F-15 Fighter Data Lnk Operational Special Project	U
	93-019FT	Technical Demontration of the AL-Sponsored Helmet Mounted Display (VISTA SABRE II)	U
	93-029F	Mission Data Processing System, Block 55, FOT&E	S
	93-038F	APR-47 Flight Test Support for Non-Phase Matched Antennas	U
	93-041F	Locating Enemy Artillary with Infrared Assets Special Project	S
	93-042F	IR Band IV Countermeasures Joint Test Support	S
	93-050FT	APR-47 OFP 9000 QT&E	U
	93-057F	GOLDPAN Support	S
	Number Not Available	F-16 Low Altitude Laser-Guided Bomb Alternate Delivery Quick Look	U

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	90-062TF	Improved Data Link IOT&E Support	U
	91-004F	Unmanned Threat Emitter QOT&E	U
	91W-008F	F-15 Versus Advanced Electronic Countermeasures TD&E	S
	91-027FT	F-16 Block 50A FOT&E Phase I	U
		57th Test Group Projects	
Year	*Project Number*	*Title*	*Classification*
1993	91-031F	F-16 All Aspect Adversary Countertactics V TD&E	S
	91-508F	F-15 Versus Advanced Electronic Countermeasures TD&E	S
	92-020FT	AIM-9-8/-9 JIOT&E	S
	92-023F	F-16 AGM-65G TD&E	S
	92-025RF	F-16 and A/OA-10 Night Vision Enhancement Special Project	S
	92-050FT	A-10 Operational Flight Program FOT&E	U
	92-051FT	F-15 Operational Flight Program, BBB, FOT&E	S
	92-051FT	F-15 Operational Flight Program, CAM, FOT&E	S
	92-051FT	F-15 Operational Flight Program, CAN, FOT&E	S
	92-051FT	F-15 Operational Flight Program, DAF, FOT&E	S
	92-052FT	F-15E Operational Flight Program, OFP 2367, FOT&E	U
	92-053FT	F-16 Operational Flight Program, Blok 40 T-3, FOT&E	U
	92-053FT	F-16 Operational Flight Program, Blok 40 T-4, FOT&E	U
	92-054FT	F-111 Operational Flight Program FOT&E	U
	92-055FT	F-117 Operational Flight Program, OFP 55, FOT&E	S
	92-058F	National Training Center/ Air Warrior Acceptance Test	U
	93-001R	RF-4C/ALE Programmable Countermeasures Modification Special Project	U
	93-002F	F-117 Employment TD&E	S
	93-008T	Theater Missile Defense Operational Concept Demonstration	U
	93-014F	F-15 Fighter Data Lnk Operational Special Project	U
	93-019FT	Technical Demontration of the AL-Sponsored Helmet Mounted Display (VISTA SABRE II)	U
	93-029F	Mission Data Processing System, Block 55, FOT&E	S
	93-038F	APR-47 Flight Test Support for Non-Phase Matched Antennas	U
	93-041F	Locating Enemy Artillary with Infrared Assets Special Project	S
	93-042F	IR Band IV Countermeasures Joint Test Support	S
	93-050FT	APR-47 OFP 9000 QT&E	U
	93-057F	GOLDPAN Support	S
	Number Not Available	F-16 Low Altitude Laser-Guided Bomb Alternate Delivery Quick Look	U

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	Number Not Available	F-16 Night (Targeting Pod) Killer Scout TD&E	U

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	Number Not Available	F-16 Night (Targeting Pod) Killer Scout TD&E	U

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USAFWTC NELLIS, AFB

HISTORICAL WORKLOAD

Facility/Capability Title: 57th Test Group

T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	832,000+	832,000+	832,000+	832,000+	832,000+	832,000+	416,000+	416,000+
	TEST HOURS	4,230	4,230	4,230	4,230	5,519	5,519	5,276	5,276
	MISSIONS	3,000	3,000	3,000	3,000	3,914	3,914	3,742	3,742
EC	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS	0	0	0	0	0	0	0	0
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS	0	0	0	0	0	0	0	0
OTHER T&E	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS	0	0	0	0	0	0	0	0
OTHER	DIRECT	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS	0	0	0	0	0	0	0	0

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USAFWTC NELLIS, AFB

HISTORICAL WORKLOAD

Facility/Capability Title: 57th Test Group

T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	832,000+	832,000+	832,000+	832,000+	832,000+	832,000+	416,000+	416,000+
	TEST HOURS	4,230	4,230	4,230	4,230	5,519	5,519	5,276	5,276
	MISSIONS	3,000	3,000	3,000	3,000	3,914	3,914	3,742	3,742
EC	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS	0	0	0	0	0	0	0	0
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS	0	0	0	0	0	0	0	0
OTHER T&E	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS	0	0	0	0	0	0	0	0
OTHER	DIRECT	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS	0	0	0	0	0	0	0	0

2.1.B Forecasted Workload

-2.1.B.1 Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP. The Military Departments will provide total funding amounts appropriated for all PEs identified in each functional area shown above.

The following PE codes are all in the air vehicle functional area and generated testing during the years noted:

FY 92	FY 93	FY 94
28015F	28015F	28015F
35887F	35887F	35887F
27141F	27141F	27141F
27900	27900	63231F
63231F	63231F	27411
	27411	65712F
	65712F	21001F
	21001F	

-2.1.B.2 What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

All testing conducted at this facility was conducted under the category of air vehicles. This unit historically executes or supports between 40 and 50 evaluations annually ranging from OT&Es, TD&Es, to special projects including foreign military exploitation. 200 personnel were assigned to Test Group during FY 92 and FY 93. All personnel were employed at greater than 95 percent level. This equates to 200 man work-years.

2.2 UNCONSTRAINED CAPACITY

-2.2.A Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited,

INSTALLATION WORKSHEET
Test & Evaluation
Nellis Air Force Base, Nevada

PURPOSE: **To document the answer to question: (-2.2.A)**

Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness(daylight), holidays, etc.). Provide your response by filling out the Determination of Unconstrained Capacity Form in accordance with instructions in Appendix A.

SOURCE: BRAC 95 Data Call, various questions.

METHOD: See below.

CONCLUSION: In accordance with the attached sheet, a normal work schedule allows for 14 work hours per day. With unlimited personnel and consumable supplies, this window could be opened up to a 24 hour day. With perfect scheduling, this window could be fully utilized by ensuring day VMC missions are conducted during the appropriate hours. In accordance with the answer to question 3.1.H.9, the maximum number of days available per year is 239. With unlimited personnel, weekends could be used and the work days per year could increase to 343. Accounting for the three days per year lost to weather (3.1.H.7), there are 340 usable work days (8,160 work-hours). It is fair to assume that the maximum unconstrained capacity of the facility would equate to continuous use of the facility with the largest practical scenarios. Interviews with former Red Flag, Test Group, and Weapons School commanders reveal that scenarios involving more than 60 aircraft on the range simultaneously (one hour range period) become counterproductive with respect to accomplishing valid training or testing. Scenarios involving more aircraft than that focus excessive effort on getting into/out of the range space and avoiding mid-air collisions while on the range. Training and testing mission objectives then become muddled with air traffic control objectives. So, with unlimited resources, the amount of testing that could be accomplished in the 8,160 work-hours available becomes 489,600 sorties per year with a 24 hour operation, or 285,600 sorties per year with the existing 14 hour operation.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

_____ **Date** **9 August 1994**
Signature
ROBERT L. TONE, GM-13, 57 TG/TGO, 682-7580
Typed Name, Rank, Office Symbol, DSN Number

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

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but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.).

See insert page 29A

In accordance with the attached sheet, a normal work schedule allows for 14 work hours per day. With unlimited personnel and consumable supplies, this window could be opened up to a 24 hour day. With smart scheduling this window could be fully utilized ensuring day visual meteorological condition missions are conducted during the appropriate hours. In accordance with the answer to question 3.1.H.9, the maximum number of days available per year are 239. With unlimited personnel, we could feasibly work weekends. This brings the number of work days up to 343. Accounting for the three days a year we lose for weather (3.1.H.7) we end up with 340 usable work days. This equates to 8,160 work-hours. Based on the variable types of missions, anywhere from 36 to unlimited amounts of aircraft can be on the ranges at any one time. (3.3.A.10) So, with unlimited resources an unlimited amount of testing could be accomplished in the 8,160 work-hours available. In reality, with the advent of a JACTS MDS and smart DoD resource allocation, USAFWTC Range Complex could accomplish all of the Air Force's test requirements with no degradation of results' quality.

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

Yes. There are contractor restrictions due to the current contract. For example, LORAL Aerospace is limited to a 12 hour duty day in the area of electronic warfare (EW) threat emitters. The bombing ranges are available 24 hours a day, but unless the range user is willing to pay overtime hours, EW is limited to 10 hours a day with 2 hours scheduled for warm-up and shut-down procedures. This puts a limit on the hours available for a test that requires EW support. RFMDS is limited to 16 hour day with overtime available if the range user needs it and can pay. These limits are a result of negotiated contracts between LORAL Aerospace and the government. TOSS is limited to daylight hours only. This is a limit from th contract and the type camera used. Other than that, there are no major limits imposed on this range.

USAFWTC NELLIS, AFB

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: USAFWTC Range Complex

ANNUAL HOURS OF DOWNTIME	1. 3650
AVERAGE DOWNTIME PER DAY (LINE 1÷ 365)	2. 10
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3. 14

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ)
Flight Profile				UNLIMITED
Weapons Effects				
Air-to-Air				
System Improvements				
Camoflauge Evaluation				
Electronic Combat				

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.

Yes.

-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.

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

Yes.

SECTION 3: MEASURES OF MERIT

This section relates the measures of merit and the required data to the four criteria that have been established for Military Value. The four military value (MV) criteria are:

CRITERION 1: The current and future mission requirements and the impact on operational readiness of the Department of Defense's total force.

CRITERION 2: The availability and condition of land, facilities and associated airspace at both the existing and potential receiving locations.

CRITERION 3: The ability to accommodate contingency, mobilization, and future total force requirements at both the existing and potential receiving locations.

CRITERION 4: The cost and manpower implications.

3.1 OVER-ARCHING MEASURES OF MERIT

The over-arching measures of merit are listed with accompanying questions (or data requirements) intended to elicit standard information upon which the cross-service analyses can be based, and on which the Joint Cross-Service Groups can base their reviews of the Military Department analyses. Additional specific measures of merit are shown under individual functional areas. The numbers in parentheses () before each measure of merit indicate the BRAC selection criteria for military value.

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 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 and external to the site.

Zero percent. USAFWTC Range Complex does not interconnect with any other facility. It does have the capability to downlink RFMDS data real time from up range down to various facilities here at Nellis AFB.

-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. Based on answer to 3.1.A.1.

3.1.B Facility Condition (MV II) - Measure of merit: *Current and planned status of the T&E facilities for supporting assigned test missions.*

3.1 OVER-ARCHING MEASURES OF MERIT

The over-arching measures of merit are listed with accompanying questions (or data requirements) intended to elicit standard information upon which the cross-service analyses can be based, and on which the Joint Cross-Service Groups can base their reviews of the Military Department analyses. Additional specific measures of merit are shown under individual functional areas. The numbers in parentheses () before each measure of merit indicate the BRAC selection criteria for military value.

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 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 and external to the site.

Zero percent. USAFWTC Range Complex does not interconnect with any other facility. It does have the capability to downlink RFMDS data real time from up range down to various facilities here at Nellis AFB.

-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. Based on answer to 3.1.A.1.

3.1.B Facility Condition (MV II) - Measure of merit: *Current and planned status of the T&E facilities for supporting assigned test missions.*

USAFWTC NELLIS, AFB

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: USAFWTC Range Complex

AGE: 20+ years. **REPLACEMENT VALUE:** ~~Beyond Monetary Value.~~

MAINTENANCE AND REPAIR BACKLOG: Unknown.

DATE OF LAST UPGRADE: Approximately 1985.

NATURE OF LAST UPGRADE: Red Flag Measurment and Debriefing System.

MAJOR UPGRADES PROGRAMMED

1. **UPGRADE TITLE:** Joint Air Combat Training System.

   TOTAL PROGRAMMED AMOUNT: TBD.

   SUMMARY DESCRIPTION: Replacement for Red Flag Measurement and Debriefing System; increases track capability and provides secure data encryption.

USAFWTC RANGE COMPLEX CONSISTS OF 3,500,800 ACRES OF RESTRICTED LAND AND 1,200 SQUARE MILES OF RESTRICTED AIRSPACE AND MILITARY OPERATING AREA COMBINED. TO JUST PURCHASE REPLACEMENT LAND IN THE LOCAL AREA (VICINITY OF THE RANGE COMPLEX) WOULD COST APPROXIMATELY $1.05 BILLION (BASED ON ACREAGE TIMES $300 PER ACRE). $300 PER ACRE IS THE LOWEST ASKING PRICE FOR OPEN DESERT LAND IN THE

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VICINITY OF THE RANGE. WITH THE AMOUNT OF EQUIPMENT (THREAT EMMITTERS, TARGETS, MACHINE SHOPS, RFMDS, ETC.) USED ON THE RANGE, THE PRICE TAG TO REPLACE IT WOULD BE QUITE HIGH. THE THREAT EMITTERS ARE VALUED AT OVER $40 MILLION ALONE. SINCE EMITTERS ARE NO LONGER MADE, THESE WOULD HAVE TO BE MOVED. OTHER FACILITIES INCLUDE THE TONOPAH TEST RANGE AIRFIELD, INDIAN SPRINGS AIR FORCE AUXILIARY FIELD, THREE MAJOR LORAL OPERATIONS AND MAINTENANCE COMPOUNDS, THE RED FLAG MEASUREMENT AND DEBRIEFING SYSTEM AND ASSOCIATED (100+) COLLECTION SITES, RADIO COMMUNICATION RELAY, AND TEST MEASUREMENT EQUIPMENT. IN MY ESTIMATION, TO REPLACE ALL OF THE FACILITIES AND LAND WOULD COST ALMOST THE EQUIVALENT OF THE DOD ANNUAL BUDGET (250+ BILLION).

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USAFWTC NELLIS, AFB

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: USAFWTC Range Complex

AGE: 20+ years. **REPLACEMENT VALUE:** ~~Beyond Monetary Value.~~

MAINTENANCE AND REPAIR BACKLOG: Unknown.

DATE OF LAST UPGRADE: Approximately 1985.

NATURE OF LAST UPGRADE: Red Flag Measurment and Debriefing System.

MAJOR UPGRADES PROGRAMMED

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VICINITY OF THE RANGE. WITH THE AMOUNT OF EQUIPMENT (THREAT EMMITTERS, TARGETS, MACHINE SHOPS, RFMDS, ETC.) USED ON THE RANGE, THE PRICE TAG TO REPLACE IT WOULD BE QUITE HIGH. THE THREAT EMITTERS ARE VALUED AT OVER $40 MILLION ALONE. SINCE EMITTERS ARE NO LONGER MADE, THESE WOULD HAVE TO BE MOVED. OTHER FACILITIES INCLUDE THE TONOPAH TEST RANGE AIRFIELD, INDIAN SPRINGS AIR FORCE AUXILIARY FIELD, THREE MAJOR LORAL OPERATIONS AND MAINTENANCE COMPOUNDS, THE RED FLAG MEASUREMENT AND DEBRIEFING SYSTEM AND ASSOCIATED (100+) COLLECTION SITES, RADIO COMMUNICATION RELAY, AND TEST MEASUREMENT EQUIPMENT. IN MY ESTIMATION, TO REPLACE ALL OF THE FACILITIES AND LAND WOULD COST ALMOST THE EQUIVALENT OF THE DOD ANNUAL BUDGET (250+ BILLION).

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.

Yes. Desert tortoise (endangered species), 60 series ranges are joint managed between USAF and US Fish and Wildlife Service, much of the 60 series ranges' ground space is operated by the USFWS under the Desert National Wildlife Refuge program. Exact restrictions are in stated MOU.

- 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.

The exact percentage of workload increase is impossible to predict. Each new test is evaluated for conflict with MOU between USAF Weapons and Tactics Center and US Fish and Wildlife Service. If a conflict occurs, then the test organization is asked if the test could be conducted at a different target array that has no conflict. If that alternative is unacceptable, then a meeting is held between the two parties to determine if there is an acceptable alternative that all parties can live with. So far, we have been able to host every request.

- 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. The MOU expired on 11 March 1991, but both sides are abiding with the previous MOU. The USAF Weapons and Tactics Center and the US Fish and Wildife Service are currently working on a MOU concerning the 60 series ranges. USFWS and USAFWTC have ageed to live with the expired MOU until a new MOU is signed.

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

50 NM radius:	**1,000,000+ (Las Vegas Metro Area)**
100 NM radius:	**1,000,000+ (Las Vegas Metro Area)**
150 NM radius:	**1,000,000+ (Las Vegas Metro Area)**
200 NM radius:	**3,000,000+ (Las Vegas Metro Area and eastern Los Angeles**

Metro Area)

Since the city of Las Vegas is within 50 NM of the USAFWTC Range Complex, the population exceeds 1,000,000 people. The eastern Los Angeles metropolitan area is with 200 NM of the range boundary. The ranges were based on the perimeter of the USAFWTC Range Complex, not the range center.

- 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.

V-244 between Wilson Creek VORTAC (ILC) and Coaldale VORTAC (OAL) runs the entire length of Reveille MOA. In addition, J-80/-58 runs the entire length of Reveille ATCAA. This situation creates a shelf at the Reveille/Desert border. The Desert ATCAA is released on a permanent basis to infinity. The Reveille ATCAA is released approximately 12 to 15 hours per day up to FL 230 or Fl 260 depending on the mission. This shelf has an impact on mission accomplishment and more importantly, it's a potential spillout which could become a flight safety issue. There are negotiations on-going with Salt Lake ARTCC to resolve this problem.

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

No test missions have been canceled due to commercial or public use.

- 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?

Year	Number of Missions Lost *(Due to Encroachment)*
1992	0
1993	0

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 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. There are several specialized facilities, such as the RFMDS pod shop. Most of the facilities are located on range and are supplied through contracts with Loral Aerospace and ARCATA Associates. LORAL Aerospace and ARCATA Associates operate radar repair shops, electronic communications repair shops, Television Ordnance Scoring System operations and repair shops, vehicle operations and maintenance shops, logistical storage points, communication nodes, Range Information System operations and repair shops, and data encryption communications between range sites and Nellis AFB.

-3.1.D.2 Are specialized targets required to support this facility? Yes/no. If yes, explain.

Yes. CBU grids, depleted uranium strafe targets, heated targets for Imaging Infrared and LANTIRN systems, sensor-fuzed weapons, and targets that are remote controlled.

-3.1.D.2.A Have the specialized targets been validated? Yes/no. If yes, by whom?

Yes. 57 TESTG, 4410 Tyndall Avenue, Nellis AFB, NV 89191-6063.

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 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.

Yes. Two of the four restricted areas within the USAFWTC Range Complex are

not under the control of 554 RANS. They belong to the US Department of Energy. Classified test and valuation can be conducted under their control without having to utilize other areas of the USAFWTC Range Complex. However, some tests require the use of all the range airspace, in these instances DOE projects have priority.

-3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

Yes, we can support, and have supported, virtually everything so far. As new requirements are identified, new tests will have to be reviewed on a case-by-case basis to determine the capability of the range complex. The functional areas are air, armament/weapons, electronic combat, and guidance.

-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. THERE ARE AIRSPACE AREAS ADJACENT TO THE USAFWTC RANGE COMPLEX TO EXPAND TO, BUT, ONLY AT HIGH ALTITUDES. THE BASE ALTITUDE OF THESE AREAS COULD BE NO LOWER THAN FL 410 TO FL 430. THERE ARE NO AIRSPACE AREAS AVAILABLE NORTH TO EXPAND INTO AT LOW TO MID ALTITUDES (FL180 TO FL390) BECAUSE OF THE UTAH TEST AND TRAINING RANGE (UTTR) AND FALLON RANGES. THERE ARE NO AIRSPACE AREAS AVAILABLE SOUTHWEST BECAUSE OF R-2508 COMPLEX. THE AIRSPACE SOUTH AND EAST OF THE USAFWTC RANGE COMPLEX INCLUDES THE LAS VEGAS TRACON AIRSPACE AND SEVERAL MAJOR AIRWAYS AND JET ROUTES.

-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. The USAFWTC Range Complex can support limited secure operations up to the Secret level.

-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.

No.

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. USAFWTC Range Complex is the only complex that incorporates test facilities, training facilities, tactics development, and lectronic combat within a single airspace. Test missions can be conducted under electronic combat onditions and then under sterile conditions. It is the only over land range that allows full tactics operations with very few restrictions.

-3.1.F.1.A Within the US Government? Yes/no. If yes, describe.

No.

-3.1.F.1.B Within the US? Yes/no. If yes, describe.

No.

-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 FY93 by Military Department.

Yes. FY 92 -- Navy (5 percent)
FY 93 -- Navy (5 percent)

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?

5470 square statue miles (3,500,800 acres) of land within Restricted Airspace

12,000 square nautical miles of airspace consisting of Restricted Airspace, Military Operating Areas (MOAs), and Air Traffic Control Assigned Airspace (ATCAA).

-3.1.G.2 Who owns and or controls the land under the restricted airspace you use?

Restricted Area 4806:	**USAF Weapons and Tactics Center**
Restricted Area 4807:	**USAF Weapons and Tactics Center**
Restricted Area 4808:	**Department of Energy**
Restricted Area 4809:	**Department of Energy**

-3.1.G.3 How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

5470 square statue miles (3,500,800 acres) of land within Restricted Airspace.

The altitude limits within all four Restricted Areas is surface to FL550 (55,000 feet above 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)? Dimensions? Will it support simultaneous users? Yes/no.

Yes, DART airspace. The DART South area is 17 nautical miles wide by 26 nautical miles long. The DART East area is 23 nautical miles wide by 27 nautical miles long. The DART West area is 8 nautical miles wide by 20 nautical miles long. No, it will not support simultaneous users.

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

The USAFWTC Range Complex is totally over land. There is approximately 12,000 square nautical miles of airspace within the range complex.

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

4/

V-244 between Wilson Creek VORTAC (ILC) and Coaldale VORTAC (OAL) runs the entire length of Reveille MOA. In addition, J-80/-58 runs the entire length of Reveille ATCAA. This situation creates a shelf at the Reveille/Desert border. The Desert ATCAA is released on a permanent basis to infinity. The Reveille ATCAA is released approximately 12 to 15 hours per day up to FL 230 or Fl 260 depending on the mission. This shelf has an impact on mission accomplishment and more importantly, it's a potential spillout which could become a flight safety issue. There are negotiations on-going with Salt Lake ARTCC to resolve this problem.

A possible projected airspace problem is the expansion of Fallon Range Complex south to within 20 nautical miles of USAFWTC Range Complex. This would restrict civil traffic east and westbound between the complexes.

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

165 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/no.

All public use airspace in the western United States has been used for overflight to include published low level training routes, military operating areas, and airways. Testing conducted from Nellis AFB includes FOT&E of hardware/software modifications to all fighter and bomber aircraft, FOT&E of new or modified weapons, and tactics development for all fighter and bomber aircraft. Yes, I anticipate continued use of all public-use airspace.

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/riverine, desert, and sea. State the area of each in square miles.

THE ENTIRE USAFWTC RANGE COMPLEX CONSISTS OF DESERT AND/OR MOUNTAINS. APPROXIMATELY 59 PERCENT (7080 SQUARE NAUTICAL MILES) OF THE RANGE IS DESERT AND APPROXIMATELY 40 PERCENT (4,800 SQUARE NAUTICAL MILES) IS MOUNTAINS, AND APPROXIMATELY 1 PERCENT IS CULTIVATED LOWLANDS (120 SQUARE NAUTICAL MILES).

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

Yes. During any rain storms, the CBU grids become flooded, which will result in excessive dud rate if allowed to drop. Therefore, the grids are closed whenever the ground is wet.

-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. To accomplish proper follow-on operational testing of hardware modifications some testing must be accomplished in all climatic conditions anticipated for the operational environment. Deployments included trips to northern tier bases to include Alaska, as well as, to various humid environments in the southeastern United States. Test conditions comprise approximately 10 percent of a normal test plan, with five percent or less of the flying hour program being conducted on such trips over the previous eight years. Precise historical data is not available for each year.

-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?

The number of days with an average temperature below 32° F is about 2. The number of days with an average temperature between 32° F and 95° F is about 353. The number of days with an average temperature above 95° F is about 10. Totals do not add up to 365 because of rounding and approximation.

-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 number of days with an average humidity less than 30 percent is 216 per year.

INSTALLATION WORKSHEET
Nellis Air Force Base, Nevada
Test & Evaluation

PURPOSE: To document the answer to BRAC 95 question number -3.1.H.6
What is the number of test missions per year (1985-1993) canceled due to weather?

SOURCE: 422 Test Squadron Post Mission Logs for 1993

METHOD: Records prior to 1993 were not kept. We reviewed 1993 records, and derived the answers.

CONCLUSION: Eighty-three missions were cancelled in 1993. This information was extracted from mission logs maintained in the 422 TES.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Robert W. Vomela Date 19 Sep 94
Signature
Robert W. Vomela, Captain, 57 TG/TGSS, 682-5178
Typed Name, Rank, Office Symbol, DSN Number

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

James C. Morgan Date 20 Sep 94
Signature
JAMES C. MORGAN, CMSgt, HQ ACC/LGPA, 574-4810
Typed Name, Rank, Office Symbol, DSN Number

The number of days with an average humidity between 30 and 80 percent is 141 per year. The number of days with an average humidity greater than 80 percent averages 8 per year.

-3.1.H.6 What is the number of test missions per year (1985 - 1993) canceled due to weather?

Historical data is not available for the years 1985 to 1992. 101 test missions were canceled due to weather in 1993. It is my professional knowledge and that of the 422 TES/COCO (scheduler) that this information is historically accurate and representative of information shown under previously requested weather data. Therefore, 101 test missions per year (1985 - 1993) were canceled due to weather.

-3.1.H.7 What is the number of test days per year (1985 - 1993) canceled due to weather?

Historical data is not available for the years 1985 to 1992. Three test days were canceled due to weather in 1993. It is my professional knowledge and that of the 422 TES/ COCO (scheduler) that this information is historically accurate and representative of information shown under previously requested weather data. Therefore, three test days per year (1985-1993) were canceled due to weather.

-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?

The number of days with an observation that recorded visibility is less than 1 mile averages less than 1 per year. The number of days with an observation that recorded visibility is between 1 mile and 3 miles is 1 per year. The number of days with no observations of three miles or less averages 364 per year.

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

239 days. Note: Range assets are available on weekends, but are not normally used. In addition, HQ ACC will normally sit down the last three to five flying days per fiscal year. This number serves as an average for any given fiscal year.

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

Estimate less than 10 percent.

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. Unmanned air vehicles and cruise missiles are included.

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.

Yes.

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

Anywhere from 30 NM to 210 NM north-northwest of Nellis AFB.

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

Virtually the entire range is supersonic capable. The MOAs are supersonic above 5,000 feet MSL, while R-4807 is supersonic above 100 feet AGL. The maximum altitude is FL550.

-3.2.A.4 Over land or water? What size and shape (length and width)?

The USAFWTC Range Complex is completely over land. Restricted airspace consists of 3,500,800 cres of withdrawn land. The Mlitry Operating Areas add to the actual usable airspace and create over 12,000 square nautical miles of airspace. The range is 110 nautical miles (north/south) and 165 nautical miles (east/west). The airspace extends from the surface to
FL 550 (55,000 feet).

-3.2.A.5 Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

Yes. To use the range complex, the airspace must be scheduled and the aircrew must be cleared for the airspace by the Range Operations Center (radio callsign -- Blackjack). The only other restrictions are the published minimum altitudes and avoidance of noise sensitive areas. Thirty-eight noise sensitive areas exist within the working areas.

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

The vast size of the range allows for 100+ aircraft missions to be flown simultaneously. If telemetry data is required, the limit is 36 due to inherent limitations in RFMDS.

-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.

Nellis Air Force Base, Nevada:

Rwy 03L/21R --

10,119 feet by 200 feet with an asphalt surface.
Both overruns are 1,000 feet long.

(03L) Yes, arresting cables: MA-1A (99 feet OVRN), BAK-9(B) (40 feet OVRN), BAK-14 (1214 feet).

(21R) Yes, arresting cables: MA-1A (99 feet OVRN), BAK-9(B) (40 feet OVRN), BAK-14 (1453 feet).

Weight Bearing Capacity	
Type Landing Gear	*Gross Weight (pounds)*
Single Wheel (F-15)	70,000
Twin Wheel (C-9A)	150,000
Single Tandem (C-130)	175,000
Twin Tandem (B-52)	285,000

Twin Delta Tandem (C-5)	800,000
The Pavement Classification Number is 44 R/B/X/T	

Rwy 03R/21L --

10,051 feet by 150 feet with an asphalt surface.
Both overruns are 1,000 feet long.

(03R) Yes, arresting cables: MA-1A (95 feet OVRN), BAK-9(B) (35 feet OVRN), BAK-12(B) (1188 feet).

(21L) Yes, arresting cables: MA-1A (104 feet OVRN), BAK-9(B) (45 feet OVRN), BAK-12(B) (1230 feet).

Weight Bearing Capacity	
Type Landing Gear	*Gross Weight (pounds)*
Single Wheel (F-15)	130,000
Twin Wheel (C-9A)	225,000
Single Tandem (C-130)	175,000
Twin Tandem (B-52)	360,000
Twin Delta Tandem (C-5)	800,000
The Pavement Classification Number is 44 R/B/X/T	

Elevation -- 1868 feet above mean sea level.

Landing/Terminal Aids -- TACAN, VORTAC, ILS, and full radar service.

Ramp Area	
Category Description	Area (Square Feet)
Airfield Pavement -- Taxiways	3,573,126
Airfield Pavement -- Aprons	7,375,527
Dangerous Cargo Pad	364,068

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Hangar Space	
Facility Number	Area (Square Feet)
220	25,592
222	25,592
224	25,592
226	26,132
237	18,770
245	40,338
256	25,611
270	83,554
283	67,632
287	25,122
290	50,405
292	45,021

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

Diversion Data			
Base	Rwy (Length)	Heading (Degrees)	Distance (Nautical Miles)
China Lake NAS	14/32 (9,000')	242	133
Edwards AFB	04/22 (15,000')	227	159
El Toro MCAS	16/34 (10,000')	207	203

Fallon NAS	13/31 (14,000')	304	258
Indian Spring AFAF	08/26 (9,000')	290	37
Lemoore NAS	14/32 (13,500')	258	238
Luke AFB	03/21 (10,000')	126	208
Diversion Data			
Base	Rwy (Length)	Heading (Degrees)	Distance (Nautical Miles)
March AFB	14/32 (13,300')	204	178
Pt Mugu NAS	03/21 (11,100')	224	237
Reno/Stead	14/32 (8,000')	298	308
Tonopah Muni	15/33 (7,100')	305	125
Twentynine Palms MCAS	10/28 (8,000')	192	129
Yuma MCAS	03/21 (13,299')	160	216

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

Nellis AFB is situated anywhere from 30 nautical miles to 210 nautical miles to the south of the USAFWTC Range Complex.

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

Its the only airfield in close proximity to the world's largest test and training facility (USAFWTC Range Complex). The additional test facilities of Naval Air Warfare Center, China Lake, California; National Training Center, Ft Irwin, California; Fallon Range Complex, Nevada; and Utah Test and Training Range, Utah are all within the local flying area for most fighter or larger aircraft.

-3.2.B.5 Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

Under certain test conditions (maximum weight, loads, etc.) heavier aircraft may be limited on certain days due to meteorological conditions. Excessive temperatures during the months of July through early September or excessive wind conditions during the spring months (February through May) may cause takeoff conditions to exceed allowable limits.

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

Nellis AFB could park the following number of aircraft in addition to the 145 aircraft currently stationed here:

	F-16	230	or	F-15	184
or	F-111/A-10	138	or	C-130/-135	41
or	B-1	31	or	B-52	18

This is using the parking ramp only. Hangar space currently used by Red Flag, Air Warrior, and 57 LSS/LSOV is only 10 hangar bays. None of these hangar bays are large enough to accommodate heavy aircraft. B-52 aircraft have additional restrictions for taxing and runway usage.

Since it is unlikely that all functions generating TDY aircraft will go away, only small numbers of additional aircraft could be accepted at Nellis AFB. At most, Nellis AFB might be able to generate possibly two rows of additional permanent aircraft. Giving up these rows would impact the ability of Nellis AFB to accommodate all current TDY aircraft including airlift. Normal TDY traffic is a mix of fighters, bombers, and airlift which already regularly task ramp space to the breaking point. TDY aircraft are routinely turned away due to lack of ramp space.

Unmanned vehicles and cruise missiles are not supportable on the Nellis AFB ramp due to congestion, complex airspace, and lack of suitable facilities.

Nellis AFB currently has six HH-60 helicopters of which two from the Combat Rescue Squadron are used to conduct test missions. Helicopter parking is limited to ither the 34 South or North ramp areas due the associated FOD hazards. The 66th Rescue Squadron and the Combat Rescue Squadron currently use all assigned permanent helicopter parking on the North ramp. The 34 South ramp is isolated from facilities and is used as an alternate hot cargo pad, so permanent parking is not feasible. Nellis AFB cannot handle more helicopters than is currently planned.

-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)

All kinds of fixed wing and rotary wing operational testing can be supported.

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

Yes. All normal ground facilities exist except flight simulators.

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

Nellis AFB could park the following number of aircraft in addition to the 145 aircraft currently stationed here:

	F-16	**230**	**or**	**F-15**	**184**
or	**F-111/A-10**	**138**	**or**	**C-130/-135**	**41**
or	**B-1**	**31**	**or**	**B-52**	**18**

This is using the parking ramp only. Hangar space currently used by Red Flag, Air Warrior, and 57 LSS/LSOV is only 10 hangar bays. None of these hangar bays are large enough to accommodate heavy aircraft. B-52 aircraft have additional restrictions

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for taxing and runway usage.

Since it is unlikely that all functions generating TDY aircraft will go away, only small numbers of additional aircraft could be accepted at Nellis AFB. At most, Nellis AFB might be able to generate possibly two rows of additional permanent aircraft. Giving up these rows would impact the ability of Nellis AFB to accommodate all current TDY aircraft including airlift. Normal TDY traffic is a mix of fighters, bombers, and airlift which already regularly task ramp space to the breaking point. TDY aircraft are routinely turned away due to lack of ramp space.

Unmanned vehicles and cruise missiles would not be a desirable mix on the Nellis AFB ramp due to congestion, complex airspace, and lack of suitable facilities.

Nellis AFB cannot handle more helicopters than is currently planned due to FOD hazards and congestion.

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

No.

-3.2.C.5 What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

All types of missions are performed on the USAFWTC Range Complex on a daily basis.

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

36 aircraft due to RFMDS limits.

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

4 missions.

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

Aircraft Maintenance Organization	*Division*	*Aircraft Type*	*Number Assigned*
66 RQS	66 RQS	HH-60	4
	CRQS	HH-60	2
561 FS	561 FS	F-4G	32
	422 TES	F-4G	2
Thunder	WS	A-10	9
	422 TES	A-10	4
Strike	WS	F-15E	6
	422 TES	F-15E	5
Eagle	WS	F-15C/D	11
	422 TES	F-15C/D	8
Viper	AT	F-16C/D	8
	422 TES	F-16C/D	18
Falcon	WS	F-16C	22
		F-16D	2
Thunderbirds		F-16C	10
		F-16D	2
		Total	145

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 USAFWTC Range Complex has 52 electronic warfare threat simulators that simulate 10 different (SAM and AAA) threat radars.

-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?

Approximately 40 electronic warfare threat simulators can be simulated at any given time. All threat simulators are either AAA or SAM except two which are ACQ type radars. the largest number of radar simulators active at one time are usually during major exercises like Green Flag when 35-40 simulators are in use. Average use is approximately 20 simulators at a time. The threat simulators operate in every band, from Echo to Juliet. All simulators are radiated at the aircraft.

-3.3.A.3 Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

YES. THE SYSTEMS ARE VALIDATED BY AFTWC FROM KELLEY AFB, TX. THEY WERE AT NELLIS AFB DURING THE MONTH OF MAY AND VALIDATED AND VERIFIED ALL THREATS.

-3.3.A.4 Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

Yes, to all.

-3.3.A.5 What is the threat representation (fidelity) and density?

Most threat simulators are limited fidelity in that they radiate and receive signals. They do not have the computer processor system that completes the system. This means they can radiate a correct signal, but the aircraft cannot judge tactics effectiveness against these systems. The ten FAN SONG/LOW BLOW simulators, two STRAIGHT FLUSH simulators, one GUN DISH simulator, and all ten FLAP WHEEL simulators are full fidelity simulators. This means that aircrew can judge tactics and electronic combat effectiveness against these systems.

-3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

ALL THREAT SIMULATORS SIMULATE LAND BASED THREATS. WE HAVE NOCAPABILITY TO SIMULATE SEA-BASED THREATS AT THE CURRENT TIME. FIFTY-TWO ELECTRONIC WARFARE THREAT SIMULATORS ARE USED TO SIMULATE 10 DIFFERENT (SAM AND AAA) THREAT RADARS. CURRENTLY, 544 RANS HAS TWO EARLY WARNING/ACQUISITION/GROUND CONTROLLED INTERCEPT RADAR SIMULATORS, AND 25 SURFACE-TO-AIR MISSILE RADAR SIMULATORS. AAA SIMULATORS RANGE FORM 23MM GUNS TO 100MM GUNS WHILE THE SAM SIMULATORS RANGE FROM SA-2 TO SA-8 SYSTEMS.

-3.3.A.7 What geographic dispersion can be simulated?

Approximately division level coverage.

-3.3.A.7.A Threat lay down?

Approximately division level coverage.

-3.3.A.7.B Representative distance?

Approximately 50 nautical mile coverage.

-3.3.A.8 Are the threats moveable (i.e.dynamic) within a test scenario? Relocatable to new scenarios? Yes/no.

Yes, to some degree, all threats are movable. The FAN SONG/LOW BLOW simulators are the least mobile (require 3-5 days to break down, move, and set-up), while five GUN DISH simulators can move within one hour. These simulators operate from the back of a 3/4 ton pickup and drag their generator behind them. Operations consist of stopping, connecting electrical cables, starting the generator, and then running up the radar simulator.

-3.3.A.9 Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

No.

-3.3.A.10 Is there a limit on simultaneous users? Yes/no. If no, explain.

If telemetry data is required, 36 aircraft due to RFMDS limits. If telemetry data is not required, there is no limit.

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.

-3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

THE USAFWTC RANGE COMPLEX ALLOWS FOR COMPLETE TESTING OF COUNTERMEASURES. AIRCREWS CAN TEST THE FUNCTION OF ECM PODS, STAND-OFF JAMMING, CHAFF, FLARES, MANEUVERS, ETC. TO DETERMINE THE EFFECTIVENESS OF THE COMPLETE PACKAGE. DURING RED FLAG EXERCISES, EACH AIRCRAFT CAN BE EVALUATED ON EW COUNTERMEASURES EFFECTIVENESS WHEN ENGAGED.

-3.3.B.3 What range of spectra can be tested and evaluated?

Virtually every band can be tested to some degree on the USAFWTC Range Complex. Spot jamming is only authorized below FL 250 (25,000 feet).

Frequencies/EW Bands Authorized

30 - 50 MHz	1,050 MHz	2,710 MHz	6,531 MHz
54 - 73 MHz	1,065 MHz	2,730 MHz	7,270-7,325 MHz
76-100 MHz	1,140 MHz	2,740 MHz	7,800 - 8,200 MHz
140 - 144 MHz	1,150 MHz	2,770 MHz	8,500 - 9,000 MHz
148 - 150 MHz	1,190 MHz	2,795 MHz	9,000 - 9,200 MHz
151 MHz	1,200 MHz	2,810 MHz	9,200 - 10,550 MHz
154 MHz	1,220 MHz	2,900 - 3,700 MHz	13,200 - 14,500 MHz
157 MHz	1,240 MHz	4,200 - 4,990 MHz	14,600 - 15,350 MHz

159 MHz	1,280 MHz	5,000 - 5,925 MHz	15,400 - 17,700 MHz
160 MHz	1,429 - 1,435 MHz	6,450 MHz	19,700 - 27,525 MHz
161 MHz	2,208 MHz	6,475 MHz	31,800 - 38,600 MHz
216 - 225 MHz	2,273 MHz	6,515 MHz	40,000 - 88,000 MHz
700 - 810 MHz	2,300 - 2,450 MHz	6,525 MHz	90,000 - 100,000 MHz
890 - 942 MHz	2,708 MHz		

Chaff is limited to 2,000 - 20,000 MHz and limited burst only.

-3.3.B.4 What are the available spectra?

Virtually every band can be tested to some degree on the USAFWTC Range Complex. Spot jamming is only authorized below FL 250 (25,000 feet).

Frequencies/EW Bands Authorized

30 - 50 MHz	1,050 MHz	2,710 MHz	6,531 MHz
54 - 73 MHz	1,065 MHz	2,730 MHz	7,270-7,325 MHz
76-100 MHz	1,140 MHz	2,740 MHz	7,800 - 8,200 MHz
140 - 144 MHz	1,150 MHz	2,770 MHz	8,500 - 9,000 MHz
148 - 150 MHz	1,190 MHz	2,795 MHz	9,000 - 9,200 MHz
151 MHz	1,200 MHz	2,810 MHz	9,200 - 10,550 MHz
154 MHz	1,220 MHz	2,900 - 3,700 MHz	13,200 - 14,500 MHz
157 MHz	1,240 MHz	4,200 - 4,990 MHz	14,600 - 15,350 MHz
159 MHz	1,280 MHz	5,000 - 5,925 MHz	15,400 - 17,700 MHz
160 MHz	1,429 - 1,435 MHz	6,450 MHz	19,700 - 27,525 MHz
161 MHz	2,208 MHz	6,475 MHz	31,800 - 38,600 MHz
216 - 225 MHz	2,273 MHz	6,515 MHz	40,000 - 88,000 MHz
700 - 810 MHz	2,300 - 2,450 MHz	6,525 MHz	90,000 - 100,000 MHz
890 - 942 MHz	2,708 MHz		

Chaff is limited to 2,000 - 20,000 MHz and limited burst only.

-3.3.B.5 Do you have a scene generation capability? Yes/no. If yes, describe.

Yes. Red Flag Measurement and Debriefing System.

3.4 ARMAMENTS / 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.

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.

-3.4.A.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?

No.

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.

-3.4.B.1 Ground Space

-3.4.B.1.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?

5470 square statue miles of restricted area.

-3.4.B.1.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.

There are the 60 series ranges and the 70 series ranges. All are over land ranges. The ranges and sizes are as follows:

R-61	**197,800 acres**	**R-71**	**190,800 acres**
R-62	**168,320 acres**	**R-74**	**280,960 acres**
R-63	**225,920 acres**	**R-75**	**133,120 acres**
R-64	**303,360 acres**	**R-76**	**172,800 acres**
R-65	**112,640 acres**		

-3.4.B.1.C What are the maximum ranges (nautical miles) you can test, by type weapon?

If fly-out distance does not exceed approximately 150 NM, then any weapon can be tested as long as the footprint remains within the range complex.

3.4.B.2 Test Operations

-3.4.B.2.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:

--Unguided 2000 pound-class ballistic weapon
---live?
---inert?

--Guided weapon (e.g., GBU-24 class)
---live?
---inert?

--Stand-off weapon (e.g., AGM-130 class)
---live?
---inert?

--Short-range missile (e.g., AIM-9)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL

--Long-range missile (e.g., AIM-120)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL

UNKNOWN. 554 RANS DOES NOT TRACK THIS DATA. IF THE TEST REQUIRES THE USE OF WEAPONS, THEN A RANGE SAFETY APPROVAL IS GENERATED THAT IDENTIFIES THE WEAPON AND THE FOOTPRINT. 554 RANS DOES NOT TRACK THE NUMBER OF BOMBS DROPPED WITH EACH TEST. EACH OF THE ABOVE LISTED FOOTPRINTS HAS BEEN USED DURING THE COURSE OF A YEAR, WITH THE EXCEPTION OF THE SHORT-RANGE AND LOG RANGE MISSILES. THE RANGE HAS THE AIRSPACE TO TEST CAPTIVE CARRY OF AIM-120, BUT THERE IS NO AUTHORIZATION FOR LIVE FIRE AT THIS TIME.

I HAVE NO WAY TO EVEN ESTIMATE THE NUMBER OF TEST MISSIONS IN A YEAR WITH ANY DEGREE OF ACCURACY. ALL CLASSES OF WEAPONS ARE ALLOWED (EXCEPT AS NOTED ABOVE), BUT ARE NOT TRACKED BY EACH TYPE AND NUMBER BY 554 RANS. 422 TES COULD PROVIDE THEIR NUMBERS FOR THEIR TESTS, BUT THE NELLIS RANGE ALSO HOST TEST MISSIONS FROM EDWARDS AND OTHER CLASSIFIED LOCATIONS. THE NUMBERS FROM THE 422 TES WOULD BE MISLEADING TO ACTUAL RANGE WEAPONS USAGE

.-3.4.B.2.B Were flight termination systems required? Yes/no.

Yes.

-3.4.B.2.C If no missions were scheduled in a category, give the reason(s).

There were problems with the flight termination system or there was no flight termination system installed.

-3.4.B.2.D 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.

No.

APPENDIX A - DATA FORMS AND INSTRUCTIONS

1. Form, General Information

Facility/Capability: Enter the descriptive title for the facility/capability. Avoid using acronyms and abbreviations unless the title defines the acronym. Example: Guided Weapons Evaluation Facility (GWEF).

Origin date: Enter today's date in the format MM/DD/YY.

Military Department: Allowable entries include "N" for Navy, "A" for Army, and "AF" for Air Force. If the facility/capability is managed by an "Other Government Agency" (e.g. ARPA, DNA, ACC) enter the appropriate Agency name.

Organization/Activity: Enter the name (with acronym) for the field activity. Example: White Sands Missile Range (WSMR).

Location: Enter the location where the facility/capability is physically located (installation, city or other common name).

Unit Identification Code (UIC): Enter the UIC.

T&E Functional Area: Enter the single area this facility/capability primarily supports: Air Vehicles, Armament/Weapons, Electronic Combat, or Other.

T&E Test Facility Category: Enter the facility category based on the following definitions:

(1) Digital Models and Computer Simulations (DMS)- Those models and simulations which either provide a simulated test environment or representations of systems, components, and platforms. DMSs are used throughout the development and test process, as analytical tools, as well as tools to drive or control electronic and other environmental stimuli provided, the test articles on

Open Air Ranges (OARs), Installed Systems Test Facilities (ISTFs), Hardware in the Loop Test Facilities (HITLs), Integration Laboratories (ILs), and Measurement Facilities (MFs).

(2) Measurement Facilities (MF)- Those facilities used to provide a specialized test environment and/or data collection capability. MFs may be ground based laboratories or open air facilities (often located at or part of OARs).

(3) Integration Laboratories (IL)- Those facilities designed to support the integration and test of various systems and components that will be installed in a host platform. ILs are generally platform specific or unique. However, the simulated stimuli and data collection capabilities required by ILs are often common with those required by HITLS and ISTFs.

(4) Hardware-In-The-Loop (HITL)- Those facilities which provide capabilities to test systems or their components at various stages of development (e.g., brassboard, breadboard, prototype, preproduction, production). HITLs provide stimuli and data collection capabilities to permit test and evaluation of a system/component independent of the host platform.

(5) Installed Systems Test Facilities (ISTF)- Ground based test facilities (usually chambers) that allow test of systems and weapons as installed in the combat platform. ISTFs provide simulated test environments and stimuli and data collection capabilities for the test article(s).

(6) Open Air Ranges (OAR)- Those facilities which consist of controlled or restricted areas to support the test of platforms/systems in a real world, dynamic environment. They are instrumented with data collection, time-space-position information, positive control of test participants, and real or simulated targets and threats as appropriate.

Percentage Use: Enter percentage of time, based on hours, the facility is used to support each of the following (total must sum to 100%):

(1) Test and Evaluation (T&E)- Any facility that is accountable to Military Department and/or OSD T&E management oversight. Operation and sustainment of these facilities are typically funded from 6.5 or procurement program

elements. Facilities in this category were developed to support developmental and/or operational test and evaluation and focus on the evaluation of system safety, technical performance, environmental (climatic, electromagnetic, etc.) effects, sustainability and operational suitability, maturity of production processes, and compliance with system specifications and quality standards.

(2) Science & Technology (S&T)- Any facility that is accountable to Military Department and/or OSD S&T management oversight. Operation and sustainment of these facilities are typically funded from 6.1, 6.2, and 6.3a program elements. Facilities in this category were developed to support experimental studies leading to enhanced understanding of new phenomena for new military applications as well as efforts directed toward the solution of problems in the physical, behavioral, and social sciences.

(3) Developmental Engineering (DE)- Any facility that is accountable to Military Department and/or OSD Research, Development and Engineering or acquisition management oversight. Operation and sustainment of these facilities are typically funded from 6.3b through 6.4 or procurement program elements. Facilities in this category were developed to support proof-of-principle and engineering development of systems.

(4) In-Service Engineering (IE)- Any facility that is accountable to Military Department and/or OSD logistics management oversight. Operation and sustainment of these facilities are typically funded from 6.7 or Operations and Maintenance (O&M) program elements. Facilities in this category were developed to support the maintenance facilities. These facilities tend to be system peculiar capabilities to conduct checkouts of the system/subsystems after they have undergone a modification, upgrade or improvement.

(5) Training and Doctrine (T&D)- Any facility that is accountable to Military Department and/or OSD training and doctrine management oversight. Operation and sustainment of these facilities are typically funded from O&M program elements. Facilities in this category were developed to support the training and proficiency of operational forces and/or the development of new tactics, doctrine or force structure concepts.

(6) Other - Any work outside the above.

TECHNICAL INFORMATION

Facility/Capability Title: USAF Weapons and Tactics Center NELLIS AFB, NV

Facility Description: **Including mission statement**: The Combat air Forces' technical focal point for Operational Test and Evaluation and Tactics Development and Evaluation of all aircraft possessed by the USAF Weapons and Tactics center. Evaluates the operational effectiveness and suitability of all embedded software prior to its implementation in operational units. Designs and executes tests of foreign material exploitation programs to evaluate capabilities and limitations. Provides critical expertise for avionics modifications/acquisitions. Develops offensive and defensive tactics to counter the continuous upgrade of potential adversary weapons systems. Evaluates those tactics in large scale combat scenarios. Identifies system deficiencies and/or enhancements which require system modification or additional acquisitions to maintain the lethality superiority required to project US air power worldwide.
Interconnectivity/Multi-Use of TD&E Facility: Ranges and support infrastructure used in T&E exist primarily to support realistic combat training exercises and syllabi.
Type of Test Supported: OT&E of new systems, QOT&E of off-the-shelf modifications to existing systems, FOT&E of major weapons systems and modifications thereto. Operational Utility Evaluations of weapon systems under development, Quick Looks at operational concepts being explored for future developments, TD&Es to recommend to the CINCs tactics that can be used to maximize lethality and survivability of their combat forces.
Summary of Technical Capabilities: Time-space-position information (RFMDS and TSPI), threat system video documentation, remote accurate weapon impact scoring, rapid target construction/reconstruction, area munitions scoring, large munitions footprint compatibility.
Keywords: Lethality, survivability, combat forces.

GENERAL INFORMATION

Facility/Capability Title: USAF Weapons and Tactics Center NELLIS AFB, NV

Origin Date: 9 August 1994

Service: USAF Organization/Activity: 57th Test Group Location: Nellis AFB NV

T&E Functional Area: OT&E/FOT&E/TD&E UIC=

T&E Test Facility Category: Other T&E

	T&E	S&T	DE	IE	T&D	OTHER
PERCENTAGE USE:	20%					80%
BREAKOUT BY T&E FUNCTIONAL AREA (%):						
Air Vehicles						
Armanent/Weapons	2%					
EC						
Other	18%					

Total In Breakout Must Equal "Percentage Use" On First Line

64B

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: NELLIS RANGE COMPLEX NELLIS AFB, NV

ANNUAL HOURS OF DOWNTIME	1.	3650
AVERAGE DOWNTIME PER DAY (LINE 1÷365)	2.	10
AVERAGE HOURS AVAILABLE PER DAY (24-LINE 2)	3.	14

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL ∑)
4	5	6	7	8
Large Scale	1	60 Sorties	60 Sorties	840 Sorties

64C

Breakout by T&E Functional Area: For each of the above categories (T&E, S&T, DE, IE, T&D, Other) enter percentage of time facility is used to support Air Vehicles, Armament/Weapons, Electronic Combat, or Other. Total of breakout areas must sum to top line percentage.

2. Form, Technical Information

Facility Description: Enter a brief description of the facility, including the mission statement.

Interconnectivity/Multi-Use of Facility: Describe any linking/interconnectivity with other T&E facilities. Include physical and/or data linkages (bandwidth, data rate, etc.). Describe any unique characteristics or multiple use of the resource (e.g., operating by rotating crew, availability of resource dependent on ..., equipment will be obsolete by ..., etc.)

Type Tests Supported: Enter specific types of tests accomplished by the Facility (e.g., electromagnetic compatibility, radar cross section, missile miss distance, air-to-air radar simulation, etc).

Summary of Technical Capabilities: Describe technical capabilities at your facility to include:

Instrumentation/Assets: Enter instrumentation and other assets (e.g., jammers, target generators, recording equipment, computer support equipment) associated with the resource.

Provide fact sheets, not to exceed two pages.

Keywords: Enter any keywords (spelled-out with acronyms) associated with functions and capabilities of the facility (e.g., electromagnetic interference/electromagnetic compatibility (EMI/EMC), anechoic chamber, radar cross section (RCS)).

3. Form, Additional Information

65

DET 4/TACCSF KIRTLAND AFB

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: Det 4, Theater Air Command and Control Facility (TACCSF) / Modeling and Simulation

AGE: Facility Age - 46 YRS/TACCSF Capability - 4 YRS

REPLACEMENT VALUE: $ 224M

MAINTENANCE AND REPAIR BACKLOG: $ 100 K

DATE OF LAST UPGRADE: FY93

NATURE OF LAST UPGRADE: Facility Upgrade: The facility has not had any upgrades since the inception of TACCSF in 1990. This is due to lack of funding.

Capability Upgrade: Established a distributed simulation node of the TACCSF in the HQ USAF Directorate of Modeling, Analysis, and Simulation (XOM), Theater Battle Arena, located in the Pentagon. It was operational in Mar 94.

MAJOR UPGRADES PROGRAMMED:

1. UPGRADE TITLE: Joint Environment for Testing, Training, and Analysis
TOTAL PROGRAMMED AMOUNT: $1.388M
SUMMARY DESCRIPTION: Developing Distributed Simulation Linkage to 10 Joint Test Facilities. A data link test suite will be installed which will link simulate simulation facilities and live systems to interoperate by exchanging TADIL J messages.

2. UPGRADE TITLE: Joint Systems Training Exercises
TOTAL PROGRAMMED AMOUNT: $1.215M
SUMMARY DESCRIPTION: Additional distributed simulation architecture which will allow TACCSF to interoperate with Air Force Airborne warning and control system simulators, Army Patriot, and Navy Aegis Cruiser live systems.

NOTE: DISREGARD THIS PAGE. IT DOESN'T APPLY TO USAFWTC @ NELLIS AFB, NV.
THE INFORMATION ON THIS PAGE IS THE SAME AS PAGES 280 AND 281 IN BOOK 313 (PAGES 47+48 IN THE DATA CALL RESPONSE FOR DET 4/TACCSF).
Nathan
22 Aug 94

DET 4/TACCSF KIRTLAND AFB

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Det 4, Theater Air Command and Control Simulation Facility (TACCSF) / Modeling and Simulation

		FISCAL YEAR							
T&E FUNCTIONAL AREA	HOURS	86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
EC	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								
OTHER T&E	DIRECT LABOR	0	0	0	29,000	111,800	150,310	145,540	192,689
	TEST HOURS	0	0	0	0	180	80	250	490
	MISSIONS								
OTHER	DIRECT LABOR	0	0	0	0	0	0	0	0
	TEST HOURS	0	0	0	0	0	0	0	0
	MISSIONS								

NOTE: DISREGARD THIS PAGE. THIS APPLIES TO DET 4/TACCSF, NOT NELLIS AFB. THE INFORMATION ON THIS PAGE IS THE SAME AS ON PAGE 282 IN THIS BOOK (PAGE 49 IN THE DATA CALL RESPONSE FOR DET 4/TACCSF).

Nation
22 Aug 94

DET 4/TACCSF KIRTLAND AFB

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Det 4, Theater Air Command and Control Simulation Facility (TACCSF) / Modeling and Simulation

ANNUAL HOURS OF DOWNTIME	1	2650
AVERAGE DOWNTIME PER DAY (LINE 1÷ 365)	2	7.25
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	16.75

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ 8
Theater Level Simulation	1	100	100	1675
			TOTAL Σ	ANNUAL UNCONSTRAINED CAPACITY 9
			100	611,375
TYPICAL	1	100	100	

NOTE: DISREGARD THIS PAGE. THIS APPLIES TO DET4/TACCSF, NOT NELLIS. THE INFORMATION ON THIS PAGE IS THE SAME AS ON PAGE 283 OF THIS BOOK (PAGE 50 OF THE DATA CALL RESPONSE FOR DET4/TACCSF).

Nation
22 Aug 94

DET 4/TACCSF KIRTLAND AFB

TECHNICAL INFORMATION

Facility/Capability Title: **Det 4, TACCSF / Modeling and Simulation**

Facility Description; Including mission statement: The Theater Air Command and Control Simulation Facility (TACCSF), located at Kirtland AFB, New Mexico, is the world's largest operator-in-the-loop, air defense simulation facility, supporting joint services and the Department of Defense. The mission is to provide simulation for theater air defense, battle management, command, control, computers, and intelligence (BMC4I), and weapons system testing and training.

Interconnectivity/Multi-Use of T&E Facility: **The facility is interconnected to several service simulation centers and national facilities through T-1 links using Distributed Interactive Simulation (DIS) and Defense Simulation Internet (DSI) networks. The facility also uses Satellite Communication networks. The TACCSF is used for numerous joint exercises involving the services and national assets.**

Type of Test Supported: **Joint Service Training, Theater Ballistic Missile Defense exercises, Army Patriot Training, USAFWS Controller Training, system development tests such as the Airborne Laser, Boost Phase Interceptor developmental tests, live test rehearsals such as the Operations Concept Demonstrations, DIS development exercises, IFF testing, and system/concept demonstration facility for senior Department of Defense leadership.**

Summary of Technical Capabilities: **The TACCSF simulates air defense functions and offensive operations such as tracking, identification, weapons allocation and control, and kill assessment at all execution levels from a control and reporting center (CRC) down to individual fire units or airborne interceptors. High fidelity data link models use actual message formats and data rates/capabilities. The models include accurate representation of processing algorithms for detection, tracking, track correlation, task saturation, and target allocation, and engagement; with kill assessment to satisfy the operators need for engagement feedback. Scenarios can place the participants anywhere in the world.**

Keywords: **Distributed Interactive Simulation (DIS), Scenario, Real-Time, Operator-in the-Loop, Theater Level Simulation,**

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DET 4/TACCSF KIRTLAND AFB

GENERAL INFORMATION

Facility/Capability Title: Det 4, 505th CCEG, Theater Air Command and Control Simulation Facility (TACCSF

Origin Date: 20 May 94

Service: USAF **Organization/Activity:** Theater Air Command and Control Simulation Facility (TACCSF) **Location:** Kirtland AFB, NM
Complete form for FY93

T&E Functional Area: Other **UIC =** KVICF9K6

T&E Test Facility Category: Digital Models and Computer Simulations

	T&E	S&T	D&E	IE	T&D	OTHER	= 100%
PERCENTAGE USE:							
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles							
Electronic Combat							
Armament/Weapons							
Other Test	60	10	20		10		

NOTE: DISREGARD THIS PAGE. IT APPLIES TO DET4/TACCSF NOT NELLIS. THE INFO ON THIS PAGE IS THE SAME AS ON PAGES 285 AND 286 OF THIS BOOK (PAGES 52 AND 53 OF THE DATA CALL RESPONSE FOR DET4/TACCSF). Nation 22Aug94

DET 4/TACCSF KIRTLAND AFB

ADDITIONAL INFORMATION

Facility/Capability Title: Det 4/TACCSF/Modeling and Simulation

PERSONNEL

	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
Officer	11	11	16	16	16	16	16
Enlisted	5	5	6	6	6	6	6
Civilian	9	9	10	10	10	10	10
Contractor	78	85	85	85	85	85	85
Total	103	103	110	110	110	110	110

Total Square Footage: 40,000

Test Area Square Footage: 17,208

Office Space Square Footage: 22,792

Tonnage of Equipment: 88

Volume of Equipment: 24,804 cubic feet

Annual Maintenance Cost: $1,450,000

Estimated Moving Cost: $2.46 Million

CAPITAL EQUIPMENT INVESTMENT ($)

FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99
2,977,000	5,064,000	4,000,000	5,000,000	6,000,000	3,000,000	2,000,000

NOTE: DISREGARD THIS PAGE. IT APPLIES TO DET4/TACCSF, NOT NELLIS. THE INFORMATION ON THIS PAGE IS THE SAME AS ON PAGE 287 OF THIS BOOK (PAGE 54 OF THE DATA CALL RESPONSE FOR DET4/TACCSF). Nation
22 Aug 94

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ADDITIONAL INFORMATION

Facility/Capability Title: Weapons and Tactics Center Test Facilities

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	125	125	125	125	125	130	130
Enlisted	85	85	85	85	85	95	95
Civilian	38	38	38	38	38	45	45
Contractor	20	20	20	20	20	28	28
Total	268	268	268	268	268	298	298

Total Square Footage: 611,520

Test Area Square Footage: 150,000

Office Space Square Footage: 461,520

Tonnage of Equipment: 349,000 lbs

Volume of Equipment: 58,256 cu ft

Annual Maintenance Cost: 1,345,000

Estimated Moving Cost: 41 million

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
1.1	.7	.85	1.2	1.1	12.0	10.0

Document Separator

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INVENTORY OF TYNDALL FORMS

	GEN INFO	TECH INFO	POSTAL INFO	FAC COND	HIST WKLD	UNC CAP
Wetsone Control Facility (GCI)	122 ✓	123 ✓	127, 128 ✓	126 ✓	125 ✓	124 ✓
Radar Test Facility	131, 132 ✓	134, 135 ✓	136, 137 ✓	133 ✓	135, 136 ✓	129, 130 ✓
Range Facility and Avionics Complex	139 ✓	143 ✓	145 ✓	140 ✓	144 ✓	138 ✓
E-9 Airborne Platform/Telemetry (AP/T-1)	146 ✓	147, 148 ✓	154 ✓	152, 153 ✓	150, 151 ✓	149 ✓
Sub Scale Aerial Targets (SSAT)	155 ✓		157 ✓		156B ✓	169, 170 ✓
Full Scale Aerial Targets (FSAT)	156 ✓		158 ✓		156A ✓	159, 160 ✓
Bldg 9352 Fullscale Antenna Tower				161 ✓		
Bldg 9351 Fullscale Antenna Tower				161, 162 ✓		
Bldg 9350 Fullscale Antenna Tower				162 ✓		
Bldg 9349 Fullscale Antenna Tower				163 ✓		
Bldg 9317 Fullscale Antenna Facility				167, 168 ✓		
Bldg 9314 Fullscale Munitions Storage				164 ✓		
Full Scale Target Maintenance Facility (9310)		165 ✓				
Subscale Launch Facility/Maintenance Facility		166 ✓				

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	GEN INFO	TECH INFO	ADMIN INFO	FAC CONST	HIST INFO	WRC CAP
Bldg 9310 Field Scale Maintenance Facility				167		
Bldg 8527 Subscale Launch Facility				168		
Bldg 8528 Subscale Launch Facility				168, 169		
Bldg 8527 Subscale Launch Facility				171		
Bldg 8526 Subscale Launch Facility				172		
Bldg 8525 Subscale Block House				172, 173		
Bldg 8522 Subscale Weight & Balance				173		
Bldg 8521 Subscale Explosive Storage				173, 174		
Bldg 8520 Subscale Drone Storage				174		
Bldg 8542 Subscale Power Facility				175		
Bldg 8540 Subscale Power Facility				175, 176		
Bldg 8533 Subscale Maintenance, Tank Shop				176		
Bldg 256 Subscale Drone Display Facility				177		
Bldg 239 Subscale Drone Test Cell				177, 178		
Gulf Range Drone Control Upgrade System (GNOCS)	181	184	187	183	185, 186	179

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475 WEG TYNDALL AFB

Department of Defense

1995 Base Realignment and Closure T&E Joint Cross-Service Group Data Guidance

March 31, 1994

T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

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1.1.A Guidance for Identification of Test and Evaluation (T&E) Facilities/Capabilities
1.1.B Guidance for Military Department Data Collection
1.1.C Guidance for Military Department Data Analysis
1.2 ASSUMPTIONS
1.3 FUNCTIONAL AREAS
1.3.A Air Vehicles
1.3.B Electronic Combat (EC) Systems
1.3.C Armaments/Weapons

SECTION 2: CAPACITY & TECHNICAL RESOURCES
2.1 WORKLOAD
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2.1.B Forecasted Workload
2.2 UNCONSTRAINED CAPACITY
2.3 TECHNICAL RESOURCES

SECTION 3: MEASURES OF MERIT
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3.1.B Facility Condition
3.1.C Environmental and Encroachment Carrying Capacity
3.1.D Specialized Test Support Facilities and Targets
3.1.E Expandability
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3.1.G Available Air, Land, and Sea Space
3.1.H Geographic/Climatological Features
3.2 AIR VEHICLES
3.2.A Supersonic Airspace
3.2.B Airfield and Facility Characteristics
3.2.C Test Operations
3.3 ELECTRONIC COMBAT
3.3.A Threat Environment
3.3.B Test Article Support

T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

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3.3.A Threat Environment
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.7?

3.4 ARMAMENTS/WEAPONS
3.4.A Directed Energy
3.4.B Rocket/Missile/Bomb Systems

T&E JOINT CROSS-SERVICE GROUP

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

The Military Departments will use the following information for data collection on each facility that has performed T&E and is still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons for any component (hardware or software), subsystem, system, or platform. Guidance is provided on conducting a cross-service analysis.

1.1 GUIDANCE

1.1.A Guidance for Identification of Test and Evaluation (T&E) Facilities / Capabilities

1.1.A.1 Scope

All DoD installations will be examined to identify facilities that have and are still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons.

All facilities (tenant and host on the installation) owned by DoD are within scope of this examination.

The Military Departments and Defense Agencies are responsible for submitting the data.

The scope of this examination will include T&E facilities that are funded from any funding source and appropriation (RDT&E, procurement, O&M, training, etc.).

1.1.A.2 T&E Facilities / Capabilities

The definition of a T&E facility/capability to be used for purposes of data collection will be a set of DoD-owned or controlled property (air/land/sea space) or any collection of equipment, platforms, ADPE or instrumentation that can conduct a T&E operation and provide a deliverable T&E product.

The T&E facility can support T&E of components through systems platforms or missions in the following functional areas: air, land, sea, space, C4I, armaments/weapons, electronic combat, nuclear effects, chem/bio, propulsion, environmental effects, guidance, and materials.

The T&E facilities will be grouped under one of the following test facility categories: modeling and simulation, measurement, integration laboratory, hardware-in-the-loop, installed systems, or open air (See Appendix A for definitions). It will typically consist of all of the following components: data collection sensors and instrumentation, data reception and storage, data processing, and data display and reporting.

The scope will include T&E operations from all funding sources (RDT&E, procurement, O&M, training, etc.).

1.1.B Guidance for Military Department Data Collection

The Military Departments will use the T&E facility/capability definitions included within this data call package. In your descriptions of facility technical capabilities include programmed investments/upgrades in Military Department or Defense Agency 1995 Future Years Defense Plan (FY95 FYDP) in support of the President's Budget (PB95). When calculating capacity data, use the guidelines/definitions included in this package.

Data will be collected on all facilities/capabilities that are within the scope defined in section 1.1.A. Data will be collected using Appendix A, Data Forms and Instructions

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1.1.C Guidance for Military Department Data Analysis

The Military Departments will use the 95 FYDP as the baseline to calculate costs and savings. Address closure/realignment opportunities at the functional T&E and facility levels. Retain essential technical capabilities for core competencies and technologies. Consider consolidation of subfunctions such as centralized maintenance of common platforms, instrumentation, data processing. Consider retention of difficult-to-replace essential geographic assets (e.g.; airspace, ground/terrain, climates, seaports) without regard to "ownership". Recognize adaptability to future technologies. Do not consider environmental cleanup costs/difficulties for closure or downsizing a facility/capability.

1.2 ASSUMPTIONS

Cross-service analyses will use the following assumptions:

1.2.A T&E workload is not a direct function of force structure, but is related to the RDT&E budget and acquisition funding.

1.2.B The FYDP is considered certified data. Information from non-DoD activities will not be used as a basis for analyses.

1.2.C At least one test facility/capability will be required to address any technology in use or nearing maturation. Geographic assets (airspace, ground space, sea space, terrain, climate, physical security) must be adequate. Closure or realignments of laboratories, maintenance depots, and training activities could necessitate consolidation with T&E facilities/capabilities.

1.2.D Evaluation of developing technologies and systems will follow a process that involves a progression of test facilities/capabilities ranging from modeling and simulation, measurements, through hardware-in-the-loop, system integration laboratories, installed-systems, to open air/range testing.

1.2.E Potential for internetting facilities/capabilities can be considered in workload projections if investments to provide internetting capability are programmed.

1.2.F With regard to outsourcing, it will be assumed that work currently performed in-house will remain in-house and that work currently outsourced will remain outsourced.

1.2.G With regard to foreign military sales (FMS), it will be assumed that the FMS workload will continue at FY93 levels into the future (straight-lined).

1.3 FUNCTIONAL AREAS

Three functional areas of T&E facilities/capabilities were selected for specific emphasis during cross-service analyses following analysis of the T&E Reliance study areas. These three areas -- air vehicles, electronic combat, and armament/weapons -- show the greatest potential for cross-service consolidation opportunities; others are predominately or nearly Military Department unique.

Over-arching measures of merit have been developed that are applicable to many T&E facilities/capabilities across the three functional areas. These measures generally relate to the overall demographics of the facility/capability at an installation and are important to evaluating a facility/capability for: overall condition; potential to support current or future contingency, mobilization and future missions; additional workload; and overall Mission Essentiality. Additional data specific to the three functional areas will also be collected. For the purpose of this data collection, the three functional areas are defined as follows:

1.3.A 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 sub-systems (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.

1.3.B Electronic Combat (EC) Systems

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.

1.3.C Armaments / 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.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

Use the forms and accompanying instructions in appendix A to provide answers for this section.

2.1 WORKLOAD

Annual workload will be reported in units as follows: for open air ranges involving flight testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions

must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

2.1.A Historical Workload

-2.1.A.1 What amount of workload have you performed each year from FY86-93? Use the Historical Workload Form provided in Appendix A of this package.

SEE HISTORICAL WORKLOAD FORM IN APPENDIX A

2.1.B Forecasted Workload

-2.1.B.1 Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP. The Military Departments will provide total funding amounts appropriated for all PEs identified in each functional area shown above.

FOR THE RADAR TEST FACILITY THE FOLLOWING APPROPRIATIONS:

FY 92	FY 93	FY 94	FY 95 FYDP
PE-64735F			
PE27597	PE64735F		
PE12897F	PE12897F	PE28015F	PE28015F
PE28015	PE65712	PE27597	
	PE41315		
	PE27597		

Test & Evaluation
Tyndall AFB, FL

PURPOSE: To document the answer to question:

-2.1.A.1 What amount of workload have you performed each year from FY86-93? Use the Historical Workload Form provided in Appendix A of this package.

SOURCE: 82 ATRS/LGL data base titled: Full Scale flying summary; OPR SSgt John Murdorf

METHOD: Extract from source document

CONCLUSION:

Test & Evaluation
Tyndall AFB, FL

PURPOSE: To document the answer to question:

-2.1.A.1 What amount of workload have you performed each year from FY86-93? Use the Historical Workload Form provided in Appendix A of this package.

SOURCE: 82 ATRS/LGS data base titled: Sub Scale flying summary; OPR Capt Zimmerman; TAFB Form 19

METHOD: Extracted from source document

CONCLUSION:

80B

PE28015

-2.1.B.2 What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

FUNCTIONAL AREA	FY 92	FY 93
AIR VEHICLES	17,784	17,784
ELECTRONIC COMBAT	936	936

TEST WORK IN WORK YEARS FOR FY92:

AIR VEHICLES = 8.55 WORK YEARS
EC = 0.45 WORK YEARS
TOTAL = 9.00 WORK YEARS

TEST WORK IN WORK YEARS FOR FY 93:

AIR VEHICLES = 8.55 WORK YEARS
EC = 0.45 WORK YEARS
TOTAL = 9.00 WORK YEARS

2.2 UNCONSTRAINED CAPACITY

-2.2.A Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.). Provide your response by filling out the Determination of Unconstrained Capacity Form in accordance with the instructions in Appendix A. (attached at end of document)

SUPPORTING FORMS ARE IN APPENDIX A

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

84 TS: YES - THE RADAR TEST FACILITY IS LIMITED BY UTILITY CAPACITY (60/400HZ) IN ADDITION TO AVAILABLE COOLING SYSTEM CAPACITY FOR AVIONICS EQUIPMENT. ALSO, THERE ARE NO SPARE EXTERNAL PORTALS FOR ADDITIONAL EQUIPMENT UNDER TEST.

83 FWS: YES - SPEED OF COMPUTERS LIMITS NUMBER OF MISSILES ANALYZED IN A GIVEN PERIOD OF TIME AND DEPTH OF ANALYSIS. E-9 AIRBORNE TELEMETRY GATHERING CAPACITY IS CONSTRAINED BY WEATHER AND UNREFUELED RANGE LIMITATIONS.

82 ATRS: SUBSCALE TESTING WILL CERTAINLY BE LIMITED BY THE SIZE OF THE FACILITIES. EACH BUILDING WITHIN THE SUBSCALE ARENA IS CAPABLE OF HANDLING JUST SO MANY DRONES AND ASSOCIATED CONTAINERS, DEPENDING ON WHICH DRONE SYSTEMS BQM-34A OR MQM-107D ARE MAINTAINED. APPROXIMATELY 10 TO 15 DRONES CAN BE PUT INTO THE MAINTENANCE BUILDING AND AN EQUAL NUMBER IN THE STORAGE BUILDING AT THE LAUNCH PAD. FULL SCALE TARGET LIMITATION IS BASED ON THE LENGTH OF THE DRONE RUNWAY; CONVENTIONAL LAUNCH AND RECOVERY IS RESTRICTED TP THOSE AIRCRAFT THAT CAN BE SAFELY MANAGED ON THE 7500 FEET LENGTH.

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.

YES, THE WETSTONE CONTROL FACILITY AND AN/FPS -64 RADAR IS TASKED TO SUPPORT DEPLOYED WEAPONS DIRECTOR (DWD) OPERATIONS DURING WARTIME AND CONTINGENCY OPERATIONS UNDER THE SOUTHEAST AIR DEFENSE SECTOR ANNEX TO THE CONUS NORTH AMERICAN AEROSPACE DEFENSE COMMAND REGION (OPLAN) 3200-95 (S). DWD OPERATIONS ARE A REQUIREMENT UNDER THE HQ NORAD OPLAN 3200-95 (S). THE 82 ATRS WILL PROVIDE RECONNAISSANCE UPON REQUEST.

-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, THE HOST UNIT HAS NO T & E MISSION

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

YES; AFDTC, EGLIN AFB AND THE USAF AIR WARFARE CENTER. THE WEG PROVIDES THE AERIAL TARGET SUPPORT FOR THE DEVELOPMENTAL AND OPERATIONAL TESTS. THE E-9A SUPPORTS NAVY TOMAHAWK TESTING ON THE GULF RANGE AS WELL AS OTHER USERS NEEDING OVER THE HORIZON TELEMETRY DATA COLLECTION (AFOTEC AND ARMY PATRIOT PROGRAMS). WITHOUT THE RADAR TEST FACILITY'S INPUTS TO THE F-15/F-16 RADAR OPERATIONAL FLIGHT PROGRAM (OFP) PROCESS, THE AMOUNT OF AIRBORNE TESTING REQUIRED WOULD INCREASE BY 3.6 TIMES TO ACCOMPLISH THE TEST EVENTS COMPLETED AT THE RTF.

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

YES; COMBAT AIR FORCES COMBAT READINESS FOR AIR-TO-AIR ENGAGEMENTS. THE WEAPONS SYSTEMS EVALUATION PROGRAM FOR THE CAF IS CONDUCTED BY THE 475 TH WEG; DATA GOES INTO THE AA DATABASE FOR DETERMINING WAR RESERVES. IN ADDITION THE 81ST RANGE CONTROL SQUADRON PROVIDES F- 15 INITIAL AND MISSION QUALIFICATION TRAINING, WEAPONS CONTROLLER TRAINING AND AIR COMBAT TRAINING OF VISITING WSEP FIGHTER UNITS.

SECTION 3: MEASURES OF MERIT

This section relates the measures of merit and the required data to the four criteria that have been established for Military Value. The four military value (MV) criteria are:

CRITERION 1: The current and future mission requirements and the impact on operational readiness of the Department of Defense's total force.

CRITERION 2: The availability and condition of land, facilities and associated airspace at both the existing and potential receiving locations.

CRITERION 3: The ability to accommodate contingency, mobilization, and future total force requirements at both the existing and potential receiving locations.

CRITERION 4: The cost and manpower implications.

3.1 OVER-ARCHING MEASURES OF MERIT

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The over-arching measures of merit are listed with accompanying questions (or data requirements) intended to elicit standard information upon which the cross-service analyses can be based, and on which the Joint Cross-Service Groups can base their reviews of the Military Department analyses. Additional specific measures of merit are shown under individual functional areas. The numbers in parentheses () before each measure of merit indicate the BRAC selection criteria for military value.

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 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 and external to the site.

PERCENTAGE DATA NOT RECORDED. ALL AIR/AIR WSEP MISSIONS REQUIRE REAL TIME DATA TRANSMISSIONS. IF THE TARGET PRESENTATIONS ARE BEING MADE FOR AFDTC, DATA IS RELAYED OVER A MICROWAVE COMMUNICATIONS SYSTEM REAL-TIME. FURTHER, POST MISSION (ANALYZED) DATA CAN BE TRANSMITTED OVER THE SAME LINK IN EITHER DIRECTION (TO OR FORM AFDTC). THE INTERNAL (INTRA-SITE) CONNECTIONS ARE BETWEEN THE RTF AND THE MISSILE ANALYSTS AND BETWEENGRDCUS AND THE RANGE CONTROL SYSTEM. THE REMAINDER OF THE FACILITIES ARE EXTERNALLY CONNECTED VIA RADIO, FIBER OPTICS, AND WIRE.

-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.

YES. EACH OF THE 475TH WEG FACILITIES IS A COMPLEMENT TO

THE OTHERS. FOR EXAMPLE, CLOSURE OF THE DRONE CONTROL FACILITY REMOVES AERIAL TARGET SUPPORT FROM EGLIN AND TYNDALL AGENCIES ALONG WITH POSITIONAL DATA OF THE MISSION PARTICIPANTS. CLOSING THE RADAR TEST FACILITY REQUIRES THE OPERATIONAL TESTING OF THE AIRCRAFT RADARS AT SOME OTHER LOCATION; CLOSING THE FULL SCALE OR SUBSCALE AERIAL TARGET FACILITIES NEGATES THE NEED FOR MANY OF THE OTHER FACILITIES. A CLOSURE OF TYNDALL AS A WHOLE WOULD REQUIRE REPLICATION OF THE CAPABILITY AT ANOTHER LOCATION OR THE USAF WEAPONS SYSTEM EVALUATION PROGRAM WOULD CEASE. IF AIRCRAFT EQUATES TO FACILITY, THEN CLOSURE WOULD REQUIRE THAT GCI BE PROVIDED FROM SOME OTHER SOURCE; THE 81ST RANGE CONTROL SQUADRON IS THE ONLY GCI CAPABILITY AUTHORIZED FOR LIVE FIRINGS AT TYNDALL AFB.

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.

SEE FORM IN APPENDIX A

3.1.C Environmental and Encroachment Carrying Capacity (MV II) - Measure of Merit: *Extent of current and future potential environmental and encroahment impacts on air,land, amd seaspacefor testing.*

3.1.C.1.. Do you have limiting (current or future) environment and/or encroachment
charachteristics associated with the installation/facility?
Yes/no. If yes, explain.

NO RESTRICTIONS AT PRESENT. A NEW REQUEST FOR

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ENVIRONMENTAL ASSESMENT, AF FORM 813 WAS SUBMITTED TO AFDTC, EGLIN AFB ON 10 MARCH, 1994. AFDTC IS THE CONTROLLING AUTHORITY FOR THE TEST AND EVALUATION RANGES USED BY TYNDALL.

- 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.

N/A.

- 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.

NO

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

50 MILES : 181,000;
100 MILES: 937,200;
150 MILES: 2,067,700;
200 MILES: 3,914,100

- 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.

JET AIRWAY J-58-86 AND GULF ROUTE 26 ARE USED ON A DAILY BASIS. STATE HIGHWAY 98 IS USED ON A DAILY BASIS. SEA AREAS UNDER WARNING AREAS W-151 AND W-470 ARE USED ON A DAILY BASIS BY COMMERCIAL AND RECREATIONAL FISHERMEN AND COMMERCIAL SHIP TRAFFIC TO PORTS IN THE NORTHERN GULF OF MEXICO. AIR ROUTES MAY BE CLOSED FOR UP TO

FOUR HOURS FOR TEST ACTIVITIES. STATE HIGHWAYS MAY BE CLOSED FOR PERIODS DURING TEST ACTIVITIES. SEA AREA IS SUFFICIENTLY LARGE TO PERMIT POSITIONING THE TEST ACTIVITY TO AVOID SURFACE TRAFFIC.

- 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 KNOWN

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 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.
FOR GCI: FPS FAA RADAR LOCATED IN BUILDING 1280, AND VARIOUS UHF VOICE TRANSMITTERS AND RECEIVERS LOCATED WITHIN BUILDINGS 1801, 1277,503, 649, AND GATR SITE

FOR FULL SCALE TARGETS: BLDG 9310 IS USED TO REPAIR ALL ASPECTS OF THE DRONED AIRCRAFT INCLUDING ENGINE

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CORROSION, AVIONICS/ELECTRONICS COMPONENTS, SHEET METAL AND HYDRAULICS, INCLUDING TWO LEVEL MAINTENANCE FUNCTION; IN ADDITION, THE DRONE RUNWAY CARRIES FACILITY NUMBER 9301 AND IS A 7500 FOOT DEDICATED RUNWAY IN A REMOTER AREA FOR UNMANNED OPERATIONS.

FOR SUB SCALE TARGETS: EXPLOSIVE STORAGE IGLOO AND BLDG FOR STORAGE EXPLOSIVE (IGNITOR). THE IGLOO IS USED TO STORE THE ROCKET ASSIST TAKEOFF (RATO) BOTTLES. THESE ASSETS ARE USED TO PROPEL THE BQM-34A AND MQM-107D SUB SCALE AERIAL TARGET FROM THE LAUNCH PADS. THE RATO BOTTLES ARE CRITICAL TO LAUNCHING THE DRONES ARE KEPT IN A SECURE AREA. THE IGNITORS ARE STORED IN A SEPARATE BLDG WITHIN THE SAME SECURED AREA AS THE IGLOO. BOTH STORAGE SHELTERS ARE READILY FOR USE BY THE CONTRACTORS FOR LAUNCH PREPARATION

DRONE LAUNCH FACILITY
BLDG 8525 IS THE DRONE LAUNCH BLOCKHOUSE WHICH IS NEAR THE LAUNCH RAILS PROVIDING THE NECESSARY PROTECTION AND IMPORTANT VIEW OF THE DRONES TO THE LAUNCH PERSONNEL. VIDEO OF EACH LAUNCH IS DONE DURING EACH DRONE LAUNCH.

SUB SCALE DRONE REPAIR FACILITY
BLDG. 256 IS THE FAULTY WHICH HOUSES THE ENGINE REPAIR, AIRFRAME REPAIR AND AUGMENTATION PODS USED TO ENHANCE SWEPT REQUIREMENTS. THE AVIONICS SHOP IS ALSO IN BLDG. 256 AND IS USED TO PERFORM ALL ACCEPTANCE CHECKOUT AND PREFLIGHT CHECKS ON THE DRONES PRIOR TO THEM BEING SENT TO THE LAUNCH FACILITY. COMPLETE DOCKING FACILITIES FOR MAINTAINING AND DEPLOYING THREE 120 FEET RECOVERY BOATS FOR SUBCLASS WHICH TERMINATE FLIGHT OVER THE GULF OF MEXICO. THREE WATER RECOVERY

BOATS PLUS A FLEET OF SMALLER CRAFT FOR CLEARING LAUNCH AREAS.

CONTRACTOR PERSONNEL ARE RESPONSIBLE TO MAINTAIN A THREE MILE SQUARE FIELD TO RECOVER SUB SCALE AERIAL TARGETS. THIS AREA PROVIDES THE AIR FORCE WITH A CHEAPER MORE ECONOMICAL METHOD OF DRONE RECOVERY THAN TO DO SO BY WATER. RECOVERY AREA HAS ITS OWN WIND MEASURING EQUIPMENT ENSURING A SAFE AND ON TARGET RECOVERY SYSTEM.

TARGET CONTROL SYSTEM: SPECIALIZED FACILITIES INCLUDE THE BACKUP POWER GENERATION CAPABILITY IN BLDG 1282 (330 KILOVOLT-AMPERES BATTERY BACKUP PLUS 300 KILOWATT DIESEL GENERATOR) PLUS THE MULTILATERATION SITES INSTALLED ALONG THE COASTLINE.

RADAR TEST FACILITY: FOR EACH WEAPON SYSTEMS THAT WE TEST WE MUST HAVE ACCESS TO THE APPROPRIATE MAINTENANCE FACILITIES: AVIONICS INTERMEDIATE SHOPS FOR RADAR AND AVIONICS, MISSILE MAINTENANCE AND DIAGNOSTICS CAPABILITIES FOR THE AIM-7S AND AMRAAM. ALSO, THE SPECIAL DEVICES FLIGHT SUPPORTS THE RTF BY FABRICATING RADAR BENCHES AN UNIQUE ITEMS REQUIRED FOR TESTS. SPECIAL DEVICES ALSO PROVIDES ENGINEERING DRAWINGS AND BUILDS CIRCUIT CARDS THAT SUPPORT RTF EQUIPMENT.

MISSILE ANALYSIS AND DATA COLLECTION: TELEMETRY (TM) SYSTEMS: TM SYSTEMS AT TYNDALL AFB RECEIVE, DEMODULATE, AND RECORD VARIOUS FORMS OF TM DATA FROM INSTRUMENTED MISSILES, DRONES, AND AIRCRAFT ON THE GULF RANGE. LIVE-FIRING WEAPON SYSTEM EVALUATION PROGRAM MISSIONS CONSTITUTE THE MAJORITY OF

INSTALLATION WORKSHEET
Test & Evaluation
Tyndall AFB, FL

PURPOSE: To document the answer to question:

-3.1.D.2 Are specialized targets required to support this facility? Yes/no. If yes, explain.

SOURCE: USAF Program Management Directive for Aerial Targets, PMD 8051(19)/PE0604211F/0604258F/0305116F, 18 Apr 1994

METHOD: Conclusion extracted from executive summary and paragraph I.A.2. of source document.

CONCLUSION: Yes. The 475th WEG at Tyndall maintains aerial targets for the USAF and USA by direction of Air Combat Command in support of the referenced PMD.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Date 09/15/94

Brett A. Master, Captain, 475 TSS/ESF, 523-3750
Typed Name, Rank, Office Symbol, DSN Number

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Date 9/19/94

Eugene A Thies ACC/CEPR 574-3187
Typed Name, Rank, Office Symbol, DSN Number

Retain through
Year 2005

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

DATE: 1 8 APR 1994

PMD 8051(19)/PE0604211F/0604258F/0305116F
Program Management Directive for
AERIAL TARGETS

EXECUTIVE SUMMARY: This PMD supersedes PMD 8051(18), 31 July 1993, and provides direction for development and procurement of aerial targets and related systems in accordance with Integrated Weapon System Management (IWSM). Full scale and subscale targets are remotely controlled aerial vehicles which provide threat-representative targets for air-to-air missile development, operational tests and evaluations, the USAF Air-to-Air Weapon System Evaluation Program, and the Fighter Weapons Instructor Course missile firing program. Related systems developed under this program include radar and infrared augmentation for subscale targets to provide more realistic threat signature representations, electronic and infrared countermeasures, survivability enhancements, scoring subsystems, and target control systems.

PROGRAM TYPE: ACQUISITION
ACQUISITION CATEGORY: See Appendices
PROGRAM PHASE: See Appendices
MDA: DAC

PROGRAM OFFICER:
Lt Col Loverro, SAF/AQPT, DSN 227-3630
SYSTEM PROGRAM DIRECTOR:
Lt Col Sanders, ASC/YOT, DSN 872-4242
DAC:
Lt Gen Fain, ASC/CC, DSN 785-5714
PROGRAM MONITORS:
Maj Stocking, AF/XORS, DSN 223-8308
Maj Callahan, AF/TEP, DSN 225-0900
Maj Robinson, AF/TER, DSN 223-6597
Maj Topp, AF/XOFW, DSN 225-7003

COMMANDS:
IMPLEMENTING: AFMC-ASC
SUPPORTING: AFMC - WRALC, OOALC, SAALC, OC-ALC, SMALC AMARC, AFDTC
OPERATING: ACC
OT&E: AFOTEC and ACC

DOCUMENTS: **DATE:**
MNS: TAF SON 408-82 Validated May 84
CRD: See Appendices

NOT RELEASABLE OUTSIDE DoD
Unless Sanitized or Approved by SAF/AQPT

91b.

I. PROGRAM INFORMATION:

A. TECHNICAL OBJECTIVES: The Aerial Targets program provides cost-effective, expendable test resources which represent classes of airborne threat vehicles. Auxiliary systems are developed and integrated as required to ensure a complete mission capability in support of DoD test and evaluation efforts. To meet the conflicting goals of realism and affordability, program participants must maintain awareness of developments in related technology areas, to include surface targets, modeling and simulation, threat simulators, unmanned aerial vehicles, aerial decoys, and major test range capabilities. Interfaces with other services increase DoD commonalty and interoperability.

1. This PMD directs development and acquisition to meet Air Force requirements for aerial targets, subsystems, and payloads which represent threat aircraft and missile systems. Aerial targets must be suitable to adequately evaluate capabilities of air-to-air and surface-to-air missiles and launch platforms.

2. The foremost requirement for aerial targets is for development and operational tests in support of specific aircraft and missile development programs. However, the larger usage of targets for missile firings is for the USAF Air-to-Air Weapon System Evaluation Program (WSEP), which conducts a continuing evaluation of operational weapon systems -- total, integrated systems including aircraft, delivery system, missile, maintenance, and crew. In addition, aerial targets support exploratory missile firings to determine actual missile performance at the edge of published performance envelopes. These exploratory firings also offer opportunities for tactics evaluation and provide pilots with live firing experience.

3. Aerial targets requirements are stated in paragraph I.B. The Aerial Targets program currently includes full scale and subscale targets, target control systems, and towed targets. Full scale targets, which are retired aircraft modified for remote control, provide the most realistic threat representation with the additional advantage of significant capacity to carry infrared and electronic countermeasures systems. Subscale targets supplement the full scale targets and provide a cost-effective target for missile firings which do not require the high fidelity of a full scale target. Target control systems provide command and control of ground, air, and sea surface targets. Towed targets are used to evaluate gunnery weapon systems and to provide realistic air-to-air gunnery training. The Air Force is lead service for DoD full scale aerial targets and target control systems. The feasibility of a new, midscale target class was evaluated and the results will be used to start the evaluation of the follow-on full scale.

B. REQUIREMENTS DOCUMENTS: The documents listed below define requirements placed on the program. Use the latest update when available.

1. TAF SON 408-82, Aerial Targets, validated 24 May 84.

2. TAF 408-82-I/II/III-A, System Operational Requirements Document (SORD) for Full Scale Aerial Targets (FSAT) (QF-106), 3 May 89, updated 22 Mar 90.

9/c

OPERATIONS SUPPORTED BY THESE SYSTEMS. THE SERVICE PROVIDED INCLUDE MONITORING OF MISSILE CONDITION FOR SAFETY BEFORE LAUNCH FROM THE AIRCRAFT, COLLECTION OF PERFORMANCE DATA DURING MISSILE FLIGHT, AND COLLECTION OF SCORING DATA FROM APPROPRIATELY INSTRUMENTED AERIAL TARGETS. ALTHOUGH AIR FORCE MISSIONS GENERATE THE LARGEST REQUIREMENT FOR TELEMETRY SERVICES, INTERSERVICE MISSION ASSISTANCE CAN BE PROVIDED TO THE LIMITS OF PARTICIPANT INSTRUMENTATION. 83 COMBAT MUNITIONS UNIT (CMU): NINETY PERCENT OF THE AIR-TO-AIR MISSILES USED DURING WSEP AND OTHER MISSILE TESTS AT TYNDALL AFB ARE INSTRUMENTED WITH MISSILE TM PACKAGES. THE PRIMARY REASON FOR THIS MISSILE INSTRUMENTATION IS TO DIAGNOSE FAULTS IN THE CASE OF A "BAD" MISSILE SHOT. THESE MISSILE TM PACKAGES REPLACE THE STANDARD MISSILE WARHEAD WITHIN THE MISSILE CONFIGURATION, LEAVING THE INTRUMENTED MISSILE WITHOUT AN EXPLOSIVE CHARGE. THE TM PACKAGE MONITORS AIRCRAFT SIGNALS TO THE MISSILE, AS WELL AS INTERNAL MISSILE PARAMETERS. THESE DATA ARE COLLECTED PRIOR TO LAUNCH AND DURING MISSILE FLYOUT AND SENT VIA TM TO THE GROUND RECEPTION SITE (E-9A AIRBORNE PLATFORM/TMF) FOR SUBSEQUENT MISSILE TM REDUCTION.

-3.1.D.2 Are specialized targets required to support this facility? Yes/no. If yes, explain.

See p. 91a - 91c.

YES.
THE 475 WEG AT TYNDALL MAINTAINS AERIAL TARGETS FOR THE USAF AND USA BY DIRECTION OF AIR COMBAT COMMAND IN SUPPORT OF THE REFERENCED PMD.

-3.1.D.2.A Have the specialized targets been validated? Yes/no. If yes, by whom?

AERIAL TARGETS HAVE BEEN PARTIALLY VALIDATED BY THE DEFENSE INTELLIGENCE AGENCY. COL SANDERS INDICATED THAT AN INITIATIVE HAS BEEN STARTED BY AFDTC TO PURSUE FULL VALIDATION OF THE FULL SCALE AERIAL TARGETS. BUT THE PROGRAM IS STILL IN ITS INFANCY.

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 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.

YES.
THE RADAR TEST FACILITY HAS A BUILDING EQUIPPED WITH A CONFERENCE ROOM AND FIVE OFFICES CLEARED FOR TOP SECRET/SAR, TWO RF SHIELDED ENCLOSURES CLEARED FOR SECRET/SAR, A REMOTE VAULT CLEARED FOR TOP SECRET/SAR, AND SEVERAL AREAS CLEARED FOR DEALING WITH SECRET MATERIALS. THE E-9A AIRCRAFT ENABLE EXPANSION INTO AREAS BEYOND THE LINE OF SIGHT OF SHORE BASED FACILITIES FOR TELEMETRY DATA COLLECTION AND THE GRDCUS, WHEN AUGMENTED BY THE MU-2 RELAY AIRCRAFT, CAN CONTROL TARGETS BEYOND THE RADIO HORIZON OF GROUND FACILITIES

-3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

YES, CONDITIONALLY

THE RADAR TEST FACILITY INDICATES A NEW OR DIFFERENT WORKLOAD IS POSSIBLE OTHER THAN THE AIR VEHICLES OR ELECTRONIC COMBAT; THE E-9A ALREADY SUPPORTS THE THREE AREAS OF TESTING; THE GCI FACILITY IS SPECIALIZED TO THE EXTENT THAT IT CAN SUPPORT ANY OF THE THREE AREAS AS LONG AS IT'S GCI; THE 83D MISSILE ANALYSTS SIMILARLY SUPPORT THE AREAS SPECIFIED ALTHOUGH THE DATA COLLECTION IS ORGANIZED IN SUPPORT OF THE AIR/AIR WEAPONS EVALUATION PROGRAM. THE 82ND ATRS WILL PROVIDE TARGETS TO ANY LEGITIMATE USER WITHOUT REGARD TO THE T&E TYPE OF MISSION.

-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.

EGLIN WATER TEST AREAS MAY BE EXPANDED INTO THE GULF OF MEXICO TO SUPPORT AN EXPANDED FOOTPRINT FOR MISSILE LAUNCHES.,

-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, BUT DEPENDS UPON THE MISSION TYPE. THE RADAR TEST FACILITY HAS THE FOLLOWING: THE FACILITY HAS A BUILDING EQUIPPED WITH A CONFERENCE ROOM AND FIVE OFFICES (BLDG 1818) CLEARED FOR TOP SECRET/SAR, TWO RF SHIELDED ENCLOSURES CLEARED FOR SECRET/SAR, A REMOTE VAULT

CLEARED FOR TOP SECRET/SAR, AND SEVERAL AREAS CLEARED FOR DEALING WITH SECRET MATERIALS THE MISSILE ANALYSIS FACILITY IS RATED FOR CLASSIFICATION LEVEL (C-S), NATO SECRET). THE DRONE CONTROL FACILITY IS CURRENTLY RATED FOR SECRET BUT IS INSTALLED WITHIN A SHIELDED FACILITY.

-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.

NO

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
THE RADAR TEST FACILITY IS THE ONLY DOD FACILITY HAVING OPERATIONALLY FIELDED/MAINTAINED F-15, F-16, FOREIGN RADAR ASSETS, AND ELECTRONIC COMBAT SYSTEMS.
NO OTHER US GOVERNMENT FACILITY OR OTHER COMPANY WITHIN THE US CONTAINS THE ACTUAL OPERATIONALLY FIELDED SYSTEMS, ALONG WITH ASSOCIATED AVIONICS EQUIPMENT AND MISSILES, AND MAINTAINED BY FLIGHTLINE TECHNICIANS. THE RTF'S MISSION DICTATES OPERATING AND MAINTAINING ALL SYSTEMS AS THEY ARE FOUND IN THE FIELDED INVENTORY. THE ONLY TWO E-9A AIRCRAFT ARE HERE. THE 82D ATRS MAINTAINS THE ONLY DEPOT REPAIR FACILITY IN THE USAF FOR REFURBISHING WATER-RECOVERED SUBSCALES. THE GULF RANGE DRONE CONTROL UPGRADE SYSTEM ONLY EXISTS AT TYNDALL BY THE ORIGINAL DEFINITION ALTHOUGH

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THERE ARE SIMILAR SYSTEMS FOR DEVELOPMENT AT EGLIN AND THE ARMY HAS A SIMILAR SYSTEMS THAT IS OPERATIONAL AT THE WHITE SANDS MISSILE RANGE. TECHNICALLY SPEAKING THERE IS ONLY ONE USAF AIR TO AIR WEAPONS SYSTEMS EVALUATION PROGRAM WITHIN DOD WHICH MAKES THIS UNIQUE. HOWEVER, THERE ARE OTHER WSE PROGRAMS WITHIN DOD.

-3.1.F.1.A Within the US Government? Yes/no. If yes, describe.

YES
THE RADAR TEST FACILITY IS THE ONLY DOD FACILITY HAVING OPERATIONALLY FIELDED/MAINTAINED F-15, F-16, FOREIGN RADAR ASSETS, AND ELECTRONIC COMBAT SYSTEMS. NO OTHER US GOVERNMENT FACILITY OR OTHER COMPANY WITHIN THE US CONTAINS THE ACTUAL OPERATIONALLY FIELDED SYSTEMS, ALONG WITH ASSOCIATED AVIONICS EQUIPMENT AND MISSILES, AND MAINTAINED BY FLIGHTLINE TECHNICIANS. THE RTF'S MISSION DICTATES OPERATING AND MAINTAINING ALL SYSTEMS AS THEY ARE FOUND IN THE FIELDED INVENTORY.

-3.1.F.1.B Within the US? Yes/no. If yes, describe.

YES
- THE RADAR TEST FACILITY IS THE ONLY DOD FACILITY HAVING OPERATIONALLY FIELDED/MAINTAINED F-15, F-16, FOREIGN RADAR ASSETS, AND ELECTRONIC COMBAT SYSTEMS. NO OTHER US GOVERNMENT FACILITY OR OTHER COMPANY WITHIN THE US CONTAINS THE ACTUAL OPERATIONALLY FIELDED SYSTEMS, ALONG WITH ASSOCIATED AVIONICS EQUIPMENT AND MISSILES, AND MAINTAINED BY FLIGHTLINE TECHNICIANS. THE RTF'S MISSION DICTATES OPERATING AND MAINTAINING ALL SYSTEMS AS THEY ARE FOUND IN THE FIELDED INVENTORY.

- THE WEG HAS THE ONLY GCI UNIT TRAINED TO SUPPORT THE WEAPONS SYSTEMS EVALUATION PROGRAM

-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 FY93 by Military Department.

YES.

PERCENTAGES DEPEND UPON WHICH UNIT IS REPORTING THE STATISTIC. THE OVERALL RECORDS DO NOT REVEAL THE GROUP PERCENTAGES. THE RADAR TEST FACILITY REPORTS FY92 APPROXIMATELY 10% OF ITS WORKLOAD SUPPORTED THE US ARMY AND 8% SUPPORTED THE US NAVY. FY93 APPROXIMATELY 12% OF ITS WORKLOAD SUPPORTED US NAVY. THE 83RD MISSILE ANALYSIS REPORT DOCUMENTS 4 % IN SUPPORT OF THE CIVILIAN COMMUNITY, 2% NAVY, 0.5% ARMY, AND 0.5% OTHER. DETACHMENT 1 OF THE 82 ATRS REPORTS IN EXCESS OF 90% FOR THE ARMY SINCE IT IS LOCATED AT HOLLOMAN AFB SPECIFICALLY FOR THAT PURPOSE. THE "OTHER" ABOVE INCLUDES SECURITY ASSISTANCE PROGRAMS SANCTIONED BY DOD (CANADA, UK, SINGAPORE ET AL)

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?

SUA	AREA (SQ NM)

R-2905	24	59 sqnm *1.324 = sq sm
R-2905	35	
W-151	9,690	4,174 sqnm
W-470	5,516	
	15,265	

-3.1.G.2 Who owns and or controls the land under the restricted airspace you use?

US GOVERNMENT, TYNDALL AFB FLORIDA

-3.1.G.3 How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

R2905A SURFACE TO 10,000FT
R2905B SURFACE TO 10,000FT

-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)? Dimensions? Will it support simultaneous users? Yes/no.

YES.,TESTING OF CONVENTIONAL AIR ARMAMENT, LAUNCH OF SURFACE-TO-AIR AND AIR-TO-AIR MISSILES, AND LAUNCH AMD RRECOVERY OF DRONES. DIMENSIONS LISTED BELOW. YES,IT WILL SUPPORT SIMULTANEOUS USERS.

SPECIAL USE AIRSPACE	AREA (SQ NM)	ALTITUDE
R-2905A	24	SURFACE TO 10000FT
R-2905B	35	SURFACE TO 10000FT
W-151	9690	SURFACE TO UNLIMITED
W-470	5516	SURFACE TO UNLIMITED

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

SUA	AREA (SQ NM)	ALTITUDE
W-151	9,690	SURFACE TO UNLIMITED
W-470	5,226	SURFACE TO UNLIMITED

OVER LAND AND WATER:

R-2905A	24	SURFACE TO UNLIMITED
R-2905B	35	SURFACE TO UNLIMITED

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

THE PROBLEM STATED BELOW IS A FACTOR FOR SUPPORT OF DISSIMILAR AIR COMBAT TRAINING MISSIONS (DACT) BETWEEN THE HOST TRAINING WING AND WSEP UNITS. DUE TO THE LIMITED RADAR AND RADIO COVERAGE OF TYNDALL GCI UNITS, SPECIFICALLY THE 81 RCS WETSTONE CONTROL, THE 83 FWS AND THE 81 RCS WILL PARTICIPATE IN DACT MISSIONS OCCURRING IN LANES 1 AND LANE 2 ONLY. IN LANE 2, WETSTONE WILL PROVIDE CONTROL WHEN AIRCRAFT ARE WITHIN THE W-470 COMPLEX. WHEN AIRCRAFT ENTER NOVE AIRSPACE, THEY WILL BE AUTONOMOUS DUE TO INSUFFICIENT COVERAGE. THE PORTION OF W-470B AND C, HIGH ALTITUDE, WITHIN LANE 3 WILL BE USED FOR AIRCRAFT HOLDING.

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

SPECIAL USE AIRSPACE	MAXIMUM STRAIGHT LINE DISTANCE
W-151	385 NM
W-470	95 NM

-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.

J58-86, GULF ROUTE 26, A509, AND A758 IN THE GULF OF MEXICO. TESTS CONDUCTED ARE LONG RANGE MISSILE AND HIGH SPEED TARGETS. THIS AIRSPACE SHOULD BE AVAILABLE FOR SIMILAR TESTS IN THE FUTURE.

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/riverine, desert, and sea. State the area of each in square miles.

TOPOGRAPHER AND GROUND COVER WITHIN TEST AIRSPACE CONSISTS OF COASTLINE (FLORIDA PANHANDLE) AND WATER (GULF OF MEXICO). THE NUMBER OF SQUARE MILES OF AIRSPACE OVER LAND AND WATER ARE 59 AND 15206, RESPECTIVELY. RESPONSES TO QUESTIONS INSPECTION 3.1.G MAT PROVIDE ADDITIONAL INSIGHT.

-3.1.H.2 Are there features of the local geology or soil conditions that enhance

or inhibit any types of test?

NO. THE ONLY SOIL FEATURE CONSIDERED FOR THE A/A ENGAGEMENTS IS THE PLOWED RECOVERY AREA FOR SUBSCALE DRONES; SOFT SOIL IS DESIRED FOR LAND RECOVERIES TO PREVENT DAMAGE TO THE TARGET WHEN IT PARACHUTES TO LAND.

-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.

OFF BASE EVALUATIONS WERE CONDUCTED AT THE WHITE SANDS MISSILE RANGE AND ROOSEVELT ROADS, P.R. THE STATISTICS INDICATE THAT APPROXIMATELY 3.1% WERE CONDUCTED AT OFF-SITE LOCATIONS.

-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?

BELOW 32 DEGREES	32 - 95 DEGREES	ABOVE 95 DEGREES
9 DAYS	352 DAYS	4 DAYS

-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%?

HUMIDITY BELOW 30%	HUMIDITY BETWEEN 30% - 80%	HUMIDITY ABOVE 80%
5 DAYS	199 DAYS	161 DAYS

-3.1.H.6 What is the number of test missions per year (1985 - 1993) canceled due to weather?

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INSTALLATION WORKSHEET; ADDENDUM
Test & Evaluation
Tyndall AFB, FL

PURPOSE: To provide a statement of additional information pertaining to the previously submitted answer to BRAC 95 T&E JCSG question 3.1.H.7 - What is the number of test days per year (1985 - 1993) canceled due to weather?

SOURCE: Personal knowledge.

METHOD: Personal knowledge.

CONCLUSION: No full days canceled due to weather.

ADDITIONAL INFORMATION: The previous worksheet was prepared and signed by Lt Gary Rose, WSEP mission scheduler. Lt Rose's original response is stated above under CONCLUSION. Not included in this response is the information that data documenting the number of test days per year canceled due to weather is maintained for the current year and the previous year only. Data for the number of days lost due to weather for the years 1985 through 1992 is no longer available.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

B A Master **Date** 09/15/94

BRETT A. MASTER, Captain, 475TSS/ESF, 523-3750
Typed Name, Rank, Office Symbol, DSN Number

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

James C. Morgan **Date** 20 Sep 94

JAMES C. MORGAN, CMSgt, HQ ACC/LGPA, 574-4810
Typed Name, Rank, Office Symbol, DSN Number

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INSTALLATION WORKSHEET; ADDENDUM
Test & Evaluation
Tyndall AFB, FL

PURPOSE: To provide a statement of additional information explaining the source and method of extraction cited in previously submitted answer to the BRAC 95 T&E JCSG question 3.1.H.9 - What is the average number of flying days available per year for flight test?

SOURCE: Personal knowledge.

METHOD: Deductive logic.

CONCLUSION: Previous worksheet submitted was prepared and signed by Lt Gary Rose, WSEP Mission Scheduler. Lt Rose's original response to 3.1.H.9 concluded, on the average, 355 flying days per year were available for flight test. The source of information cited was "personal knowledge" based upon his duties and experience as range scheduler for the 475 WEG and WESP missions. The method of extraction cited was also "personal knowledge."

Additional Information: The exact method Lt Rose used to arrive at his response is unknown (he is unavailable; at survival training). By deductive reasoning, the logical explanation is as follows:

365 -- average total number of days available per year
- 10 -- number of annual Federal holidays (based on Federal holiday no work assumption)
355 -- average number of days available less holidays
- 0 -- average number of days lost due to weather (see note below)
355 -- average number of days available less days lost for weather
- 0 -- average number of days not available for other known reasons
355 -- average number of days available per year for flight test

Note: The average number of days lost due to weather is recorded in 3.1.H.7 and reflects data for the current year and previous year as data is maintained for only the past two years. Data for the number of days lost due to weather for the years 1985 through 1992 is no longer maintained. No days are subtracted to account for weekend days as weekend days (as well as the federal holidays) could be used for flight test if the test priority dictates.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

BA Master Date 09/15/94
BRETT A. MASTER, Captain, 475 TSS/ESF, 523-3750
Typed Name, Rank, Office Symbol, DSN Number

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

James C. Morgan Date 21 Sep 94
JAMES C. MORGAN, CMSgt, HQ ACC/LGPA, 574-4810
Typed Name, Rank, Office Symbol, DSN Number

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THE REQUESTED INFORMATION IS MAINTAIN ONLY FOR THE PAST TWO YEARS INCLUSIVE. THEREFORE, ONLY DATA FOR 1993 AND 1994 ARE ON FILE. THOSE DATA FOR MISSIONS LOST DUE TO WEATHER ARE:

1993: 15 MISSIONS
-1994: 19 MISSIONS

-3.1.H.7 What is the number of test days per year (1985 - 1993) canceled due to weather? ← See p. 101a.

NO FULL DAYS CANCELED FOR WEATHER ACCORDING TO OUR RECORDS

-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?

VISIBILITY BELOW 1 MILE	VISIBILITY BETWEEN 1 - 3 MILES	VISIBILITY ABOVE 3 MILES
8 DAYS	7 DAYS	350 DAYS ✓

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

355 DAYS/YEAR. ← See p. 101b.

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

RESTRICTIONS DUE TO WEATHER:
1993, 15 OUT OF 157 MISSIONS (9.5%) WERE LOST/LIMITED.;

1994, 19 OUT OF 266 MISSIONS (7.2%) WERE LOST/LIMITED

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. Unmanned air vehicles and cruise missiles are included.

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.

YES, W-151 AND W-470 ARE SUPERSONIC AREAS WITH THE FOLLOWING EXCEPTION: BELOW 10,000 FT AND WITHIN 15 NM FROM SHORE.

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

SOUTH BY SOUTHWEST, AND SOUTH BY SOUTHEAST.

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

10,000 FEET TO UNLIMITED.

-3.2.A.4 Over land or water? What size and shape (length and width)?

**AIRSPACE IS OVER WATER; GULF OF MEXICO.
AIRSPACE IS PART OF THE EGLIN GULF TEST RANGE.
PRIMARILY EMPLOYS TWO WARNING (SUB) RANGES, W-151 AND W-470. BOTH ARE IRREGULARLY SHAPED, ROUGHLY**

TRAPEZOIDAL. THE NORTHERN BOUNDARY OF EACH PARALLELS THE FLORIDA PANHANDLE COAST AT A DISTANCE OF APPROXIMATELY 3 MILES. APPROXIMATE AREA FOR EACH ARE:
W-151: 9690 SQ NM,
W-470: 5,516 SQ NM

-3.2.A.5 Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

YES, THERE ARE RESTRICTIONS. TO FLY SUPERSONIC AIRCRAFT MUST REMAIN 10,000 FEET AND MORE THAN 15 MILES FROM SHORE.

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

THERE IS NOT A CLEAR DEFINITION OF USER'S. IF THE QUESTION PERTAINS TO THE MAXIMUM NUMBER OF AIRBORNE MISSION PARTICIPANTS, THE DATA COULD NOT BE RETRIEVED IN ANY REASONABLE LENGTH OF TIME. IN THE CONTEXT OF MISSIONS AS WE DEFINE IT, THE MAXIMUM NUMBER THAT HAS BEEN NOTED IS FOUR. EXERCISES SUCH AS COPPER FLAG (NO LONGER ACTIVE) AND WILLIAM TELL HAVE CREATED HIGH DENSITY AIR TRAFFIC WITH A SINGLE MISSION (USER); OTHER EVALUATIONS SUCH AS THE AIR TO AIR WSEP ARE LIMITED BY THE NUMBER OF TARGETS WHICH CAN BE CONTROLLED SIMULTANEOUSLY (CURRENTLY FOUR) PLUS THE NUMBER OF ACTIVE PARTICIPANTS (LIMITED TO THIRTEEN ADDITIONAL)

-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

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(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.

NUMBER OF RUNWAYS: 2 ACTIVE AND 1 DRONE
AZ OF RUNWAYS: TRUE BEARING 134/314 DEGREES
AZ OF DRONE RUNWAY: TRUE BEARING 03/183 DEGREES
ELEVATION: 18' ASL
RUNWAY LENGTH: 10,000' (OUTSIDE); 8,075' (INSIDE); 7,000' (DRONE)
OVERRUN LENGTH: 1,000' FOR ALL
ARRESTING CABLE: YES; MA1A AND BAK 12/14
RAMP AREA: ~~312,460 SY (NET~~) AND 430,614 SY (GROSS) 204,244 SY (USABLE
CONSTRUCTION AREA: PORTLAND CEMENT CONCRETE
LOAD CAPACITY: USAF LIGHT-LOAD AIRFIELD

A REAL PROPERTY COMPUTER INQUIRY BY ORGANIZATIONAL CODE XLWU (475 WEG) WAS EXTRACTED BY CIVIL ENGINEERING PERSONNEL AND RECORDS IDENTIFYING HANGAR SPSCE WERE EXAMINED. VALUES WERE EXTRACTED DIRECTLY FORM THE AFOREMENTIONED INQUIRY. NO ATTEMPT WAS MADE TO DECONFLICT WITH PREVIOUS REPORTING UNDER THE BASIC BRAC QUESTIONNAIRE PREVIOUSLY SUBMITTED BY TAFB. SOME FACILITIES ARE USED JOINTLY WITH T & E FUNCTIONS AND THE BASE'S TRAINING MISSION, HOWEVER THE FOLLOWING REPORTS ONLY THE 475TH USAGE.

CONCLUSION

HANGER SPACE:

FAC 256, SUBSCALE TARGETS	23,640 SQUARE FEET
FAC 9310, FULL SCALE TARGETS	16,000 SQUARE FEET

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DATE: 12 August 94

MEMORANDUM FOR RECORD, AF/CEPP

AIR STAFF CORRECTION WORKSHEET

PURPOSE: To provide corrected answer to Question Number 3.2.B.1. Tyndall AFB Data Call

SOURCE: Tyndall AFB Airfield Parking Plan.

METHOD: Telecon with MAJCOM & Base POCs

CONCLUSION: The 08/02/94 T&E submission for 475 WEG, dated 25/07/94, was miscalculated or an error was made during transfer of information. Change usable ramp area to 204,244 SY instead of 312,460 SY (NET) and 430,614 SY (GROSS).

MAJCOM CONCURS: Capt Bierbaum, HQ ACC/XPPB, Langley AFB, DSN: 574-7159..

BASE CONCURS: Capt Brett Master, 475 TSS/ESF, Tyndall AFB, DSN: 523-3750.

I certify that the above information is accurate and complete to the best of my knowledge and belief.

AIR STAFF REVIEWER: Steven K. Lillemon DATE: 14 July 1994
Steven K. Lillemon, Major, USAF

certified 8/27/94 BM

FAC 227, E-9A INSTRUMENT AIRCRAFT: 42,898 SQ FT (1/2OF HANGAR SPACE)
FAC 156, SPECIAL DEVICES, 84 TH TEST SQUADRON 19987 SQ FT

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

EMERGENCY RUNWAYS (MILITARY)	DISTANCE
EGLIN AFB	60 MILES
PENSACOLA NAS	92 MILES
MOODY AFB	135 MILES
ROBINS AFB	185 MILES
JACKSONVILLE NAS	215 MILES
MACDILL AFB	207 MILES
PATRICK AFB	280 MILES
DANNELLY FIELD	140 MILES

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

THE TYNDALL AIRFIELD IS CENTRALLY LOCATED RELATIVE TO EAST AND WEST BOUNDARIES OF SUB-RANGES W-151 AND W-470, AND LESS THAN A HALF MILE INLAND. THE NORTHERN BOUNDARY OF SUB RANGES (W-151 AND W-470, PARALLEL THE FLORIDA PANHANDLE COAST FROM APPROXIMATELY FT WALTON BEACH, FL EAST TO THE MOUTH OF THE APPALACHICOLA RIVER (FL; EST 240 MILES). THE DISTANCE OF SEPARATION OF THE RANGES NORTHERN BOUNDARY TO SHORE IS APPROXIMATELY 3 MILES
SUB-RANGES W-151 AND W-470 AIRSPACE ARE SIDE-BY-SIDE (SHARING ONE COMMON BOUNDARY), IRREGULARLY SHAPED, ROUGHLY TRAPEZOIDAL WARNING RANGES OVER THE GULF OF

MEXICO.-

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

1. DUAL RUNWAYS.
2. MULTIPLE AVAILABLE ALTERNATIVE AIR IN THE AREA.
3. IMMEDIATE PROXIMITY TO GULF RANGES.
4. THE ONLY AVAILABLE AIRFIELD THAT ALLOWS DRONE
5. ISOLATED, DEDICATED DRONE RUNWAY/FACILITIES.
6. LITTLE DOWN TIME DUE TO WEATHER.
7. SELF-CONTAINED TELEMETRY COLLECTION AND ANALYSIS ABILITY.

3.2.B.5 Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).

THERE IS NO BASIC LIMITATION AT TYNDALL AFB THAT WOULD AFFECT TEST AIRCRAFT OPERATIONS. THE ONLY POSSIBLE CONSIDERATION FOR LARGE EXERCISES OR TESTS WOULD BE RAMP SPACE; HOWEVER WE CAN CURRENTLY HANDLE THREE C-5 OR KC-10 AIRCRAFT WITH NO REALLOCATION OF PARKED AIRCRAFT (INCLUDING DRONES), UP TO TEN WITH PRIOR PLANNING. THE REFUELING RANGE OF THE TARGETS AND THE E-9A AIRCRAFT LIMIT TEST OPERATIONS SINCE THE AERIAL TARGET NOR THE E-9A ARE CAPABLE OF IN-FLIGHT REFUELING. IN ADDITION, INSTRUMENTATION THE AIR AND ON THE GROUND HAVE DATA RATES COMMENSURATE WITH THE EVALUATIONS NORMALLY EXPECTED; THEREFORE THROUGHPUT LIMITATIONS EXIST ALTHOUGH ARE USUALLY BEING UPGRADED. THE 84TH RADAR TEST FACILITY REPORTS A LIMITATION BASED ON THE PHYSICAL FACILITY WHICH IS IF OUTSIZE EQUIPMENT MUST BE

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CO-LOCATED RIGHT NEXT TO THE RADAR'S/MISSILES, OR OTHER EQUIPMENT IN THE FACILITY. IF SO, THE SIZE OF EQUIPMENT IS LIMITED TO THAT WHICH CAN BE HOISTED BY 2000LB LIFT AND FIT THROUGH A 5FT BY 6.5FT DOOR. THIS HAS POSED NO LIMITATION ON PAST TESTING. WE ARE CURRENTLY INVESTIGATING OPTIONS TO OVERCOME THESE LIMITATIONS. THE MISSILE ANALYSTS REPORT A LIMITATION BASED ON THE SPEED OF AUTOMATIC DATA PROCESSING EQUIPMENT. THE TARGET CONTROL SYSTEM IS SIZED TO ACCOMMODATE 5 AERIAL TARGETS BEING CONTROLLED WHILE SIMULTANEOUSLY TRACKING 13 OTHER MISSION PARTICIPANTS.

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

UNDER THE PROVISIONS IDENTIFIED IN THE SOURCE A DOCUMENT, TAFB CAN ACCOMMODATE, ASSUMING CURRENTLY EXISTING ASSETS AND FUNDING/RESOURCES ARE MAINTAINED AS REQUIRED, A TEMPORARY INCREASE OF UP TO 64 FIGHTER SIZED AIRCRAFT. CONVERSIONS FACTORS FOR LARGE MULTI-ENGINE AIRCRAFT AND ROTARY WINGS NOT AVAILABLE. SOURCE B CURRENTLY IDENTIFIES 62 FULL SCALE QF-106 DRONES (UAVS) AND 71 SUB-SCALE BQM-34A AND MQM-107D TARGET DRONES (CRUISE MISSILE CATEGORY) EXIST IN BASE INVENTORY. THE QUANTITY OF POTENTIAL INCREASE OF EACH TYPE IS INDETERMINATE.

-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)

THE RADAR TEST FACILITY HAS THE CAPABILITY TO TEST RADARS AND ALL ASSOCIATED AVIONICS OF USAF FRONT-LINE FIGHTERS. WE DO THIS FROM AN INTEGRATED WEAPON SYSTEM APPROACH, MATING THE ASSOCIATED AIR-TO-AIR MISSILES TO THE RADAR WEAPON SYSTEM AND TESTING THEM TOGETHER. FUNCTIONAL CAPABILITIES OF THE GULF RANGE DRONE CONTROL UPGRADE SYSTEM (GRDCUS) PROVIDE THE CONTROL OF FOUR AERIAL TARGETS OF ANY TYPE AS LONG AS THE TARGET CARRIES A GRDCUS INTERFACE AND SOFTWARE EXISTS IN THE GROUND COMPUTERS. PAYLOAD CONTROL IS PROVIDED THROUGH THE CONTROL CONSOLES IN THE FIXED SITE. THE CURRENT INVENTORY OF TARGETS REPRESENTS CRUISE MISSILES, FIXED WING UNMANNED, AND THE TAXING CAPABILITY COULD BE USED FOR A GROUND TARGET. ROTARY WING TARGETS HAVE NOT BEEN IMPLEMENTED BUT COULD BE ACCOMMODATED . PAYLOAD CONTROL INCLUDES ACTIVE AND PASSIVE ECM CONTROLS AND OTHER ESOTERIC PACKAGES.

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

YES, (FULLSCALE) BLDG 9310 IS RESPONSIBLE TO PERFORM PRE-FLIGHT CHECK 24 HOURS BEFORE A SCHEDULED DRONE MISSION. PRE-FLIGHT CHECK INCLUDES INSTALLING THE CHAFF/FLARE DISPENSER, CIR POD, AND THE ECM POD. (SUBSCALE) THE SUBSCALE LAUNCH FACILITY WILL PERFORM DRONE PRE-FLIGHT CHECKS WHICH INCLUDE STARTING THE DRONE ENGINE, CONTROLLING DRONE SURFACES AND SYSTEMS VIA THE DRONE CONTROL SYSTEMS (GRDCUS) TO ENSURE THAT

THE DRONE IS FULLY FUNCTIONAL. THE GRDCUS HAS FULL MISSION SIMULATION CAPABILITY FOR THE AERIAL TARGET PORTION OF THE MISSION, INCLUDING TAKE-OFF AND LANDING OF MULTIPLE. DRONES TOGETHER WITH OVER THE HORIZON RELAY AIRCRAFT

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

THERE IS NO BASIC LIMITATION AT TYNDALL AFB THAT WOULD AFFECT TEST OPERATIONS. WE CAN HANDLE THREE C-5 OR KC-10 AIRCRAFT WITH NO REALLOCATION OF PARKED AIRCRAFT (INCLUDING DRONES), UP TO TEN WITH PRIOR PLANNING. EACH E-9A TELEMETRY RELAY AIRCRAFT CAN SUPPORT RECEPTION IN THE 2200 - 2400 MHZ BAND WITH UP TO FIVE DUAL DATA STREAMS AS LONG AS THE EMITTER IS WITHIN THE +/- 60 DEGREE BEAM WIDTH OF THE PHASED ARRAY ANTENNA. THE TARGET CONTROL SYSTEM (GRDCUS) CAN SUPPORT 4 UNMANNED A/C, 4 SHOOTERS, AND 5 SUPPORT A/C. ANY TYPE CAN BE TRACKED AS LONG AS A GRDCUS- COMPATIBLE ELECTRONICS PACKAGE IS INSTALLED. IF TARGET CONTROL IS NOT REQUIRED FOR THE MISSION, THE LIMITING FACTOR BECOMES AIR TRAFFIC CONTROL (GCI) MAINTAINING THE PARTICIPANTS AT A SAFE DISTANCE FROM EACH OTHER.

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

NO. UAV AND/OR ROTARY WING OPERATIONS POSE NO LIMITATIONS ON THE FACILITY. FLIGHT TESTS ARE AUTOMATICALLY DECONFLICTED BY RANGE SAPCE SCHEDULING. CLOSED LOOP TESTING AND FLIGHT MISDSIONS CAN BE PERFORMED SIMULTANEOUSLY

-3.2.C.5 What sorts of missions (e.g.; air-to-air, air-to-ground and refueling) can be flown within local airspace?

THE SORT OF MISSIONS WHICH CAN BE FLOWN WITHIN THE LOCAL AIRSPACE (OVER WATER; DEFINED AS THE EGLIN GULF TEST RANGE, OWNED AND OPERATED BY AFDTC, EGLIN AFB FL) ARE AIR-TO-AIR, AIR-TO-SURFACE, SURFACE-TO-AIR AERIAL REFUELING, LASER. AND BALLISTIC MUNITION TESTING.

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

THE E-9A AIRCRAFT (THERE ARETWO) ARE EQUIPPED TO SUPPORT ONE TELEMETRY MISSION PER AIRCRAFT AT TIME. HOWEVER, IT IS CAPABLE OF TRACKING AND RELAYING TELEMTRY DATA FROMFIVE OBJECTS IN THE AIRSPACE SIMULTANEOUSLY. THESE VEHICLES MUST LIE WITHINA COVERAGE AREA+ OR- 60 DEGREES FROM THE E-9A'S RIGHT WING. THE E-9A CAN RECEIVE AND RETRANSMIT UP TO TWO TELEMTRY DATA STREAMS FROMEACH OF THESE OBJECTS. THIS PROVIDES THE E-9A A CUMULATIVE RELAY AND RETRANSMIT CAPABILITY OF TEN TELEMTRY DATA STREAMS. TSGT COLE REPOPRTS THAT THERE IS A CAPABILITY TO SUPPORT TWO SIMULTANEOUS MISSINS AT THE GROUND TELEMTRY SITE (BUILDING 1801). UNDER THE PRESUMPTION THAT THE AIRCRAFT AND GROUND SITES ARE ON SEPERATE MISSIONS, THE TOTAL IS DEDUCED TO BE FOUR . SINCE THERE IS NOT A CONCISE AND UNIVERSALLY ACCEPTED DEFINITION OF "MISSION" SEVERAL VARIANTS OF THIS CAPABILITY MAY BE DETERMINED.

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

THE RADAR TEST FACILITY REPORTS TWO OPEN AIR TESTS, WITH ONE SHARING AIRSPACE WITH THE OTHER. WE CAN PERFORM UP TO TWO OTHER SEPARATE GROUND TESTS WITH SIMULATED TARGETS. THE RADAR TEST FACILITY USES SINGLE OPEN AIR TESTS DUE TO ITS LIMITED RANGE SPACE. MULTIPLE CLOSE-IN TESTS WOULD ONLY CAUSE INTERFERENCE AND CONTAMINATE VALUABLE TEST DATA. TESTING FROM A GROUND BASED TOWER LIMITS RANGE SPACE AND THE NUMBER OF SIMULTANEOUS OPEN AIR TEST MISSIONS TO ONE. THE GULF RANGE DRONE CONTROL UPGRADE SYSTEM HAS CONDUCTED 3 SIMULTANEOUS TEST, TWO INVOLVING FLYING OPERATIONS WHILE A THIRD TEST FOR A GROUND CHECKOUT WAS BEING ACCOMPLISHED.

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

NUMBER	TYPE	OWNER
63	QF-106	ACC
2	E-9A	ACC
8	MU-2	SENTEL CORPORATION
21	F-15A/B	AETC
54	F-15C/D	AETC
5	C-172	TAFB AERO CLUB
1	PA24-260	TAFB AERO CLUB
4	F-16A	AIR NATIONAL GAURD

3.3 ELECTRONIC COMBAT (The majority of answers in this section pertain to the Radar Test Facility only)

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.

THE QUESTIONS ASSOCIATED WITH ELECTRONIC COMBAT TESTING DO NOT DIRECTLY APPLY TO OUR TELEMETRY DATA COLLECTION ASSETS (GROUND STATION AND E-9A AP/TM). SECONDARY SUPPORT OF EC TESTING IS PROVIDED THROUGH THE CAPTURE AND DISPLAY OF TELEMETRY DATA FROM ECM SYSTEMS. ON OCCASION, TESTING IS DONE WITH INSTRUMENTAL ELECTRONIC COUNTERMEASURES PACKAGES. CERTAIN CHANNELS ARE MONITORED TO ENSURE PROPER ECM/ECCM SYSTEM OPERATION PRIOR TO WEAPON FIRINGS. OUR ASSETS ARE CAPABLE OF RECEIVING DATA TRANSMITTED IN THE TELEMETRY S-BAND (220-2400 MHZ). L-BAND TELEMETRY TRANSMISSIONS CAN ALSO BE RECEIVED BY TELEMETRY GROUND STATION (E-9A CANNOT RECEIVE L-BAND SIGNALS).

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?

FIVE:
WE HAVE TWO FOREIGN MILITARY ACQUISITION(FMA) THREAT SYSTEMS: AN AIRBORNE INTERCEPT RADAR AND AN AIRBORNE ELECTRONIC COUNTERMEASURES SYSTEM, BOTH OF WHICH HAVE BEEN INSTALLED IN HOT MOCK-UPS. ADDITIONALLY WE HAVE AN ECM SUITE DESIGNED TO SIMULATE THREAT EMITTERS. WITH THE ECM SUITE WE HAVE THE CAPABILITY OF

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GENERATING THREE ADDITIONAL THREATS. WE COULD SIMULATE FOREIGN MILITARY SALES (FMS) F-15 AND F-16 RADARS BY RE CONFIGURING OUR FOUR RADARS (TWO F-15 AND TWO F-16).

-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?

WE CAN SIMULATE A MAXIMUM OF FIVE THREATS: 1 AIRBORNE ELECTRONIC COUNTERMEASURES SYSTEM, 1 ACTUAL THREAT AIRBORNE INTERCEPT (AI) RADAR, AND 3 FOREIGN MILITARY SALES AI RADARS. THE MAXIMUM SIGNAL (PULSE) DENSITY IS 1.1 MILLION PULSES PER SECOND WITH AN AVERAGE DENSITY OF 0.55 MILLION PULSES PER SECOND. THE POWER LEVELS ARE AT FULL OPERATIONAL CAPABILITY OF EACH SYSTEM. THE SYSTEMS OPERATE IN THE I AND J BANDS WITH THE SIGNALS EITHER RADIATED IN FREE-SPACE OR INJECTED.

-3.3.A.3 Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

NO. THERE IS NO NEED TO VALIDATE OUR FMA THREATS, AS THESE ARE ACTUAL SYSTEMS AND DO NOT NEED VALIDATION. OUR ECM POD ASSETS ARE OPERATIONAL PODS AND DO NOT REQUIRE VALIDATION. OUR ECM SUITE IS GENERIC THREAT GENERATOR SYSTEM AND IS NOT VALIDATED.

-3.3.A.4 Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

THE RADAR TEST FACILITY CONDUCTS ALL THREE OF THESE TYPES OF TESTS. METHODS INCLUDE AIRCRAFT FLYING

AGAINST THE FACILITY OR USE OF THE FAR FIELD TOWER (OPEN LOOP), TRANSMIT SAMPLES INJECTED INTO VISITING SYSTEMS FOR STIMULATION (REACTIVE), AND TARGETS INJECTED INTO SYSTEM RECEIVERS (CLOSED LOOP).

-3.3.A.5 What is the threat representation (fidelity) and density?

WE USE FOREIGN MILITARY ACQUISITION (FMA) SYSTEMS FOR FIDELITY. OUR ECM SUITE IS A GENERIC ECM GENERATOR AND RANGES IN FIDELITY FROM HIGH TO LOW, DEPENDING ON WHICH THREAT IT IS SIMULATING.

-3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

NO

-3.3.A.7 What geographic dispersion can be simulated?

GEOGRAPHIC DISPERSION NOT APPLICABLE.

-3.3.A.7.A Threat lay down?

NOT APPLICABLE.

-3.3.A.7.B Representative distance?

NOT APPLICABLE.

-3.3.A.8 Are the threats moveable (i.e.; dynamic) within a test scenario? relocatable to new scenarios? yes/no

FOUO

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Tyndall AFB FL

PURPOSE: To document the answer to question:

-3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

SOURCE: Major Steven R. Allen, Chief Engineer, Radar Test Flight 84th Test Squadron, Tyndall AFB FL, DSN 523-2018.

METHOD: Personal interview with Major Allen.

CONCLUSION: We can simultaneously operate three fire control radar systems during countermeasure evaluations: one F-15 radar, one F-16 radar, and one foreign asset radar system. We are completely unlimited on the number of simultaneous countermeasures evaluated by our radar systems since our evaluation centers on how the radars perform against these various techniques, not on how the techniques are generated. With regard to our technique generation capability, we can typically generate four to eight simultaneous countermeasures; limited only by the quantity of available generators or ECM pod systems.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

James F. Sanders II Date 8 Sept 94

JAMES F. SANDERS II, Maj, USAF
84 TS/DOR, DSN 523-2018

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Donald G. Davidson Date 20 Sep 94

DONALD G. DAVIDSON, Lt Col, USAF
HQ ACC/DRMT, DSN 574-7597

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115a.

NO, THESE SYSTEMS ARE HARD MOUNTED IN A TOWER

-3.3.A.9 Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

NO

-3.3.A.10 Is there a limit on simultaneous users? Yes/no. If no, explain.

YES, THE RTF SUPPORTS AS MANY USERS AS CAN OPERATE THE RADAR SYSTEMS (OR THEIR EQUIPMENT) WITHOUT MUTUAL RADIO INTERFERENCE. IF NO CUSTOMER TRANSMITS THE RTF SUPPORTS UP TO 10 SIMULTANEOUS USERS. IF THE CUSTOMER REQUIRES FREE-SPACE TRANSMISSION, THE RTF SUPPORTS UP TO 5 SIMULTANEOUS USERS.

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.

YES, SIZE OF EQUIPMENT IS LIMITED TO THAT WHICH CAN BE HOISTED BY 2,000 LB LIFT AND FIT THROUGH 5FT BY 6.5FT DOOR. WE ARE INVESTIGATING OPTIONS TO OVERCOME THESE LIMITATIONS.

-3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

WE CAN EVALUATE MULTIPLE TECHNIQUES DEPENDING ON WHETHER WE USE THE ECM TECHNIQUES GENERATOR OR THE AN ACTUAL ECM POD. TYPICALLY, FOUR TO EIGHT

See p. 115a

See p. 115a.

~~COUNTERMEASURES CAN BE EVALUATED~~ AT ANY GIVEN TIME.

-3.3.B.3 What range of spectra can be tested and evaluated?

THE RADAR TEST FACILITY (RTF) CAN SUPPORT TESTING FROM 0 -18 GHZ. OUR PRIMARY FOCUS IS X-BAND (I-BAND) RADAR TESTING. CLASSIFIED PROGRAMS HAVE SUCCESSFULLY TESTED NON X-BAND SYSTEMS AT THE RTF USING THEIR OWN EQUIPMENT, BUT WE ARE SPECIFICALLY SET UP TO SUPPORT OT&E OF FIGHTER RADARS AND ASSOCIATED SYSTEMS. OUR INSTRUMENTATION CAN RECORD FROM 0-22 GHZ. OUR ECM GENERATION CAPABILITY IS LIMITED TO X-BAND (I-BAND) ONLY.

-3.3.B.4 What are the available spectra?

THE RADAR TEST FACILITY CAN SUPPORT TESTING FROM 0-18 GHZ. HOWEVER OUR PRIMARY FOCUS IS X-BAND(I-BAND) RADAR TESTING. WE ARE SET UP TO SUPPORT OT&E OF FIGHTER RADARS AND ASSOCIATED SYSTEMS. OUR INSTRUMENTATION CAN RECORD FROM 0-22GHZ. OUR ECM GENERATION CAPABILITY IS LIMITED TO X-BAND (I-BAND) ONLY

-3.3.B.5 Do you have a scene generation capability? Yes/no. If yes, describe.

NO

3.4 ARMAMENTS / 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),

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PURPOSE: To document the answer to question:

-3.4.A.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?

SOURCE: Personal/Professional Knowledge.

METHOD: NONE; not applicable.

CONCLUSION: No; directed energy weapons test and evaluation has never been, and is not currently, the mission of the 475 WEG.

Preparer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Date: 19 Sep 94
BRETT A. MASTER, Captain, 475 TSS/ESF, 523-3750

MAJCOM Reviewer: I certify the above information is accurate and complete to the best of my knowledge and belief.

Date: 20 Sep 94
DONALD G. DAVIDSON, Lt Col, USAF
HQ ACC/DRMT, DSN 574-7597

RETAIN THROUGH
YEAR 2005

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while the testing of the weapon system's vehicle is in another functional area.

3.4.A Directed Energy (MV II) - Measure of Merit: *Extent to which the facility satisfies directed energy weapon system test requirements.*

-3.4.A.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?

NO ← See p. 117a

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.

-3.4.B.1 Ground Space

-3.4.B.1.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?

ALL AIRSPACE IS OVER WATER

SPECIAL USE AREA	AREA (SQ NM)
W-151	9,690
W-470	5,516

-3.4.B.1.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.

THERE ARE TWO AREAS INVOLVING OVERLAND, DESIGNATED AS R2905A AND B, TOTALLING 59 SQ MILES; THE OVERWATER AREAS ARE W-151 AND W-470 AND ARE DOCUMENTED UNDER THE RESPONSE TO QUESTION 3.1.G.4 ADDITIONAL SPACE IS AVAILABLE WITH EARLY COORDINATION AND ARE SHOWN ON THE AIR NAVIGATION MAPS AS W-155 (PENSACOLA AREA), W-453 (PASCAGOULA MS), W-168 IN THE TAMPA-MCDILL AREA, W-174 (NAPLES/MARCO ISLAND AREA), AND W-456 (HOMESTEAD AREA). THE ACREAGE OF THESE WARNING AREAS HAS NOT BEEN CALCULATED.

-3.4.B.1.C What are the maximum ranges (nautical miles) you can test, by type weapon?

THE RADAR TEST FACILITY'S LIMITS ARE SET BY THE RADAR SYSTEMS UNDER TEST. THE ACTUAL RANGE LIMITS OF THESE RADARS ARE CLASSIFIED. THE TEST AIRSPACE EXTENDS FOR 90 NM. THE 90 NM AIRSPACE IS USUALLY ADEQUATE FOR THE TYPE OF TESTING CONDUCTED AT THE RADAR TEST FACILITY

TELEMETRY DATA COLLECTION IN THE GROUND TELEMETRY FACILITY IS LIMITED TO LINE-OF-SIGHT DATA CAPTURE. DEPENDING UPON WEAPON EMPLOYMENT ALTITUDES, COVERAGE MAY BE LIMITED TO AS LITTLE AS FORTY MILES. HOWEVER, DATA IS ROUTINELY GATHERED FROM WEAPONS IN EXCESS OF EIGHTY MILES FROM THE FACILITY. LINE-OF-SIGHT CONSTRAINTS DRIVE THESE LIMITATIONS MORE THAN TELEMETRY PACK POWER OUTPUT FROM THE WEAPON.

THE E-9A IS USED TO EXTEND OUR OVER-THE-HORIZON DATA COLLECTION CAPABILITY. THIS ASSET ALLOWS US TO CAPTURE

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AND RELAY DATA FROM ANY AREA ON THE EGLIN AFB GULF TEST RANGE. SUPPORT HAS BEEN PROVIDED TO DATE FOR AIM-120, AIM-7M, AIM-9M, TOMOHAWK, SM-2, AND A HOST OF OTHER WEAPONS/AIRCRAFT/SCORING SYSTEMS. THE E-9A HAS DEMONSTRATED THE CAPABILITY TO STAND-OFF IN EXCESS OF 150 NM FROM A TOMAHAWK CRUISE MISSILE AND RELAY TELEMETRY DATA TO A GROUND STATION OVER 100 NM AWAY MAXIMUM UHF RADIO COVERAGE VARIES FROM 150-180 NAUTICAL MILES DEPENDING ON RADIO TUNING CHARACTERISTICS AND ANTENNA SIGNAL PROPAGATION. MAXIMUM SEARCH RADAR COVERAGE FOR THE AN/TPS-63 VARIES BY TARGET ALTITUDES, BUT MAXIMUM RANGE AT 10,000 FT. (STANDARD WSEP COMBAT ALTITUDE) IS 130 NAUTICAL MILES. MAXIMUM SEARCH RADAR COVERAGE FOR THE AN/FPS 64 (PREVIOUS AN/FPS-20E) MAXIMUM RANGE AT 10,000 FT IS 165 NM.

3.4.B.2 Test Operations

-3.4.B.2.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:

--Unguided 2000 pound-class ballistic weapon
---live?
---inert?
--Guided weapon (e.g.; GBU-24 class)
---live?
---inert?
--Stand-off weapon (e.g.; AGM-130 class)
---live?
---inert?
--Short-range missile (e.g., AIM-9)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL

---above 20,000 feet MSL
--Long-range missile (e.g., AIM-120)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL

ANSWERS APPLICABLE TO 475 WEG

TEST MISSIONS CANCELLED	FY 92	FY93
SHORT RANGE MISSILE BELOW 5000 FT MSL	2	2
SHORT RANGE MISSILE BETWEEN 5,000FT & 20,000 FT MSL	731	731
SHORT RANGE MISSILE ABOVE 20,OOO FT MSL	242	242
LONG RANGE MISSILE BELOW 5,000FT MSL	10	10
LONG RANGE MISSILE BETWEEN 5000FT AND 20,000 FT MSL	297	297
LONG RANGE MISSILE ABOVE 20,000 FT MSL	119	119

IN ADDITION, UNMANNED FULL SCALE TARGETS WERE USED FOR 73 MISSIONS IN FY92 AND 97 MISSIONS INFY 93. THESE TARGETS HAVE A HAZARD FOOTPRINT THAT EXTENDS TO 5.7 NAUTICAL MILES AT ALTITUDES OF 40,000 FT AND ABOVE.

-3.4.B.2.B Were flight termination systems required? Yes/no.

YES, FLIGHT TERMINATION (DESTRUCT) SYSTEMS WERE REQUIRED FOR ALL AIM-120 AND ALL UNMANNED, FULL SCALE FLIGHTS. SUBSCALES' FLIGHT TERMINATION INITIATES PARACHUTE RECOVERY.

-3.4.B.2.C If no missions were scheduled in a category, give the reason(s).

- UNGUIDED 2000LB CLASS BALLISTIC WEAPON- STAND-OFF WEAPON, GUIDED WEAPON, (NOT IN OUR CHARTER--PROVIDED SUPPORT FOR AIR-TO-AIR AND SURFACE-TO-AIR WEAPONS TO DATE).

SHORT-RANGE MISSILE AND LONG RANGE MISSILE - MISSIONS WERE SCHEDULED AND SUPPORTED IN THESE WEAPONS CATEGORIES

-3.4.B.2.D 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.

NO

GENERAL INFORMATION

Facility/Capability Title: Wetstone Control Facility/GCI

Origin Date: 06/03/94

Service: USAF **Organization/Activity:** 81st RCS **Location:** Tyndall AFB

T&E Functional Area: Armament/Weapons **UIC:** TX1CFBG4

T&E Test Facility Category: OAR

	T&E	S&T	DE	IE	T&D	OTHER	= 100%
PERCENTAGE USE:	17 %				83 %		

BREAKOUT BY T&E FUNCTIONAL AREA (%):

Air Vehicles						
Armament/Weapons	31 %					
EC						
Other (ACT/DACT)					69 %	

TECHNICAL INFORMATION

Facility/Capability Title: 81 st RCS (WETSTONE)/ GCI

Facility Description; Including mission statement:

Mission Statement: Responsible for all radar control in support of USAF Weapon System Evaluation Program (WSEP); only ACC radar unit supporting operational testing and evaluation of air-to-air missiles. Ensures range safety and airspace integrity during live-fire missions. Supports combat training for local and deployed fighter units. Responsible to the 475 WEG.

Facility Description: Building 1282 contains the WETSTONE Control operations room (shown in TAFB Technical Manual, Mar 89, figure II-B-30-31 along with an overview of the WETSTONE facility). This room contains radar display consoles, IFF/SIF decoders, voice communications controls, and status display equipment that permit the various WETSTONE weapons directors and technicians to control and monitor range aircraft and missions. A communications room connects the WETSTONE radar consoles to the AN/FPS-64 radar information, and connects the WETSTONE controllers to the voice radio systems located at various sites at Tyndall.

Interconnectivity/Multi-Use of T&E Facility: WETSTONE Control coordinates and/or exchanges data while test missions are conducted with drone contorl operations (GRDCUS),Range Safety, E-9 Range Patrol, fighter aircraft pariticipating in WSEP, 83 FWS Operations Desk, AN/FPS-64 and AN/TPS-63. WETSTONE Control facility supports GCI operations for the host 325 FW aircrew and controller training and Southeast Air Defense Sector wartime/contingency operations.

Type of Test Supported: Armament/Weapons by providing GCI and range safety monitoring during WSEP. Other T&E by providing GCI to TDY fighter units working ACT/DACT missions for air combat continuation training.

Summary of Technical Capabilities: 1 AN/FPS-64 and 1 AN/TPS-63 radar, 14 AN/UPA-62 radar display consoles, 12 AN/GPA-122 IFF and 2 AN/GPA-159 encoders/decoders, Modes 2, 3, and C. Various UHF voice transmitters and receivers and overhead projector and large display screen.

Keywords:

GCI (Ground Control Intercept)

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: WETSTONE/GCI

ANNUAL HOURS OF DOWNTIME	1	4327
AVERAGE DOWNTIME PER DAY (LINE 1 ÷ 365)	2	11.85
AVERAGE HOURS AVAILABLE PER DAY(24-LINE 2)	3	12.15

TEST TYPES	TEST AT ON TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ)
4	5	6	7	8 72.9
WSEP	1	2	2	
28 TS AWC	1	2	2	
85AWC	1	2	2	
				ANNUAL UNCONSTRAINED CAPACITY
		TOTAL Σ	6	9 26,608.5

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: 81 RCS (WETSTONE)/GCI

		FISCAL YEAR							
T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS (WSEP)	DIRECT LABOR	2232	2556	1890	1332	1152	2934	2646	2484
	TEST HOURS	248	284	210	148	128	326	294	276
	MISSIONS	124	142	105	74	64	163	147	138
OTHER T&E (ACT/DACT)	DIRECT LABOR	4869	14022	4230	4743	0	6147	6012	6012
	TEST HOURS	541	1558	470	527	0	683	668	668
	MISSIONS	721	2077	626	702	*	911	891	891
OTHER (BFM/INT/A-R/EXERCISES)	DIRECT LABOR	0	0	0	0	0	9173	7769	4968
	TEST HOURS	0	0	0	0	0	1019	863	552
	MISSIONS	*	*	*	*	*	1359	1151	736

* DATA NOT RECORDED ON THIS YEARS.

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: 81 RCS (WETSTONE)/GCI
AGE: MID 1950's mID 150
REPLACEMENT VALUE: $ 5 MILLIION DOLLARS (INCLUDES EQUIPMENT)
MAINTENANCE AND REPAIR BACKLOG: NONE
DATE OF LAST UPGRADE: N/A
NATURE OF LAST
UPGRADE: N/A

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: RCS Cx
TOTAL
PROGRAMMED AMOUNT: $ 8 MILLION DOLLARS

SUMMARY DESCRIPTION: UPGRADE TO AUTOMATED RANGE CONTROL FACILITY

ADDITIONAL INFORMATION

(CONTINUED ON PAGE 7)

Facility/Capability Title: 81 RCS (WETSTONE)/GCI

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
OFFICER	16	13	10	8	6	6	6
ENLISTED	24	27	30	32	34	34	34
CIVILIAN	1	1	1	1	1	1	1
CONTRACTOR							
TOTAL	41	41	41	41	41	41	41

Total Square Footage: 11992

Test Area Square Footage: 7228

Office Space Square Footage; 14000

Tonnage of Equipment: 10000 lbs

Volume of Equipment: 10000 sq feet

Annual Maintenance Cost: $11000

Estimated Moving Cost: ___?

CAPITAL EQUIPMENT INVESTMENT: NONE

DETERMINATION OF UNCONSTRAINED CAPACITY

(CONTINUED ON PAGE 9)

FACILITY/CAPABILITY TITLE: RADAR TEST FACILITY

ANNUAL HOURS OF DOWNTIME	1. 1460
ANNUAL 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 PER DAY (LINE 3 X TOTAL Σ)
4	5	6	7	8
Flight test	1	6	6	360
Closed loop	1	6	6	
Special Projects	1	6	6	
				9

ANNUAL UNCONSTRAINED CAPACITY

131,400

TOTAL Σ 18

"TYPICAL"

TECHNICAL INFORMATION

(CONCLUDED ON PAGE 14)

Facility/Capability Title: **RADAR TEST FACILITY (RTF)**

Facility Description; Including mission statement: The Radar Test Facility (RTF) conducts integrated weapon system testing of the Combat Air Forces (CAF) fighter radar and missile systems. The RTF helps develop flight test requirements for the CAF fighters and performs Phase I ground evaluation, operator familiarization, and preliminary follow-on operational test and evaluation (FOT&E) of the fighter radar operational flight programs (OFPs) as outlined by Multi-Command Regulation 800-2 and directed by HQ ACC. As ACC's radar test facility, the RTF improves combat capability by evaluating OFP changes for the F-15's APG-63/70 radar; the F-16's APG-66/68 radar, with/without electronic countermeasures (ECM), and verifies interoperability with the AIM-7 and AIM-120 advanced medium range air-to-air missile (AMRAAM) systems. All testing occurs in a realistic environment by using the actual CAF fighter equipment operated by fighter pilots. Test profiles include testing against fighters flying in front of the facility. Real electronic warfare systems provide true-to-life integrated weapon system operation in conjunction with either actual flight testing or a simulated fighter engagement. The RTF provides complete simulation capability to assist in evaluating conceptual changes to the OFPs (i.e., development tapes), as well as modifications to fielded radar OFPs (i.e., OT&E tapes). The RTF also supports developmental/integration testing by providing access to our radar, missile, and ECM systems through flight testing in the Gulf of Mexico water ranges or by in-house bench testing.

Interconnectivity/Multi-Use of T&E Facility: The RTF's efforts in the development of flight test requirements and its mission of OT&E of fighter radar and missile systems are a critical part of the 475th Weapons Evaluation Group's cradle-to-grave evaluation of USAF operational weapons systems. Loss of the RTF would limit the 475th to the role of quality control checker for already fielded systems only. Additionally, the RTF has Special Access Required (SAR) facilities and supports programs with special security requirements. The RTF possesses real threat radar (HAVE STRING) and ECM systems giving DoD the capability to operationally test against actual threat systems. The RTF supports developmental testing and evaluation (DT&E) on a non-interference basis.

Type of Test Supported: Embedded computer software OT&E of F-15 and F-16 radars along with the AIM-7F/M/H-build and AMRAAM; operational demonstration of weapon system changes; identifying radar system maintenance deficiencies and developing work-around solutions; advanced ECM and ECCM system evaluation and development support.

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FACILITY CONDITION

FACILITY/CAPABILITY TITLE: RADAR TEST FACILITY (RTF)

AGE: 8 YEARS REPLACEMENT VALUE: $95 MILLION (FACILITY & EQUIPMENT)

MAINTENANCE AND REPAIR BACKLOG: NONE

DATE OF LAST UPGRADE: IN PROGRESS

NATURE OF LAST UPGRADE: RF/EMI shielded enclosure addition due to be completed 23 May 94. Electrical power and air conditioning upgrade due to be completed 1 Sep 94.

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: NONE

   TOTAL PROGRAMMED AMOUNT: NA
   SUMMARY DESCRIPTION: NA

2. UPGRADE TITLE: NONE

   TOTAL PROGRAMMED AMOUNT: NA
   SUMMARY DESCRIPTION: NA

Service: Air Force **Organization/Activity:** Radar Test Facility **Location:** Tyndall AFB FL Complete form for FY93

T&E Functional Area: Air Vehicles UIC =

T&E Test Facility Category: HITL

	T&E	S&T	D&E	IE	T&D	OTHER	= 100%
PERCENTAGE USE:	86%	5%	9%				

BREAKOUT BY T&E FUNCTIONAL AREA (%):

Air Vehicles	86%	5%	4%
Armament/Weapons			
EC			5%
Other			

Total In Breakout Must Equal "Percentage Use" On First Line

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GENERAL INFORMATION

(CONTINUED ON PAGE 11)

Facility/Capability Title: RADAR TEST FACILITY (RTF)

Origin Date: 04/29/94

HISTOI

Facility/Capability Title: RANGE FACILITY AND AN

Note: AV historical workload (see method in table below) appears to be based on total AV hrs [95% total workload] whereas T&E accounts for only 86% total workload ⟹ 2683 = FY92/93 T&E AV test hrs = (2960) [.86/.95]

T&E FUNCTIONAL AREA		86							
AIR VEHICLES	DIRECT LABOR	11,603	1						
	TEST HOURS								
	MISSIONS	351							
EC	DIRECT LABOR	11,603	1						
	TEST HOURS							920	944
	MISSIONS	351	357	281	201	150	218	230	236
ARMAMENT/WEAPONS	DIRECT LABOR	92,826	92,826	92,826	92,826	92,826	92,826	92,826	92,826
	TEST HOURS							7348	7546
	MISSIONS	2806	2858	2251	1605	1202	1747	1837	1885
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

TECHNICAL INFORMATION

Facility/Capability Title: RANGE FACILITY AND ANALYSIS COMPLEX

Facility Description; Including mission statement: The 83 FWS Analysis Branch ensures target, telemetry, and other data sources are available for all Combat Archer missions, USAFAWC, and Navy missions. Provides facilities for data collection, reduction, analysis, and storage. Coordinates with appropriate agencies to ensure sole source data is distributed throughout DoD. Facility mission is to determine Pk of operational missiles/weapons systems.
Instrumentation Assets: VAX 11-780, VAX 8700, Silicon Graphics Challenge, Silicon Graphics IRIX Workstations, VAX 4000/VLC, Aptec computer, Racal 26-track recorders, Microdyne receivers, EMP antennas, EMR decommutation, assorted discriminators and filters, digital distribution amplifiers, Astromed stripchart recorders Various PCs, Sonographs, Racal 14-track recorders, multiplexors, decryption equipment, keying equipment, microwave links with D-3 site, comm equipment, contractor analysis support, Combat Munitions Unit
Type of Test Supported:
The reduction and analysis of telemetry data at Tyndall involves primarily telemetry collected from live missile firings made during WSEP missions on the Gulf Range Complex. For each firing, recorded data from all media sources on drones, missiles, and aircraft flight paths, miss distances, and other parameters are reviewed , compared, and analyzed. A review board verifies the analysis, and an independent review team verifies the analysis again. Following the review process, the data are entered into an automated database maintained for future correlations and reference. Individual firing reports and compiled quarterly reports are written and distributed to Headquarters ACC, involved units, and interested parties. Annual data and a trend analysis are published annually.
Keywords: Air-to-air missile analysis, telemetry, missile scoring, Combat Archer, William Tell, PROBE

FACILITY CONDITION AUDIT TRAIL

1. CHRIS JETT, REAL PROPERTY SPECIALIST, 523-2790
2. AJFLEAR7115
3. ROBERT OLIVER, COMMUNITY PLANNER, 523-4362
4. SSGT DOUGLAS, 212BC EQUIPMENT CUSTODIAN
5. SGT LOPEZ, 187CF EQUIPMENT CUSTODIAN
6. SGT CARTER, 190AD EQUIPMENT CUSTODIAN
7. SGT SCHMIDT, 190OP EQUIPMENT CUSTODIAN
8. TSGT CARTER, 195IE/LS/RN EQUIPMENT CUSTODIAN
9. TSGT ZABAWA, 212MA EQUIPMENT CUSTODIAN
10. SSGT SMITH, 190SQ EQUIPMENT CUSTODIAN
11. SSGT PEARISH, 212AG EQUIPMENT CUSTODIAN
12. SGT JORDAN, 212RB EQUIPMENT CUSTODIAN
13. TSGT COLE, 192TM/TR EQUIPMENT CUSTODIAN

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: **BLDG 1801/BLDG 225/BLDG 226/BLDG 7028; RANGE FACILITY AND ANALYSIS COMPLEX**

AGE: BLDG 1801/20 YEARS
BLDG 225/ 31 YEARS
BLDG 226/7 YEARS
BLDG 7028/11 YEARS

REPLACEMENT VALUE: 18,064,631.51 (INCL EQUIPMENT COSTS)

MAINTENANCE AND REPAIR BACKLOG: $45,000 TO CORRECT HUMIDITY PROBLEM IN BLDG 225

DATE OF LAST UPGRADE: 1 FEB 94

NATURE OF LAST UPGRADE: MOVE COMPUTER SUPPORT AND MISSILE ANALYSIS TO NEW FACILITY--
SQUADRON CONSOLIDATION WILL INCREASE EFFICIENCY & LOWER COST OF OPERATIONS

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: BLDG 1801

   TOTAL PROGRAMMED AMOUNT: $471,744
   SUMMARY DESCRIPTION: ADD TO/ALTER RANGE SUPPORT FACILITY

2. UPGRADE TITLE: BLDG 225

   TOTAL PROGRAMMED AMOUNT: $45,000
   SUMMARY DESCRIPTION: CORRECT HUMIDITY PROBLEM

GENERAL INFORMATION

Facility/Capability Title: RANGE FACILITY AND ANALYSIS COMPLEX

Origin Date: 04/29/94

Service: Air Force **Organization/Activity:** Range Telemetry and Analysis Complex **Location:** Tyndall AFB FL
Complete form for FY93

T&E Functional Area: Air Vehicles UIC =

T&E Test Facility Category: HITL

	T&E	S&T	D&E	IE	T&D	OTHER	= 100%
PERCENTAGE USE:	90%		10%				

BREAKOUT BY T&E FUNCTIONAL AREA (%):

Air Vehicles	10%	2%
Armament/Weapons	70%	6%
EC	10%	2%
Other		

Total In Breakout Must Equal "Percentage Use" On First Line

DETERMINATION OF UNCONSTRAINED CAPACITY

CAPABILITY TITLE: RANGE FACILITY AND ANALYSIS COMPLEX

ANNUAL HOURS OF DOWNTIME	1. 2,364
ANNUAL DOWNTIME PER DAY (LINE 1 ÷ 365)	2. 6.5
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3. 17.5

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ)
4	5	6	7	8
AIM-7/9 Build	2	1.5	3	551
AIM-120 Build	1	5	5	
Flight Test	1	4.5	4.5	
Closed Loop	1	6	6	9
Special Project	1	6	6	ANNUAL UNCONSTRAINED CAPACITY
				201,115

TOTAL Σ 31.5

"TYPICAL"

Officer	16	16	19	19	20	18	21
Enlisted	23	47	48	46	44	43	42
Civilian	1	1	2	2	2	2	2
Contractor	4	4	5	4	3	3	3
Total	39	63	67	65	64	61	63

Total Square Footage: 56,621.25
Test Area Square Footage: 26,953
Tonnage of Equipment: 188,033 lbs
Annual Maintenance Cost: $750K Annual O&M (maintenance alone unknown)

Office Space Square Footage: 14,818.25
Volume of Equipment: 31,429 cu feet
Estimated Moving Cost: $21 million

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
3.1	0	0	0	0	0	0

EC	DIRECT LABOR	936	936	936	936	936	936	936	936
	TEST HOURS	156	156	156	156	156	156	156	156
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

ADDITIONAL INFORMATION

(CONCLUDED ON PAGE 16)

Facility/Capability Title: Radar Test Facility

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99

Summary of Technical Capabilities: Completely instrumented fire control radar systems and associated avionics equipment for the APG-63, APG-66, APG-68, and APG-70; Goldenbird version of the AIM-7M/H missile; dual channel ECM DRFM techniques generator; ALQ-188 bench; ULQ-21 FutureJam system; IDARS reconfigurable instrumentation system; numerous IBM PC systems; VAX 8659; Micro Vax II; Micro Vax 3400 & VAX 3520 workstations; strip chart recorders, 14/28 track analog recorders; DCRSi recorder; 9-track digital tape recorders; and VHS/U-Matic video recorders. The RTF possesses real threat radar (HAVE STRING) and ECM systems giving DoD the capability to operationally test against actual threat systems.

Keywords: Air Vehicle, Integrated Weapon System Testing, OT&E, Radar, Missile, Operational Demonstration, Flight Testing, Interoperability, Avionics

HISTORICAL WORKLOAD

(CONCLUDED ON PAGE 15)

Facility/Capability Title: Radar Test Facility

Method: Estimate - 40 hours/week x 52 weeks/year x 9 people (average 1.5 tests/day with 6 people/test) = 18,720. **95% Air Vehicles = 17,784 hours. 5% EC = 936 hours.**

FISCAL YEAR

T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR	17,784	17,784	17,784	17,784	17,784	17,784	17,784	17,784
	TEST HOURS	2964	2964	2964	2964	2964	2964	2964	2964
	MISSIONS								

ADDITIONAL INFORMATION

Facility/Capability Title: RANGE FACILITY AND ANALYSIS COMPLEX

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	24	24	24	24	24	24	24
Enlisted	77	76	72	74	74	76	76
Civilian	3	4	4	4	4	4	4
Contractor	2	2	2	2	2	2	2
Total	106	106	102	104	104	106	106

Total Square Footage: 23,028
Test Area Square Footage: 12,988
Office Space Square Footage: 10,040
Tonnage of Equipment: 146,280 lbs

Volume of Equipment: 24,310 cu feet
Annual Maintenance Cost: $581K Annual O&M
Estimated Moving Cost: unknown

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
UNK	UNK	UNK	UNK	UNK	UNK	UNK

GENERAL INFORMATION

Facility/Capability Title: E-9 AIRBORNE PLATFORM/TELEMETRY (AP/TM)

Origin Date: 05/26/94

Service: Air Force **Organization/Activity:** E-9 AP/TM **Location:** Tyndall AFB FL Complete form for FY93

T&E Functional Area: Armament/Weapons **UIC =** TX1C5P9

T&E Test Facility Category: OAR

	T&E	S&T	D&E	IE	T&D	OTHER	= 100%
PERCENTAGE USE:	90%		10%				

BREAKOUT BY T&E FUNCTIONAL AREA (%):

Air Vehicles	5%	2%
Armament/Weapons	80%	7%
EC	5%	1%
Other		

Total In Breakout Must Equal "Percentage Use" On First Line

94

TECHNICAL INFORMATION

(CONCLUDED ON PAGE 27)

Facility/Capability Title: **E-9 AIRBORNE PLATFORM/TELEMETRY (AP/TM)**

Facility Description; Including mission statement: The E-9A AP/TM was procured to extend the data collection capability of the Eglin AFB Gulf Test Range for over-the-horizon mission scenarios. The system consists of (2) deHavilland Dash-8 aircraft which have been structually modified to support a phased-array telemetry receiving antenna and other instrumentation. The E-9A's telemetry system can track and receive signals in the 2200-2400 MHz band from up to five spatially separated sources. Two telemetry streams can be received from each source. This data is recorded onboard the aircraft and is also reradiated in the 1435-1535 MHz band. An airborne sea surveillance radar is used to detect and track boats on the Eglin AFB Gulf Test Range. This information is used to establish a safe launch area for weapons. A UHF voice relay system retransmits voice communications received on up to four operating frequencies in the 225.000-399.975 band. The E-9A is also used to relay control commands, flight termination commands, and status data for aerial targets using the Gulf Range Drone Control Upgrade System (GRDCUS).

Interconnectivity/Multi-Use of T&E Facility: The E-9A is used to relay telemetry data streams to the ground sites around the Eglin AFB Gulf Test Range (D-3, B4A, Tyndall AFB Bldg 1801). As many as ten telemetry data streams may be downlinked in the L-Band TM spectrum. Present data rate capability is limited to 2 MBits/sec. Planned upgrades will increase this capability to 10 MBits/sec. The E-9A also utilizes a HF radio downlink to transmit radar contact data to range safety personnel located in Eglin AFB's Central Control Facility or Tyndall AFB Building 1277.

Type of Test Supported: Air-to-Air Missile Firings, Cruise Missile Launch Testing, Aerial Target Scoring, Aerial Target Control Relay, Electronic Countermeasures Telemetry, Telemetry Capture for Aircraft Testing, Test Range Monitoring

Intrumentation/Assets: There are only two E-9A aircraft in the US inventory. A wide variety of instumentation assets comprise the mission subsystems in each aircraft: (10) Astrolink 602 S-Band telemetry receivers; (10) L-Band telemetry transmitters; (1) spectrum analyzer; (1) oscilloscope; (1) ruggedize 486 PC used to control and monitor telemetry system hardware; (2) Racal Storehorse 14-track analog telemetry recorders [2nd aircraft only has 1 recorder]; (1) phased-array S-Band telemetry receive antenna; (2) L-Band telemetry transmit antennae; (1) AN/APS-128K airborne sea surveillance radar with HF downlink transmit equipment; (1) GRDCUS DLS equipment; and (8) ARC-164 UHF radios for voice relay. Additionally, the cockpit systems include (2) UHF and HF radios. The aircraft is also equipped with a GPS navigation system (CA-code). The AP/TM system also includes a ground support van housing diagnostic test equipment for the telemetry and UHF voice relay subsystems.

Keywords: Air Vehicle, Integrated Weapon System Testing, Operational Test & Evaluation (OT&E), Radar, Missile, Operational Demonstration, Flight Testing, Interoperability, Avionics, Telemetry, E-9A, Airborne Platform, Gulf Range Drone Control Upgrade System (GRDCUS), Sea Surveillance, Ultra-High Frequency (UHF) Relay, Phased Array, High Frequency (HF) Downlink, deHavilland Dash-8, S-Band, L-Band, AN/APS-128K

DETERMINATION OF UNCONSTRAINED CAPACITY

CAPABILITY TITLE: E-9 AIRBORNE PLATFORM/TELEMETRY (AP/TM)

ANNUAL HOURS OF DOWNTIME	1. 6,080
ANNUAL DOWNTIME PER DAY (LINE 1 ÷ 365)	2. 16.7
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3. 7.3

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ)
4	5	6	7	8
OAR Flight Test	2 tests	0.38 missions/test/hour	0.76 missions/hour	5.548 missions

ANNUAL UNCONSTRAINED CAPACITY

2025 missions
or
5329 flight hours

HISTORICAL WORKLOAD

(CONCLUDED ON PAGE 30)

Facility/Capability Title: E-9 AIRBORNE PLATFORM/TELEMETRY (AP/TM)

T&E FUNCTIONAL AREA		FISCAL YEAR 86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR								
	TEST HOURS				37	31	43	33	33
	MISSIONS				17	15	20	10	15
EC	DIRECT LABOR								
	TEST HOURS				32	27	37	28	29
	MISSIONS				15	12	18	9	13
ARMAMENT/WEAPONS	DIRECT LABOR								
	TEST HOURS				464	390	531	405	414
	MISSIONS				217	180	253	125	185
OTHER T&E	DIRECT LABOR								
	TEST HOURS								

	MISSIONS								
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

FACILITY CONDITION

(CONCLUDED ON PAGE 32)

FACILITY/CAPABILITY TITLE: E-9 AIRBORNE PLATFORM/TELEMETRY (AP/TM)

AGE: 6 YEARS **REPLACEMENT VALUE:** $56 MILLION

MAINTENANCE AND REPAIR BACKLOG: 702 HOURS (Aircraft service bulletins and FAA Air Directives valued at $1M)

DATE OF LAST UPGRADE: OCT 93

NATURE OF LAST UPGRADE:

Installation of Telemetry Operator's Console
- Provides real-time antenna control and system status monitoring
- Improves telemetry collection quality

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: E-9A REP UPGRADE

TOTAL PROGRAMMED AMOUNT: $600K (FY94)

SUMMARY DESCRIPTION: The E-9A Resource Enhancement Project funded upgrade is to (1) increase telemetry receive and retransmission data rate capability to 10 MBits/sec, (2) establish a test range participant uplink to the aircraft, (3) add an over-the-horizon UHF command initiate/destruct relay system, and (4) provide data decommutation, display, and test parameter archiving capability. The upgrades to the E-9A's telemetry system will provide OT&E programs with enhanced telemetry reception

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quality, increased data rate capability, and greater over-the-horizon relay capability. Additionally, they will also enable test project engineers to collect and monitor telemetry data without relying on traditional ground-based telemetry stations.

ADDITIONAL INFORMATION

Facility/Capability Title: E-9 AIRBORNE PLATFORM/TELEMETRY (AP/TM)

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	4	4	5	5	5	5	5
Enlisted	5	6	6	6	6	6	6
Civilian	0	0	0	0	0	0	0
Contractor	16	19	19	19	19	19	19
Total	25	29	30	30	30	30	30

Total Square Footage: 104,820 sq ft
Test Area Square Footage: 101,676 sq ft
Office Space Square Footage: 3,144 sq ft
Tonnage of Equipment: 48 tons

Volume of Equipment: 19,920 cu feet
Annual Maintenance Cost: $1.9M Annual O&M
Estimated Moving Cost: unknown

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
$4.075M	$3.218M	$735K	$558K	$581K	$601K	$620K

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FOR OFFICIAL USE ONLY
GENERAL INFORMATION

Facility/Capability Title: SUB SCALE AERIAL TARGETS (SSAT)

Origin Date: 5/5/94

Service: Air Force **Organization/Activity:** SSAT **Location:** Tyndall AFB FL Complete form for FY93

T&E Functional Area: Armaments/Weapons UIC = TX1CFK90

T&E Test Facility Category: OAR

	T&E	S&T	D&E	IE	T&D	OTHER	= 100%
PERCENTAGE USE:	100%						

BREAKOUT BY T&E FUNCTIONAL AREA (%):

Air Vehicles

Armament/Weapons 100%

EC

Other

Total In Breakout Must Equal "Percentage Use" On First Line

GENERAL INFORMATION

Facility/Capability Title: FULL SCALE AERIAL TARGETS (FSAT)

Origin Date: 5/5/94

Service: Air Force **Organization/Activity:** FSAT **Location:** Tyndall AFB FL Complete form for FY93

T&E Functional Area: Armaments/Weapons UIC = TX1CFK90

T&E Test Facility Category: OAR

T&E	S&T	D&E	IE	T&D	OTHER	= 100%

PERCENTAGE USE: 100%

BREAKOUT BY T&E FUNCTIONAL AREA (%):

Air Vehicles

Armament/Weapons 100%

EC

Other

Total In Breakout Must Equal "Percentage Use" On First Line

251

Facility/Capability Title: FULL SCALE AERIAL TARGETS (FSAT)

HISTORICAL WORKLOAD

FISCAL YEAR

T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR								
(NULLO) UNMANNED	TEST HOURS	UNK	116.6	77	71.9	58	55.9	49.8	82.9
QF-106A/B	MISSIONS	UNK	101	108	102	79	88	73	97
OTHER T&E	DIRECT LABOR								
MANNED QF-106A/B	TEST HOURS	UNK	608	620.4	713.1	729.9	1008.3	1047.7	1129.9
	MISSIONS	UNK	608	574	651	696	926	938	896
OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

1504

HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: SUB SCALE AERIAL TARGETS (SSAT)

T&E FUNCTIONAL AREA		FISCAL YEAR 86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR								
SUB SCALE DRONES	TEST HOURS	52	96	76	60	37	95	119	123
BQM-34A/MQM-107D	MISSIONS	123	216	167	131	86	200	219	248
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT								

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ADDITIONAL INFORMATION

Facility/Capability Title: **SUBSCALE** AERIAL TARGETS (SSAT)

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	3	3	3	3	3	3	3
Enlisted	9	10	9	9	9	9	9
Civilian	1	1	1	1	1	1	1
Contractor	56	56	56	56	56	56	56
Total							

Total Square Footage: 48000
Test Area Square Footage: 46600
Tonnage of Equipment: 119
Annual Maintenance Cost: 2231F O&M
(maintenance alone unknown)

Office Space Square Footage: 1400
Volume of Equipment: UNK
Estimated Moving Cost: $25-60M

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
0	0	0	0	0	0	0

ADDITIONAL INFORMATION

Facility/Capability Title: **FULLSCALE** AERIAL TARGETS

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	8	8	8	8	8	8	8
Enlisted	11	11	11	11	11	11	11
Civilian	1	1	1	1	1	1	1
Contractor	74	74	74	74	74	74	74
Total	94	94	94	94	94	94	94

Total Square Footage: 62,000
Test Area Square Footage: 57,000
Office Space Square Footage: 5000
Tonnage of Equipment: 84
Volume of Equipment: UNK
Annual Maintenance Cost: 5260K O&M
(Maintenance Cost UNK)
Estimated Moving Cost: $20-50M

CAPITAL EQUIPMENT INVESTMENT

FY93	FY94	FY95	FY96	FY97	FY98	FY99
0	0	0	0	0	0	0

DETERMINATION OF UNCONSTRAINED CAPACITY

(CONCLUDED ON PAGE 160 IN THIS BOOK)

FACILITY/CAPABILITY TITLE: Fullscale AERIAL TARGETS

ANNUAL HOURS OF DOWNTIME		1	4968 hrs
AVERAGE DOWNTIME PER DAY (LINE 1÷ 365)	13.6 hrs	2	
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	10.4 hrs	3	

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ) 8
OAR	1	1.3 hrs	1.3 hrs	13.5

13.5

ANNUAL UNCONSTRAINED CAPACITY 9

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TOTAL Σ

160

INSTALLATION WORKSHEET
TEST & EVALUATION
TYNDALL AFB, FL.

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: bldg 9352 Fullscale antenna tower
AGE:
REPLACEMENT VALUE: $1837.01
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: Unknown

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION (CONCLUDED ON PAGE 162)

FACILITY/CAPABILITY TITLE: bldg 9351 Fullscale antenna tower
AGE:
REPLACEMENT VALUE: $1837.01
MAINTENANCE AND

REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: Unknown

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: bldg 9350 Fullscale antenna tower
AGE:
REPLACEMENT VALUE: $1837.01
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: Unknown

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: bldg 9349 Fullscale antenna tower
AGE:
REPLACEMENT VALUE: $1837.01
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: Unknown

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

CONCLUDED ON PAGE 164

FACILITY/CAPABILITY TITLE: bldg 9317 Fullscale antenna facilty
AGE:
REPLACEMENT VALUE: $1500.00
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST

UPGRADE: Unknown

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: bldg 9314 Fullscale munitions storage
AGE:
REPLACEMENT VALUE: $8708.85
MAINTENANCE AND REPAIR BACKLOG: None
DATE OF LAST UPGRADE: Unknown

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

(CONCLUDED ON PAGE 167)

TECHNICAL INFORMATION

Facility/Capability Title: FULL SCALE TARGET MAINTENANCE FACILITY (9310)

Facility Description; Including mission statement: Consist of a four bay aircraft maintenance/office building, 21 aircraft parking apron, eight thousand foot runway (over run included) with 4 barriers, and a storage building. The facility is located approximately three and a half miles from main base, accessible by taxi way and highway. Used to maintain, launch and recover, modify, function test, and repair full scale drones.
Interconnectivity/Multi-Use of T&E Facility: Drone runway can be used in case of emergencies with access to main base. Area has standard communications and closed circuit television system for base and to Eglin AFB
Type of Test Supported: Any requiring a full scale unmanned aircraft/target.
Summary of Technical Capabilities: Aircraft (Drone) maintenance facility, sheet metal shop, avionics lab, aircraft parking area, runway, mobile control vehicles, audio/visual comm system, and area for on sight fire fighting capability.
Keywords: Full scale aerial target (FSAT)

TECHNICAL INFORMATION

Facility/Capability Title: Subscale Launch Facility/maintenance facility

Facility Description; Including mission statement: - Sub scale Aerial Target (SSAT) Launch Facility contains (4) Launch pads, Blockhouse, (2) maintenance buildings with large maitenance bays and explosive storage buildings. Mission of the Launch facility is to ensure that subscale drone assets are launched , operated, and land retrieval on a day-to-day basis at Tyndall AFB.

- Maintenance Facility contains a drone maintenance bay, engine repair, sheet metal, avionics/electrical, and augmentation pod shops along with several administrative offices. The facility is responsible for Subscale (i.e., the MQM-107D, BQM-34A) maintenance, recovery and refurbishment.

Interconnectivity/Multi-Use of T&E Facility: Close Circuit TV is sent throughout the base and to Eglin AFB

Type of Test Supported: Any requiring a BQM-34A or MQM-107D Subscale target.

Summary of Technical Capabilities: - Launch Facility provides drone storage, weigth and balance check and Rocket Assist Takeoff (RATO) bottle installation on drone; Launch Control by Blockhouse and storage of RATO bottles and ignitor assets all necessary for successful drone launches. Contractor personnel are responsible for the drone land recovery area east of Tyndall AFB. Area is approximately three square miles and is plowed to reduce drone damage.

- SSAT maintenance facility maintains drones IAW T.O.s, decontaminating SSATs recovered from water, configuring drones for missions, performing final acceptance tests, fueling and delivering drones to the launch facility, maintaining all the CIR pod configurations for subscale and fullscale drones, maintaining the subscale auxiliary equipment and the maintaining the GRDCUS pods.

Keywords: Subscale Aerial Targets (SSAT), Launch Pad, Explosive, Rocket Assist Takeoff (RATO)

FACILITY/CAPABILITY TITLE: bldg 9310 Fullscale maintenance facility
AGE:
REPLACEMENT VALUE: $506770.30
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: Unknown

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

INSTALLATION WORKSHEET
TEST & EVALUATION
TYNDALL AFB, FL.

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: bldg 8529 Subscale launch faclity
AGE:
REPLACEMENT VALUE: $18660.70
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: 30 April 1994

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

(CONCLUDED ON PAGE 171)

FACILITY/CAPABILITY TITLE: bldg 8528 Subscale launch faclity
AGE:
REPLACEMENT VALUE: $18660.70
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: 30 April 1994

MAJOR UPGRADES PROGRAMMED

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Subscale AERIAL TARGETS

ANNUAL HOURS OF DOWNTIME		1	500 hrs
AVERAGE DOWNTIME PER DAY (LINE 1÷ 365)	1.2 hrs	2	
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	22.8 hrs	3	

TEST TYPES 4	TESTS AT ONE TIME 5	WORKLOAD PER TEST PER FACILITY HOUR 6	WORKLOAD PER FACILITY HOUR 7	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ) 8
OAR	1	.5 hrs	.5hrs	11.4

ANNUAL UNCONSTRAINED CAPACITY 9

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TOTAL Σ

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: bldg 8527 Subscale launch faclity
AGE:
REPLACEMENT VALUE: $23459.29
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: 30 April 1994

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

(CONCLUDED ON PAGE 172)

FACILITY/CAPABILITY TITLE: bldg 8526 Subscale launch facility
AGE:
REPLACEMENT VALUE: $30494.19
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: 30 April 1994

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

(CONCLUDED ON PAGE 173)

FACILITY/CAPABILITY TITLE: bldg 8525 Subscale Block house
AGE:
REPLACEMENT VALUE: $167952.33
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: Unknown

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Paint
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: bldg exterior to be painted

2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: bldg 8522 Subscale weigh & balance
AGE:
REPLACEMENT VALUE: $37416.67
MAINTENANCE AND REPAIR BACKLOG: None
DATE OF LAST UPGRADE: Unknown

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____Paint_____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: ____bldg exterior to be painted_____
2. UPGRADE TITLE: _____Hoist repair_____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: __scale hoist to be repaired and painted_

FACILITY CONDITION

(CONCLUDED ON PAGE 174)

FACILITY/CAPABILITY TITLE: bldg 8521 Subscale explosive storage
AGE:
REPLACEMENT VALUE: $21599.98
MAINTENANCE AND REPAIR BACKLOG: None

DATE OF LAST
UPGRADE: Unknown

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____Paint_____
TOTAL PROGRAMMED AMOUNT:_____
SUMMARY DESCRIPTION: ____bldg exterior to be painted_____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT:_____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: bldg 8520 Subscale drone storage
AGE:
REPLACEMENT VALUE: $27195.31
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: Unknown

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____Paint_____
TOTAL PROGRAMMED AMOUNT:_____
SUMMARY DESCRIPTION: ____bldg exterior to be painted_____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT:_____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: bldg 8542 Subscale power facility
AGE:
REPLACEMENT VALUE: $2356.64
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: 30 April 1994

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

(CONCLUDED ON PAGE 176)

FACILITY/CAPABILITY TITLE: bldg 8540 Subscale power facility
AGE:
REPLACEMENT VALUE: $2356.64
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: 30 April 1994

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: bldg 8533 Subscale maintenance, tech shop
AGE:
REPLACEMENT VALUE: $34420.01
MAINTENANCE AND REPAIR BACKLOG: None
DATE OF LAST UPGRADE: 30 April 1994

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____
2. UPGRADE TITLE: _____
TOTAL PROGRAMMED AMOUNT: _____
SUMMARY DESCRIPTION: _____

FACILITY CONDITION

(CONCLUDED ON PAGE 177)

FACILITY/CAPABILITY TITLE: bldg 256 Subscale drone repair facility
AGE:
REPLACEMENT VALUE: $406340.10
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: Unknown

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: NONE
TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:
2. UPGRADE TITLE:
TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:

FACILITY CONDITION

(CONCLUDED ON PAGE 178)

FACILITY/CAPABILITY TITLE: bldg 239 Subscale drone test cell.
AGE:
REPLACEMENT VALUE: $644255.22
MAINTENANCE AND
REPAIR BACKLOG: None
DATE OF LAST
UPGRADE: Unknown

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: NONE
TOTAL PROGRAMMED AMOUNT:
SUMMARY DESCRIPTION:

2. UPGRADE TITLE: _____

TOTAL PROGRAMMED AMOUNT: _____

SUMMARY DESCRIPTION: _____

DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Gulf Range Drone Control Upgrade System (GRDCUS)

ANNUAL HOURS OF DOWNTIME	1. 417.5
ANNUAL DOWNTIME PER DAY (LINE 1 ÷ 365)	2. 1.14
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3. 22.86

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST PER FACILITY HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ)
4	5	6	7	8
Flight test (OAR)	2	.321	.6425	14.69

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ANNUAL UNCONSTRAINED CAPACITY

5360.95

TOTAL Σ =.6425

"TYPICAL"

GENERAL INFORMATION

Facility/Capability Title: Gulf Range Drone Control Upgrade System (GRDCUS)

Origin Date: 05/06/94

Service: AF **Organization/Activity:** 475 WEG (ACC) **Location:** Tyndall AFB FL Complete form for FY93

T&E Functional Area: Armament/Weapons UIC = TX1CFK90

T&E Test Facility Category: OAR

T&E	S&T	D&E	IE	T&D	OTHER	= 100%

PERCENTAGE USE: 100%

BREAKOUT BY T&E FUNCTIONAL AREA (%):

Air Vehicles

Armament/Weapons 100%

EC

Other

Total In Breakout Must Equal "Percentage Use" On First Line

182

FACILITY CONDITION

FACILITY/CAPABILITY TITLE: GRDCUS

AGE: 6 YEARS (since IOC) REPLACEMENT VALUE: $24 Million, (equipment)
MAINTENANCE AND REPAIR BACKLOG: NONE

DATE OF LAST UPGRADE: IN PROGRESS

NATURE OF LAST UPGRADE: Computer systems replacement in progress; scheduled completion Dec 94

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Next Generation Target Control System (NGTCS)

   TOTAL PROGRAMMED AMOUNT: Central Test and Evaluation Investment Program for Tri-Service Application (Tyndall portion unknown)
   SUMMARY DESCRIPTION: replacement target control system applicable to all three services; planned for control of land, sea, and air targets; w Global Positioning Satellite system based for positional information. (ASC/YOT, Eglin, is OPR for program)

2. UPGRADE TITLE: Global Positioning Satellite System Integration

   TOTAL PROGRAMMED AMOUNT: unfunded
   SUMMARY DESCRIPTION: When the system was designed, provisions were made to incorporate the GPS positional data in the control loops w satellite constellation matured. A demonstration of the automatic landing of an aerial target has been accomplished but no additional integration wa This upgrade will be cancelled if the NGTCS is fielded at Tyndall.

TECHNICAL INFORMATION

Facility/Capability Title: Gulf Range Drone Control Upgrade System (GRDCUS)

Facility Description; Including mission statement: The GRDCUS is a multifunctioned command and control system designed for the automated control of aerial targets. It is unique within the USAF as the only system capable of flying four aerial targets in formation without regard to either the radio horizon or the category of target (e.g. full scale or subscale). The system is designed to provide repeatable and predictable presentations of targets to weapons systems under highly dynamic and realistic conditions while documenting the position and performance of each cooperative participant. It includes full mission simulation capability and the capability to selectively command flight termination of targets and missiles (AIM-120).
Interconnectivity/Multi-Use of T&E Facility: The system is interconnected to the Range Control System (GCI), the missile analysis facility and to Eglin AFB for positional data display. If needed, the displays may be sent electronically to a wide-area T.V. cable system. It is also used to pre-fly unusual missions and to maintain currency of the drone controllers via the mission simulation capability.
Type of Test Supported: The system supports the DT&E and OT&E of armament/weapons system under the USAF A/A Weapons System Evaluation Program and the developmental programs of AFDTC which require presentations of aerial targets. In addition to the normal missions, Foreign Military Sales programs are supported as are the other two services' requirements for target presentations over water (Gulf Range). In each even-numbered year, the system is the primary controller for the USAF William Tell Air-to-Air weapons competition.
Summary of Technical Capabilities: Consists of a federated network of six VAX 11/785 and five PDP-11/34 computers and numerous peripherals for control and display functions. In addition, the current system includes fifteen remote sites, microcomputer-based and geographically separated by approximately 100 nautical miles for determination of participant locations by multilateration. Fiber optics and microwave communication systems provide connectivity to other Tyndall facilities as well as Eglin AFB. The computer upgrade will replace the VAXs with IBM RISC 6000 machines. Over-the-horizon position determination is made by using a fleet of contracted MU-2 aircraft until the Global Positioning Navigation System is integrated into the system and targets. A mobile unit with similar capabilities is based at the drone runway for manually controlling the landing of a damaged target.
Keywords: drone, automated control

HISTORICAL WORKLOAD

(CONCLUDED ON PAGE 186 OF THIS BOOK)

Facility/Capability Title: GRDCUS

FISCAL YEAR

T&E FUNCTIONAL AREA		86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
ARMAMENT/WEAPONS	DIRECT LABOR								
	TEST HOURS					631	1013.5	844.5	1098.5
	MISSIONS					246	394	329	427
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

OTHER	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								

Over a 4 yr period, av g test hours = 896.94; average number of missions = 349

ADDITIONAL INFORMATION

Facility/Capability Title: GRDCUS

PERSONNEL

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Officer	1	1	1	1	1	1	1
Enlisted	3	3	3	3	3	3	3
Civilian	0	0	0	0	0	0	0
Contractor	23	23	26	26	26	26	26
Total	27	27	30	30	30	30	30

Total Square Footage: ~16,000 (main facility); self-contained remote sites require fenced compound 25'x25' plus additional area for guy wires extending out 150' -300' from base of each tower.

Test Area Square Footage: N/A

Office Space Square Footage:

Tonnage of Equipment: 67,000 lbs.

Volume of Equipment: not avail

Annual Maintenance Cost: $1.94 million contract cost (parts and materials unknown)

Estimated Moving Cost: $3-20 million; teardown, moving, and setup costs (depending on location and terrain)

CAPITAL EQUIPMENT INVESTMENT FY93	FY94	FY95	FY96	FY97	FY98	FY99
3.1	0	0	0	$11 est	0	0

Document Separator

513 ETS, OFFUTT AFB, NE

Department of Defense

1995 Base Realignment and Closure T&E Joint Cross-Service Group Data Guidance

March 31, 1994

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T&E JOINT CROSS-SERVICE GROUP DATA GUIDANCE

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T&E JOINT CROSS-SERVICE GROUP

SECTION 1: GUIDANCE, STANDARDS, AND ASSUMPTIONS

The Military Departments will use the following information for data collection on each facility that has performed T&E and is still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons for any component (hardware or software), subsystem, system, or platform. Guidance is provided on conducting a cross-service analysis.

1.1 GUIDANCE

1.1.A Guidance for Identification of Test and Evaluation (T&E) Facilities / Capabilities

1.1.A.1 Scope

All DoD installations will be examined to identify facilities that have and are still capable of performing T&E within the three functional areas of air vehicles, electronic combat, and armaments/weapons.

All facilities (tenant and host on the installation) owned by DoD are within scope of this examination.

The Military Departments and Defense Agencies are responsible for submitting the data.

The scope of this examination will include T&E facilities that are funded from any funding source and appropriation (RDT&E, procurement, O&M, training, etc.).

1.1.A.2 T&E Facilities / Capabilities

The definition of a T&E facility/capability to be used for purposes of data collection will be a set of DoD-owned or controlled property (air/land/sea space) or any collection of equipment, platforms, ADPE or instrumentation that can conduct a T&E operation and provide a deliverable T&E product.

The T&E facility can support T&E of components through systems platforms or missions in the following functional areas: air, land, sea, space, C4I, armaments/weapons, electronic combat, nuclear effects, chem/bio, propulsion, environmental effects, guidance, and materials.

The T&E facilities will be grouped under one of the following test facility categories: modeling and simulation, measurement, integration laboratory, hardware-in-the-loop, installed systems, or open air (See Appendix A for definitions). It will typically consist of all of the following components: data collection sensors and instrumentation, data reception and storage, data processing, and data display and reporting.

The scope will include T&E operations from all funding sources (RDT&E, procurement, O&M, training, etc.).

1.1.B Guidance for Military Department Data Collection

The Military Departments will use the T&E facility/capability definitions included within this data call package. In your descriptions of facility technical capabilities include programmed investments/upgrades in Military Department or Defense Agency 1995 Future Years Defense Plan (FY95 FYDP) in support of the President's Budget (PB95). When calculating capacity data, use the guidelines/definitions included in this package.

Data will be collected on all facilities/capabilities that are within the scope defined in section 1.1.A. Data will be collected using Appendix A, Data Forms and Instructions

1.1.C Guidance for Military Department Data Analysis

The Military Departments will use the 95 FYDP as the baseline to calculate costs and savings. Address closure/realignment opportunities at the functional T&E and facility levels. Retain essential technical capabilities for core competencies and technologies. Consider consolidation of subfunctions such as centralized maintenance of common platforms, instrumentation, data processing. Consider retention of difficult-to-replace essential geographic assets (e.g. airspace, ground/terrain, climates, seaports) without regard to "ownership". Recognize adaptability to future technologies. Do not consider environmental cleanup costs/difficulties for closure or downsizing a facility/capability.

1.2 ASSUMPTIONS

Cross-service analyses will use the following assumptions:

1.2.A T&E workload is not a direct function of force structure, but is related to the RDT&E budget and acquisition funding.

1.2.B The FYDP is considered certified data. Information from non-DoD activities will not be used as a basis for analyses.

1.2.C At least one test facility/capability will be required to address any technology in use or nearing maturation. Geographic assets (airspace, ground space, sea space, terrain, climate, physical security) must be adequate. Closure or realignments of laboratories, maintenance depots, and training activities could necessitate consolidation with T&E facilities/capabilities.

1.2.D Evaluation of developing technologies and systems will follow a process that involves a progression of test facilities/capabilities ranging from modeling and simulation, measurements, through hardware-in-the-loop, system integration laboratories, installed-systems, to open air/range testing.

1.2.E Potential for internetting facilities/capabilities can be considered in workload projections if investments to provide internetting capability are programmed.

1.2.F With regard to outsourcing, it will be assumed that work currently performed in-house will remain in-house and that work currently outsourced will remain outsourced.

1.2.G With regard to foreign military sales (FMS), it will be assumed that the FMS workload will continue at FY93 levels into the future (straight-lined).

1.3 FUNCTIONAL AREAS

Three functional areas of T&E facilities/capabilities were selected for specific emphasis during cross-service analyses following analysis of the T&E Reliance study areas. These three areas -- air vehicles, electronic combat, and armament/weapons -- show the greatest potential for cross-service consolidation opportunities; others are predominately or nearly Military Department unique.

Over-arching measures of merit have been developed that are applicable to many T&E facilities/capabilities across the three functional areas. These measures generally relate to the overall demographics of the facility/capability at an installation and are important to evaluating a facility/capability for: overall condition; potential to support current or future contingency, mobilization and future missions; additional workload; and overall Mission Essentiality. Additional data specific to the three functional areas will also be collected. For the purpose of this data collection, the three functional areas are defined as follows:

1.3.A 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 sub-systems (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.

1.3.B Electronic Combat (EC) Systems

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.

1.3.C Armaments / 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.

SECTION 2: CAPACITY & TECHNICAL RESOURCES

Use the forms and accompanying instructions in appendix A to provide answers for this section.

2.1 WORKLOAD

Annual workload will be reported in units as follows: for open air ranges involving flight testing, report test hours and missions. For all other T&E facilities direct labor hours and test hours must be reported; if available, missions must be reported. If an estimation of test hours based on direct labor hours is necessary, refer to the instructions for Determination of Unconstrained Capacity on page 28.

2.1.A Historical Workload

-2.1.A.1 What amount of workload have you performed each year from FY86-93? Use the Historical Workload Form provided in Appendix A of this package.

2.1.B Forecasted Workload

-2.1.B.1 Identify all appropriations (by program element) that generated a requirement for testing or test support, or are expected to generate a requirement for testing/test support in your Military Department (by functional areas of air vehicles, electronic combat (EC), armament/ weapons, and other test) for FY92, FY93, and each year in the FY95 FYDP. The Military Departments will provide total funding amounts appropriated for all PEs identified in each functional area shown above.

THE FUNCTIONAL AREA IS ELECTRONIC COMBAT. DESPITE THE FACT 513 ETS FUNDING IS NOT PROVIDED IN A FASHION THAT WILL RENDER AN ANSWER TO THE ABOVE QUESTION MEANINGFUL, FUNDING BREAKOUT FOR FY93-94 AND ESTIMATES FOR FY 95-00 ARE PROVIDED BELOW. FY92 DATA IS NOT RECOVERABLE BECAUSE THE ELEMENTS NOW COMPRISING 513 ETS THEN EXISTED UNDER A DEFUNCT COMMAND IN THREE SEPARATE DEPUTATES; NEITHER CONSOLIDATED FUNDING RECORDS NOT STANDARDIZED MUTUALLY COMPATIBLE

ACCOUNTING METHODS APPLIED. RECORDS HAVE BEEN ARCHIVED AND KNOWLEDGEABLE PERSONNEL ASSIGNED TO HQ ACC FINANCIAL MANAGEMENT OR DISPERSED. SINCE NO FYDP BREAKDOWN EXISTS FOR THIS UNIT, AMOUNTS FOR FY 95-00 HAVE ESTIMATED.

	FY (AMOUNTS IN THOUSANDS)								
PE	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**00**
11113F	**N/A**	**4917.8**	**2990.9**	**4905.3**	**5000**	**5000**	**5000**	**5000**	**5000**
11126F	**N/A**	**4841.7**	**3272.0**	**4482.1**	**4500**	**4500**	**4500**	**4500**	**4500**
35887F	**N/A**	**273.3**	**0.0**	**251.8**	**250**	**250**	**250**	**250**	**250**
TOTALS	**N/A**	**10042.6**	**6274.9**	**9687.8**	**9750**	**9750**	**9750**	**9750**	**9750**

-2.1.B.2 What amount of test work was performed at your facility (in workyears by functional areas of air vehicles, electronic combat, armament/weapons, other tests, and other) in FY92 & FY93?

ALL LAB HOURS WERE ACCOMPLISHED IN THE ELECTRONIC COMBAT FUNCTIONAL AREA. B-1: 1807 STANDARD HOURS (ALLUSED FOR 513 ETS PRIMARY MISSIONS OF SYSTEM ENGINEERING, MISSION DATA SOFTWARE DEVELOPMENT AND FOT&E), 301OVERIME HOURS (FOR UNIT MISSION ACTIVITIES(, 201 HOURS FOR OUTSIDE AGENCIES (ON A NON-INTERFERENCE, NON REIMBURSED BASIS) FOR A TOTAL OF 2309 (FY93 ONLY; FIGURES NEITHER RECORDED NOR RECOVERABLE FOR FY 92). B-52: 1787 STANDARD HOURS(ALL USED FOR 513 ETS PRIMARY MISSIONS OF SYSTEM ENGINEERING, MISSION DATA SOFTWARE DEVELOPMENT AND FOT&E), 301 OVERTIME HOURS (FOR UNIT MISSIONACTIVITIES), NO HOURS FOR OUTSIDE AGENCIES, FOR A TOTAL OF 2088 (IDENTICAL FOR FY92 AND FY93).

:

2.2 UNCONSTRAINED CAPACITY

-2.2.A Unconstrained capacity is the maximum capacity of this facility, assuming manpower and consumable supplies (excluding utilities) are unlimited, but allowing for expected downtime (maintenance, weather, darkness (daylight), holidays, etc.). Provide your response by filling out the Determination of Unconstrained Capacity Form in accordance with the instructions in

Appendix A.

-2.2.B Is this capacity limited by the physical characteristics of the facility itself, safety or health considerations, commercial utility availability, etc?
No.

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.

Yes. 513 ETS PROVIDES EMERGENCY REPROGRAMMING OF BOMBER EC SYSTEMS IN SUPPORT OF USSTRATCOM AND THEATER CINCS.

-

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. The host is the 513ETS organization, not an installation.

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

Yes. USAF Air Warfare Center (Eglin operations), Weapons and Tactics Center.

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

CLOSURE OF 513 ETS LAB FACILITIES WOULD CAUSE IRREPARABLE HARM TO M513 ETS MISSION AND BOMBER EC PROGRAMMING, TESTING, AND EMPLOYMENT. CLOSURE OF 513 ETS LAB FACILITIES WOULD CAUSE IRREPARABLE HARM TO MISSION OF USAF AIR WARFARE CENTER, AND USAF WEAPONS AND TACTICS CENTER. IMPACT TO USSTRATCOM MISSION UNKNOWN BUT SUBSTANTIAL (AND IS PROBABLY CLASSIFIED).

SECTION 3: MEASURES OF MERIT

This section relates the measures of merit and the required data to the four criteria that have been established for Military Value. The four military value (MV) criteria are:

CRITERION 1: The current and future mission requirements and the impact on operational readiness of the Department of Defense's total force.

CRITERION 2: The availability and condition of land, facilities and associated airspace at both the existing and potential receiving locations.

CRITERION 3: The ability to accommodate contingency, mobilization, and future total force requirements at both the existing and potential receiving locations.

CRITERION 4: The cost and manpower implications.

3.1 OVER-ARCHING MEASURES OF MERIT

The over-arching measures of merit are listed with accompanying questions (or data requirements) intended to elicit standard information upon which the cross-service analyses can be based, and on which the Joint Cross-Service Groups can base their reviews of the Military Department analyses. Additional specific measures of merit are shown under individual functional areas. The numbers in parentheses () before each measure of merit indicate the BRAC selection criteria for military value.

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 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 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.

ADVERSE IMPACT TO MISSION OF USSTRATCOM, THEATER CINC'S, B-1/B52 AIRCREWS, B-1 SPO, HQ ACC. ANY ENTITY REQUIRING HEAVY BOMBERS WITH PROPERLY PROGRAMMED EC SYSTEMS, PROPERLY TESTED , WOULD BE AFFECTED. SINCE 513 ETS IS A CUSTOMER OF TEST RANGES AND LABS (FOR EXAMPLE: EGLIN ELECTROMAGNETIC TEST ENVIRONMENT, REDSTONES ARSENAL'S RADIO FREQUENCY SIMULATION SYSTEM, CHINA LAKE RANGES), IF WE WERE CLOSED EACH RANGE OR LAB WOULD LOSE WHATEVER "BUSINESS" WE PROVIDE.

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.
[One each filled out for B-1 REWST, B-52 Lab]

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.

YES, BUT THIS IS NOT ANTICIPATED TO BE A LIMITING FACTOR ON TEST ACTIVITY. LIMITS OF SPACE WILL BE REACHED WHEN AVAILABLE SPACE IN THE CURRENT BUILDING IS RENTED, WHICH WE ANTICIPATE DOING AFTER OBTAINING APPROVAL FROM HQ ACC. THE SPACE WILL BE USED TO IMPROVE OUR B-52 LAB CAPABILITIES AND TO ALLOW ABANDONMENT OF OFFICE

SPACE ELSEWHERE. WE ANTICIPATE NO EXPANSION IN TEST WORKLOAD, GIVEN OUR CURRENT UNDERSTANDING OF BOMBER ELECTRONIC COMBAT MISSION SUPPORT.

- 3.1.C.2 HOW MUCH COULD WORKLOAD BE INCREASED BEFORE THIS LIMIT WOULD BE REACHED? EXPRESS YOUR ANSWER AS APERCENTAGE OF YOUR CURRENT WORKLOAD.

NONE. THIS QUESTION DOES NOT APPLY BECAUSE LIMITS ON WORKLOAD INCREASE ARE NOT A FUNCTION OF AVAILABLE MANPOWER, TIME, AND INFORMATION INPUT (SUCH AS FROM INTELLIGENCE SOURCE). THE QUESTION IS IRRELEVANT TO THE BRAC SURVEY BECAUSE 513 ETS FACILITIES ARE NOT INDUSTRIALLY FUNDED AND WE DO NOT RELY ON OTHER USERS TO SUPPORT ANY OF OUR ACTIVITIES. FURTHER INFORMATION IS CLASSIFIED.

- 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.
No.

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

50	**1,048,900**
100	**1,598,900**
150	**NOT AVAILABLE**
200	**5,984,800**

- 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.

200

N/A. 513ETS has an indoor ground test avionics facility with nonexistent explosion/contamination risks.

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

- 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? **N/A**

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. See forms for B-52, B-1 labs for descriptions.

-3.1.D.2 Are specialized targets required to support this facility? Yes/no. If yes, explain.

No.

-3.1.D.2.A Have the specialized targets been validated? Yes/no. If yes, by whom?

N/A

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 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.

NO EXPANSION OF OUTPUT OF T&E ACTIVITY IS NOT PLANNED, NOR POSSIBLE IN AREAS NOT APPLYING (OTHER THAN EC).

-3.1.E.1.A Can you accept new T&E workload different from what you are currently performing? Yes/no. If yes, identify by T&E functional area and test type.

No.

-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.

N/A

-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. Secret Special Access.

-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.

No.

3.1.F Uniqueness (MV I) - Measure of Merit: *Extent to which the facility is one-of-a kind.*

YES. ONLY USER-OWNED BOMBER EC GROUND TEST FACILITY

-3.1.F.1 Is this a one-of-a-kind facility within the DoD? Yes/no. If yes, describe.

Yes.NO OTHER USER-OWNED/ ORIENTED BOMBER EC EC GROUND TEST FACILITIES EXIST.

-3.1.F.1.A Within the US Government? Yes/no. If yes, describe

Yes. NO OTHER USER-OWNED/ ORIENTED BOMBER EC EC GROUND TEST FACILITIES EXIST.

-3.1.F.1.B Within the US? Yes/no. If yes, describe.

Yes. .NO OTHER USER-OWNED/ ORIENTED BOMBER EC EC GROUND TEST FACILITIES EXIST.

-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 FY93 by Military Department.

No.

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?

THE TOTALITY OF DOD TEST RANGES IS AVAILABLE FOR BOMBER ELECTRONIC COMBAT TEST USE, GIVEN THAT APPROPRIATE RANGE SYSTEMS ARE AVAILABLE FOR TESTING. 513 ETS DOES NOT HAVE SQUARE MILEAGE FIGURES FOR RANGES IN ITS FILES NOR DOES IT POSSES ANY MEANS TO COMPILE THESE DATA WITHIN SURVEY TIME CONSTRAINTS. IT IS CRITICAL TO RECALL THAT 513 ETS IS A USER OF TEST RANGES. 513 ETS DOES NOT OWN NOR IS IT RESPONSIBLE FOR AIR/LAND/SEASPACE FOR ANY OPEN-AIR RANGE FACILITY. 513 ETS BOMBER ELECTRONIC COMBAT TEST CAPABILITY IS DEPENDENT ON RANGES TO PROVIDE TEST AREAS AND ON BOMBER MAIN OPERATING BASES TO PROVIDE AIRCRAFT. FURTHER SUPPORTING MATERIAL IS CLASSIFIED.

-3.1.G.2 Who owns and or controls the land under the restricted airspace you use?

WE HAVE NO IDEA WHO CONTROLS/OWNS THE LAND UNDER RESTRICTED AIRSPACE WE USE, SINCE WE ARE ONLY

CUSTOMERS FOR THE RANGE INVOLVED. THE TOTALITY OF DOD RANGES IS AVAILABLE FOR BOMBER ELECTRONIC COMBAT TEST USE, GIVEN THAT APPROPRIATE RANGE SYSTEMS ARE AVAILABLE FOR TESTING. 513 ETS DOES NOT HAVE SQUARE MILEAGE FIGURES FOR RANGES IN ITS FILES NOR DOES IT POSSES ANY MEANS TO COMPILE THESE DATA WITHIN SURVEY TIME CONSTRAINTS. IT IS CRITICAL TO RECALL THAT 513 ETS IS A USER OF TEST RANGES. 513 ETS DOES NOT OWN NOR IS IT RESPONSIBLE FOR AIR/LAND/SEASPACE FOR ANY OPEN-AIR RANGE FACILITY (WE DO NOT KNOW WHO OWNS/CONTROLS SUCH LANDS; IT HAS NEVER PROVED IMPORTANT TO TEST ACCOMPLISHMENT). DURING THE PAST 25 YEARS, 513ETS AND ITS PREDECESSOR ORGANIZATIONS HAVE CONDUCTED BOMBER ELECTRONIC COMBAT (EC) TESTING ON EVERY KNOWN DOD RANGE FACILITY. THEY OWN/CONTROLLED BY ALL SERVICE DEPARTMENTS. 513 ETS DOES NOT OWN NOR IS IT RESPONSIBLE FOR AIR/LAND/SEASPACE FOR ANY OPEN-RANGE FACILITY. 513 ETS BOMBER EC CAPABILITY IS DEPENDENT ON RANGES TO PROVIDE TEST AREAS AND ON BOMBER MAIN OPERATING BASSES TO PROVIDE AIRCRAFT. FURTHER SUPPORTING MATERIAL IS CLASSIFIED.

-3.1.G.3 How much of this is Restricted Airspace, and what altitude limits are associated with the restricted areas?

THE AMOUNT OF RESTRICTED AIRSPACE AND OUR MEANS OF UTILIZATION HAS NEVER PROVEN OF INTEREST. THE TOTALITY OF DOD RANGES)RESTRICTED AIRSPACE AND OTHERWISE) IS AVAILABLE FOR BOMBER ELECTRONIC COMBAT TEST USE, GIVEN THAT APPROPRIATE RANGE SYSTEMS ARE AVAILABLE FOR TESTING. 513 ETS DOES NOT HAVE SQUARE MILEAGE FIGURES FOR RANGES IN ITS FILES NOR DOES IT POSSES ANY MEANS TO COMPILE THESE DATA WITHIN SURVEY TIME CONSTRAINTS. IT IS CRITICAL TO RECALL THAT 513 ETS IS A

USER OF TEST RANGES. 513 ETS DOES NOT OWN NOR IS IT RESPONSIBLE FOR AIR/LAND/SEASPACE FOR ANY OPEN-AIR RANGE FACILITY. AIRCRAFT WE CONFIGURE FOR A GIVEN TEST CONFORM TO THE RETRCTIONS DICTATED BY THE RANGE FACILITY INQUESTION AND BY THE NATURE OF THE TEST. 513 ETS BOMBER EC CAPABILITY IS DEPENDENT ON RANGES TO PROVIDE TEST AREAS AND ON BOMBER MAIN OPERATING BASSES TO PROVIDE AIRCRAFT. FURTHER SUPPORTING MATERIAL IS CLASSIFIED.

-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)? Dimensions? Will it support simultaneous users? Yes/no.

NONE

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

N/A

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

513ETS HAS NO DOCUMENTATION ON KNOWN/ PROJECTED AIRSPACE PROBLEMS AT ANY RANGES IT UTILIZES. 513 ETS DOES NOT OWN NOR IS IT RESPONSIBLE FOR AIR/LAND/SEASPACE FOR ANY OPEN AIR RANGE FACILITY. 513 ETS BOMBER ELECTRONIC COMBAT TEST CAPABILITY IS DEPENDENT ON RANGES TO PROVIDE TEST AREAS AND ON BOMBER MAIN OPERATING BASES TO PROVIDE AIRCRAFT.

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

513 ETS POSSESSES NO MAXIMUM STRAIGHTLINE SEGMENTS IN AIRSPACE BECAUSE 513 ETS DOES NOT OWN NOR IS IT RESPONSIBLE FOR AIR/LAND/SEASPACE FOR ANY OPEN AIR RANGE FACILITY. 513 ETS BOMBER ELECTRONIC COMBAT TEST CAPABILITY IS DEPENDENT ON RANGES TO PROVIDE TEST AREAS AND ON BOMBER MAIN OPERATING BASES TO PROVIDE AIRCRAFT.

-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.

513 ETS HAS USED ANY GENERAL AIRSPACE LYING BETWEEN THE RANGE AND BOMBER MAIN OPERATING BASE UTILIZED FOR A GIVEN TEST. BOMBER ELECTRONIC COMBAT (EC) TESTING HAS REPEATEDLY BEEN DETERMINED TO POSE NO MORE HAZARD TO THE HUMAN ENVIRONMENT THAT DO NORMAL BOMBER TRAINING MISSIONS. ASIDE FROM FLIGHT TO AND FROM THE RANGE IN QUESTION, BOMBER EC TESTING INVOLVES ONE OR MORE OF THE FOLLOWING:

A. EMISSION OF RADIO FREQUENCY ELECTROMAGNETIC ENERGY AT VARYING FREQUENCIES AND INTENSITIES.

B. CARRY AND RELEASE OF CHAFF (CARDBOARD PACKETS CONTAINING ALUMINUM AND GLASS FIBER STRIPS) IN VARYING QUANTITIES.

C. CARRY AND RELEASE OF DECOY FLARES (EXACT COMPOSITION IS CLASSIFIED) WHICH EITHER BURN OUT BEFORE GROUND IMPACT OR ARE DISPENSED UNDER STRICT RANGE CONTROL IN APPROVED AREAS.

TO DATE, FLIGHT BETWEEN BOMBER MAIN OPERATING BASES HAS NEVER BEEN RESTRICTED BY THE NATURE OF BOMBER EC TESTING. WE ANTICIPATE NO RESTRICTIONS. 513 ETS DOES NOT OWN NOR IS IT RESPONSIBLE FOR AIR/LAND/SEASPACE FOR ANY OPEN AIR RANGE FACILITY. 513 ETS BOMBER ELECTRONIC COMBAT TEST CAPABILITY IS DEPENDENT ON RANGES TO PROVIDE TEST AREAS AND ON BOMBER MAIN OPERATING BASES TO PROVIDE AIRCRAFT.

3.1.H Geographic/Climatological Features (MV II) - Measure of Merit: *Extent to which types of climatic/geographic conditions represent world-wide operational conditions.*
N/A for All 3.1.H, not an open-air range facility.

-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/riverine, desert, and sea. State the area of each in square miles.

N/A

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

N/A

-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.

N/A

-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?

N/A. NOT AN OPEN-AIR FACILITY, AND ALL INTERNAL CLIMATES ARE CONTROLLED.

-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%?

N/A. NOT AN OPEN- AIR FACILITY, AND ALL INTERNAL CLIMATES ARE CONTROLLED.

-3.1.H.6 What is the number of test missions per year (1985 - 1993) canceled due to weather?

NONE. DURING MAY-AUGUST, 2-3 HOURS PER MONTH ARE LOST DUE TO LIGHTNING HAMPERING COMPUTER OPERATIONS IN THE VICINITY. THIS DELAYS TESTS BUT NEVER CANCELS THEM.

-3.1.H.7 What is the number of test days per year (1985 - 1993) canceled due to weather?

NO TEST DAYS LOST. DURING MAY-AUGUST, 2-3 HOURS PER MONTH ARE LOST DUE TO LIGHTNING HAMPERING COMPUTER OPERATIONS IN THE VICINITY. THIS DELAYS TESTS BUT NEVER CANCELS THEM. THE OVERWHELMING MAJORITY OCCURS DURING SWING SHIFT (EVENING) OPERATIONS.

-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?

N/A. NOT AN OPEN-AIR RANGE FACILITY, WEATHER IS NOT A FACTOR. WITH REGARD TO ACTIVITY ON OPEN-AIR RANGES WHERE BOMBER ELECTRONIC COMBAT TESTS ARE FLOWN WE NO RECORDS OF SUCH INFORMATION. IT IS CRITICAL TO RECALL THAT 513 ETS USES OPEN-AIR RANGES, AND IS NOT RESPONSIBLE FOR THEIR OPERATION.

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

N/A. NOT AN OPEN-AIR RANGE FACILITY, WEATHER IS NOT A FACTOR. WITH REGARD TO ACTIVITY ON OPEN-AIR RANGES WHERE BOMBER ELECTRONIC COMBAT TESTS ARE FLOWN WE NO RECORDS OF SUCH INFORMATION. IT IS CRITICAL TO RECALL

THAT 513 ETS USES OPEN-AIR RANGES, AND IS NOT RESPONSIBLE FOR THEIR OPERATION.

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

0.6% of yearly normal operating time. only activity restrictions that have ever occurred happen in the months may through august, when a maximum of 1.8% of standard operating hours per month have been lost. this is due to lighting restricting computer operations, and always happens during the swing (evening) shift.

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. Unmanned air vehicles and cruise missiles are included.

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.

N/A. 513 ETS DOES NOT OWN NOR IS IT RESPONSIBLE FOR AIR/LAND/SEASPACE FOR ANY OPEN-AIR RANGE FACILITY. 513 ETS BOMBER ELECTRONIC COMBAT TEST CAPABILITY IS DEPENDENT ON RANGES TO PROVIDE TEST AREAS AND ON BOMBER MAIN OPERATING BASES TO PROVIDE AIRCRAFT.

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

N/A513 ETS DOES NOT OWN NOR IS IT RESPONSIBLE FOR AIR/LAND/SEASPACE FOR ANY OPEN-AIR RANGE FACILITY. 513 ETS BOMBER ELECTRONIC COMBAT TEST CAPABILITY IS DEPENDENT ON RANGES TO PROVIDE TEST AREAS AND ON BOMBER MAIN OPERATING BASES TO PROVIDE AIRCRAFT.

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

N/A 513 ETS DOES NOT OWN NOR IS IT RESPONSIBLE FOR AIR/LAND/SEASPACE FOR ANY OPEN-AIR RANGE FACILITY. 513 ETS BOMBER ELECTRONIC COMBAT TEST CAPABILITY IS DEPENDENT ON RANGES TO PROVIDE TEST AREAS AND ON BOMBER MAIN OPERATING BASES TO PROVIDE AIRCRAFT.

-3.2.A.4 Over land or water? What size and shape (length and width)?

N/A 513 ETS DOES NOT OWN NOR IS IT RESPONSIBLE FOR AIR/LAND/SEASPACE FOR ANY OPEN-AIR RANGE FACILITY. 513 ETS BOMBER ELECTRONIC COMBAT TEST CAPABILITY IS DEPENDENT ON RANGES TO PROVIDE TEST AREAS AND ON BOMBER MAIN OPERATING BASES TO PROVIDE AIRCRAFT.

-3.2.A.5 Are there restrictions you must observe to use this space? Yes/no. If yes, explain.

N/A 513 ETS DOES NOT OWN NOR IS IT RESPONSIBLE FOR AIR/LAND/SEASPACE FOR ANY OPEN-AIR RANGE FACILITY. 513 ETS BOMBER ELECTRONIC COMBAT TEST CAPABILITY IS DEPENDENT ON RANGES TO PROVIDE TEST AREAS AND ON BOMBER MAIN OPERATING BASES TO PROVIDE AIRCRAFT. THERE ARE NO RESTRICTIONS (OTHER THAN NORMAL AIR TRAFFIC CONTROL ROUTING) ON BOMBER FLIGHT TO AND FROM RANGES. NO TEST RANGE IS OUT OF REACH.

-3.2.A.6 What is the maximum number of simultaneous users?
N/A 513 ETS DOES NOT OWN NOR IS IT RESPONSIBLE FOR AIR/LAND/SEASPACE FOR ANY OPEN-AIR RANGE FACILITY. 513 ETS BOMBER ELECTRONIC COMBAT TEST CAPABILITY IS DEPENDENT ON RANGES TO PROVIDE TEST AREAS AND ON BOMBER MAIN OPERATING BASES TO PROVIDE AIRCRAFT

-3.2.B Airfield and Facility Characteristics (MV II) - Measure of Merit: *Extent of air vehicle infrastructure to support T&E operations.*

N/A for all 3.2.B, not an airfield facility.

-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.

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

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

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

-3.2.B.5 Is there a size, weight, maintenance or mission limitation that would affect test operations? If so, describe the limitation(s).
N/A

-3.2.B.6 Including hangers and ramp space, how many fighter size aircraft could you support? Large multi-engine aircraft? Rotary wing? UAV? Cruise missiles?
N/A

-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)

BOMBER EC SYSTEM TESTING; INSTALLED EC SYSTEMS OF OPERATIONAL AIRCRAFT ARE CHECKED PRIOR TO FLIGHT AND INSTRUMENTATION INSTALLED ABOARD FOR TEST DATA RECORDING PURPOSES. MISSIONS ARE FLOWN FROM BOMBER MAIN OPERATING BASES (MOBS) TO APPROPRIATE OPEN-AIR RANGES; EC SYSTEM TROUBLESHOOTING & PRE-TEST CHECKOUT.

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

***Fixed* facilities do not exist; however, 513ETS has transportable flightline checkout equipment it moves to bomber MOBs to wring out EC systems prior to tests.**

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

Two B-1Bs *or* two B-52s for full EC system testing; limited simultaneous operations can involve testing at separate MOBs.

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

N/A

-3.2.C.5 What sorts of missions (e.g. air-to-air, air-to-ground and refueling) can be flown within local airspace?

N/A

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

Anticipate one, by end CY94.

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

N/A

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

None. 513ETS is not assigned aircraft.

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?

B-1: 512
B-52: 60

-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?

B-1: 512, any type, 90 dB dynamic range, 10 RF channels in bands from 0.5 to 18 GHz [2 Bands 4/5 channels, 3 Band 6 channels, 1 Band 7 channel, 1 Band 8 channel, and 3 Bands 7/8 channels] EITHER FREESPACE OR INJECTED;

B-52: 5, any type (only 2 in PRI synchronization), 0.5-18 GHz, 15DB power out, EITHER freespace or injected (can simulate up to four of the B-52 EC systems) FURTHER SUPPRTING INFORMATION IS CLASSIFIED.

-3.3.A.3 Are the threat software models and simulators (software/hardware) validated? Yes/no. If yes, by whom?

Yes, by NAIC (via EWIR)

-3.3.A.4 Do you conduct open loop testing? Reactive? Closed loop? Yes/no for each.

Open and closed-loop.

-3.3.A.5 What is the threat representation (fidelity) and density?

Fidelity validated by NAIC data, density as per limit of total signal coverage. WE HAVE NO KNOWLEDGE OF FIDELITY BEYOND WHAT IS APPROVED FOR OUR USE BY NAIC; 513 ETS ACCOMPLISHES NO VALIDATING FUNCTION. FURTHER DETAILS ON DENSITY ARE CLASSIFIED.

-3.3.A.6 Are you capable of simulating land threats? Sea threats? Combined land/sea threats? Yes/no. If yes, describe.

YES, WE ARE CAPABLE OF SIMULATING LAND, SEA, AND COMBINED LAND/SEA THREATS. ANY EWIR LISTING UP TO LIMIT OF SIMULTANEOUS SIGNALS, FURTHER INFORMATION IS CLASSIFIED.

-3.3.A.7 What geographic dispersion can be simulated?

B-1: to limit of ASQ-184 Controls/Displays softwareACTUAL GEOGRAPHIC AREAS OF INTEREST CLASSIFIED

B-52: None GEOGRAPHIC DISPERSION NOT POSSSIBLE.

-3.3.A.7.A Threat lay down?_ **NO LIMIT EXCEPT THAT OF B-1 DEFENSIVE ORDER OF BATTLE SOFTWARE(CONTROLLED BY ASQ-184): EXACT LIMIT CLASSIFIED)**

-3.3.A.7.B Representative distance? **NO LIMIT**

-3.3.A.8 Are the threats moveable (i.e. dynamic) within a test scenario? relocatable to new scenarios? yes/no

B-1: yes
B-52: no

-3.3.A.9 Is the facility interlinked with off-site threats? Yes/no. If yes, how are you linked?

No.

-3.3.A.10 Is there a limit on simultaneous users? Yes/no. If no, explain

Yes. B-1: One. B-52: four, if each is working a different B-52 EC system.

3.3.B Test Article Support (MV II) - Measure of Merit: *Extent to which test support satisfies weapon system test requirements.*
[Certification applies to all questions in 3.3.B]

-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.

-3.3.B.2 What is the number of simultaneous countermeasures that can be evaluated?

B-1: to limit of ALQ-161.
B-52: part of ALQ-172 capacity plus three (for other EC systems)

-3.3.B.3 What range of spectra can be tested and evaluated?

RF. 0.5-18 GHz.

-3.3.B.4 What are the available spectra?
RF.
-3.3.B.5 Do you have a scene generation capability? Yes/no. If yes, describe.
No.

3.4 ARMAMENTS / 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.

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.

-3.4.A.1 Do you currently test directed energy weapon systems? Yes/no.

No.

If yes, explain. Describe the power source(s) you have available. What is your maximum downrange distance?

N/A

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.

-3.4.B.1 Ground Space

-3.4.B.1.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?

QUESTION DOES NOT APPLY AND ANSWER IS CONSISTENT WITH EARLIER PORTIONS OF OUR SURVEY RESPONSE. WITH REGARD TO TEST FACILITIES, WE POSSES INDOOR BOMBER ELECTRONIC GROUND TEST LABS FOR THE B-1 AND B-52 WITH NO LAND NOR WATER SPACE INVOLVED. WITH REGARD TO TEST CAPABILITIES, WE POSSESS INSTRUMENTATION, MAINTENANCE SUPPORT AND LIMITED OPERATIONS PERSONNEL CAPABLE OF OUTFITTING B-1S AND B-52S AND FLYING THEM FROM BOMBER MAIN OPERATING BASES TO OPEN-AIR RANGES FOR FLIGHT TESTING. WITH REGARD TO TEST RANGES, WE ARE CUSTOMERS FOR DOD CONTROLLED OPEN-AIR RANGES TO GATHER FLIGHT TEST DATA. WE ARE NOT A RANGE CONTROLLING AGENCY AND POSSES NO LAND/WATERSPACE SUITABLE FOR ANY FLIGHT TESTING.
FOR INFORMATION ABOUT BOMBER WEAPON RELEASE AND NAVIGATION SYSTEM FOLLOW-ON OPERATIONAL TEST AND EVALUATION, PLEASE CONTACT THE 49TH TEST & EVALUATION SQUADRON, 965 TWINING DR SUITE 102, BARKSDALE AFB LA 71110-2415, DSN 781-8821.

-3.4.B.1.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.

N/A

-3.4.B.1.C What are the maximum ranges (nautical miles) you can test, by type weapon?

N/A

3.4.B.2 Test Operations

-3.4.B.2.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:

--Unguided 2000 pound-class ballistic weapon

---live?

---inert?
--Guided weapon (e.g., GBU-24 class)
---live?
---inert?
--Stand-off weapon (e.g., AGM-130 class)
---live?
---inert?
--Short-range missile (e.g., AIM-9)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL
--Long-range missile (e.g., AIM-120)
---below 5000 feet MSL
---between 5000 and 20,000 feet MSL
---above 20,000 feet MSL

[N/A for all]

-3.4.B.2.B Were flight termination systems required? Yes/no.
N/A

-3.4.B.2.C If no missions were scheduled in a category, give the reason(s).
N/A

-3.4.B.2.D 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.
N/A

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FORM 1
GENERAL INFORMATION (REWST)

Facility/Capability Title: B-1 REWST Facility Subsection, Bomber Electronic Combat Ground Test Facility

Origin Date: 20 May 94

Notes:

a "Other" consists of tactics development & evaluation, mission data software support, rapid reprogramming, and related activities

513 ETS OFFUTT AFB

Service: USAF

Organization/Activity: 513ETS

Location: Offutt AFB NE Complete form for FY93

T&E Functional Area: Electronic Combat

UIC = UNK

T&E Test Facility Category Electronic Combat

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	40				10	50[a]	100
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles							
Armament/Weapons							
EC	40				10	50	100

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FORM 1
GENERAL INFORMATION (B-52 LAB)

Facility/Capability Title: B-52 Lab Subsection, Bomber Electronic Combat Ground Test Facility

Origin Date: 20 May 94

Notes:

b"Other" consists of tactics development & evaluation, mission data software support, rapid reprogramming, and related activities

513 ETS OFFUTT AFB

Service: USAF

Location: Offutt AFB NE Complete form for FY93

Organization/Activity: 513ETS

T&E Functional Area: Electronic Combat

UIC = UNK

T&E Test Facility Category Electronic Combat

	T&E	S&T	D&E	IE	T&D	OTHER	=100%
PERCENTAGE USE:	30				10	60[b]	100
BREAKOUT BY T&E FUNCTIONAL AREA (%)							
Air Vehicles							
Armament/Weapons							
EC	30				10	60	100

513 ETS OFFUTT AFB

FORM 2, TECHNICAL INFORMATION

Facility/Capability Title: Bomber Electronic Combat Ground Test Facility [Includes B-1 Reprogrammable EW System Test {REWST} Facility and B-52 Lab]

Facility Description; Including mission statement: **Unit Mission:** The Combat Air Forces' technical focal point for bomber electronic combat (EC). Develops bomber EC employment guidance. **Activities:** Creates bomber EC avionics software and rapidly reprograms systems to meet threat changes during conflict. Designs/executes test and foreign materiel exploitation (FME) programs to evaluate capabilities and limitations. Provides critical expertise for EC avionics modifications/acquisitions. Ground installation of B-1B and B-52 EC systems. Open loop digital simulation, static and dynamic, of emitters to simulate bomber EC systems. Capabilities extend across all categories except open air. Used in concert with open air ranges and such lab facilities as GWEF and RFSS to embody bomber EC test capability. Physically located at 103 E. Mission, Bellevue NE, adjacent to Offutt AFB.
Interconnectivity/Multi-Use of T&E Facility: None.
Type of Test Supported: FOT&E of bomber EC systems for B-1, B-52, off airframe (ground hot mockup); bomber EC open air. Includes rapid reprogramming, independent verification/validation of software changes, development of new mission data software, in-service EC system engineering, aircrew familiarization, mission guide development, offensive/defensive system integration.

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513 ETS OFFUTT AFB

Summary of Technical Capabilities: **B-1B:** Reprogrammable EW Systems Test (REWST) Facility; CEESIM, SEARS, AVSIM; ADRS, Aladin, GFRS, FTDAS, MAVS; EASTE, EASS, MTV, DSIP. **B-52:** EW Operational Test System (EWOTS); GRiD Recorder; Sensor Integration LCI Recorder, Saylor Recorder, TWS Target Generator.
Keywords: EC, Bomber, ALQ-161, ALQ-172(V), ALQ-155, ALR-46, ALQ-153, HITL, MF

513 ETS OFFUTT AFB

Form 3, Additional Information

Personnel Numbers:

Personnel Category[b]	*FY93*	*FY94*	*FY95*	*FY96*[a]	*FY97*	*FY98*	*FY99*	*FY00*
Officer	29	29	29	N/A	N/A	N/A	N/A	N/A
Enlisted	27	27	27	N/A	N/A	N/A	N/A	N/A
Gov Civilian	8	8	8	N/A	N/A	N/A	N/A	N/A
Contractor	4	4	4	N/A	N/A	N/A	N/A	N/A

[a]Numerical breakdown not specified in FYDP.

[b]Task assignment for FOT&E, IV&V, lab work, developmental engineering, etc. do not allow dedicated assignment against 513ETS ground test facilities. Figures are composites of work-year activities in the Labs.

Item	*REWST Subsection*	*B-52 Lab Subsection*
Square Footage	4176	1440
Tonnage	20	20
Volume	41760	40000
Annual Maintenance Cost[c]	$1,256,000	$1,200,000
Moving Cost[d]	$130,000	$130,000
Capital Equipment Investments	$2,500,000	None

[See next page for notes]

513 ETS OFFUTT AFB

[c]Some maintenance functions shared between B-1, B-52 portions

[d]Commonality of communications/computer, maintenance, logistic and administrative support render moving one subsection without the other inefficient and impractical

HDN 822

FORM 4
FACILITY CONDITION

FACILITY/CAPABILITY TITLE: B-1 Reprogrammable EW System Test {REWST} subsection, Bomber Electronic Combat Ground Test Facility

AGE: 2 years REPLACEMENT VALUE: $46,977,500, including equipment

MAINTENANCE AND REPAIR BACKLOG: N/A

DATE OF LAST UPGRADE: Ongoing, Apr-Sep 94

NATURE OF LAST UPGRADE: New instrumentation system and measurement and verification system along with CEESIM 8K upgrade

MAJOR UPGRADES PROGRAMMED

1. UPGRADE TITLE: Additional Channels for CEESIM

TOTAL PROGRAMMED AMOUNT: $500,000 [already obtained from OC-ALC]

SUMMARY DESCRIPTION: Provide two more channels for CEESIM for greater, more realistic threat scenarios and emitter backgrounds

513 ETS OFFUTT AFB

FACILITY/CAPABILITY TITLE: B-52 Test Facility Subsection, Bomber Electronic Combat Ground Test Facility

AGE: 8 years 5 months REPLACEMENT VALUE: $38,780,00, including equipment

MAINTENANCE AND REPAIR BACKLOG: N/A

DATE OF LAST UPGRADE: Mar 94

NATURE OF LAST UPGRADE: Addition of instrumentation for data Collection/transmission, JAWS, Honeywell 96, DCS upgrade [see page 2]

MAJOR UPGRADES PROGRAMMED

UPGRADE TITLE: Facility expansion

TOTAL PROGRAMMED AMOUNT: $438,000, to be obtained via FINPLAN submission

SUMMARY DESCRIPTION: Expansion into adjacent floorspace and construction of larger secure screen rooms. Will allow parallel permanent ground hot bench setup of B-52 EC systems, setup for ground test of B-52 Sensor Integration (SI), and improvements to measuring capabilities and dynamic signal radiation/measurement.

ADDITIONS, completed Mar 94:

1. JAWS- cost $800,000, collection of ECM waveforms for real-time or post mission analysis.

2. DCS upgrade- Software upgrade to the computer.

Honeywell 96- Playback of actual threat waveforms.

464 Test Set- Flight line tester.

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FORM 5, HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Bomber Electronic Combat Ground Test Facility [REWST (B-1 Reprogrammable EW System Test) Subsection]

T&E FUNCTIONAL AREA		FISCAL YEAR 86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR							89280	121860
	TEST HOURS							2480	3385
	MISSIONS							N/A	N/A
ARMAMENT/WEAPONS	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT								
	TEST HOURS								
	MISSIONS								

Note: REWST began operation in Jan 92, so FY 92 hours are based on 9 months.

#test hrs workload exceeds unconstrained capac. est.

FORM 5, HISTORICAL WORKLOAD

FACILITY/CAPABILITY TITLE: Bomber Electronic Combat Ground Test Facility [B-52 Lab Subsection]

T&E FUNCTIONAL AREA		FISCAL YEAR 86	87	88	89	90	91	92	93
AIR VEHICLES	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
EC	DIRECT LABOR	71584	80992	80992	80992	80992	80992	80992	80992
	TEST HOURS	2237	2531	2531	2531	2531	2531	2531	2531
	MISSIONS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ARMAMENT/WEAPONS	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER T&E	DIRECT LABOR								
	TEST HOURS								
	MISSIONS								
OTHER	DIRECT								
	TEST HOURS								
	MISSIONS								

test hrs workload exceeds unconstrained cap. est.

Note: FY86 was first year of B-52 Lab operations.

2.3/ HSW

513 ETS OFFUTT AFB

FORM 6, DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Bomber Electronic Combat Ground Test Facility [B-1 Reprogrammable EW System Test {REWST} Facility Subsection]

ANNUAL HOURS OF DOWNTIME	1	1090
AVERAGE DOWNTIME PER DAY (LINE 1÷ 365)	2	3
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	21

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST FACILITY PER HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ)
4	5	6	7	8
B-1 EC	1	36	36	756
				ANNUAL UNCONSTRAINED CAPACITY
				9
				275940

FORM 6, DETERMINATION OF UNCONSTRAINED CAPACITY

FACILITY/CAPABILITY TITLE: Bomber Electronic Combat Ground Test Facility [B-52 Lab Subsection]

ANNUAL HOURS OF DOWNTIME	1	915
AVERAGE DOWNTIME PER DAY (LINE 1÷ 365)	2	2.5
AVERAGE HOURS AVAILABLE PER DAY (24 - LINE 2)	3	21.5

TEST TYPES	TESTS AT ONE TIME	WORKLOAD PER TEST FACILITY PER HOUR	WORKLOAD PER FACILITY HOUR	UNCONSTRAINED CAPACITY PER DAY (LINE 3 X TOTAL Σ)
4	5	6	7	8
B-52 EC	1	32	32	688

ANNUAL UNCONSTRAINED CAPACITY
9
251120