

UNITED STATES ARMY
ELECTRONIC PROVING GROUND

A. General

1. Mission

The mission of the U. S. Army Electronic Proving Ground (USAEPG) is to:

- a. Operate the Electronic Proving Ground to include an Electronic Environmental Test Facility (EETF), an Electronic Countermeasures Vulnerability Test Facility (EVTTF), and a Systems Test Facility (STF).
- b. Plan, conduct, evaluate and report on Engineering Tests (ET) of Communications-Electronic (C-E) equipment and systems.
- c. Plan, conduct, evaluate and report of Service Tests (ST) of C-E equipment and systems used above division level, or as otherwise directed.
- d. Plan, monitor, and participate in other tests as directed.
- e. Provide technical and logistical consultation service to other U. S. Army Test and Evaluation Command (USATECOM), U. S. Army Materiel Command (USAMC), Department of the Army (DA), or Department of Defense (DOD) agencies in connection with test and evaluation activities, in-process reviews, specifications coordination, maintenance evaluation or other activities as required.
- f. Provide in accordance with AR 10-50, or as directed by Commanding General, USATECOM:
 - (1) Logistics and administrative support to tenant organizations, including Sixth U. S. Army TCE units.
 - (2) Resources and assistance to the Army Area Commander in support of emergency plans.

2. Major Functions

The following functions are performed by USAEPG:

- a. Provide for attendance at in-process review meetings and other conferences, as required.

b. Support field research, studies and operations of other USAMC, DA, or DOD agencies as required and directed by Commanding General, USATECOM.

c. Recommend, as appropriate, suitability of materiel tested for type classification.

d. Review and comment on Qualitative Materiel Development Objectives (QMDOs), Qualitative Materiel Requirements (QMRs), Small Development Requirements (SDRs), and maintenance package and assist in the review of military specifications.

e. Participate in engineering and research studies of test methodology to improve validity, reliability, and efficiency of techniques used in assigned testing and evaluation activities.

f. Develop or participate in development of test instrumentation as required to meet needs of installation.

g. Conduct the Army portion of the Military Equipment Spectrum Signature Data Collection Program for the DOD Electro-magnetic Compatibility Program.

h. Provide training support to Active Army and Reserve Component units in accordance with AR 210-10, or as directed by the Commanding General, USATECOM.

3. Facilities

The ability of USAEPG to support an electronic test mission is best described by outlining the facilities available to possible USAEPG users. These facilities include:

- a. Central communications system
- b. A central timing signal
- c. Frequency control
- d. Standardus and calibration facility
- e. Aircraft to support tests
- f. Tracking and surveillance sensor testing facilities
- g. Data acquisition

- h. Data processing and reduction facility
- i. Antenna test towers and recording equipment
- j. Free space simulation using a signal source suspension facility
- k. Artillery firing ranges
- l. Special engineering laboratories
- m. Sensor resolution complexes
- n. Military support for tactical environmental testing and evaluation
- o. Facilities to simultaneously conduct a number of independent test programs

4. Supporting Facilities

The U. S. Army Electronic Proving Ground (fig I-1) is ideally located to give to and receive support of the following test activities in the southwestern portion of the United States:

- a. Davis-Monthan Air Force Base is 46 nautical miles west-northwest of Fort Huachuca, and located adjacent to Tucson.
- b. Yuma Proving Ground is 230 nautical miles west of Fort Huachuca.
- c. Yuma Marine Corps Air Station near Yuma, Arizona is 230 nautical miles west of Fort Huachuca, and 16 nautical miles south of the Yuma Proving Ground.
- d. Naval Ordnance Test Station, El Centro, California, is 284 nautical miles west of Fort Huachuca.

5. Airspace

The Commanding General, USAEPG controls the restricted airspace within the area designated as R-2303A and R-2303B surrounding the Fort Huachuca Military Reservation. There are four other large restricted areas of airspace in southwestern Arizona available to users of the USAEPG in the vicinity of Gila Bend and Yuma.

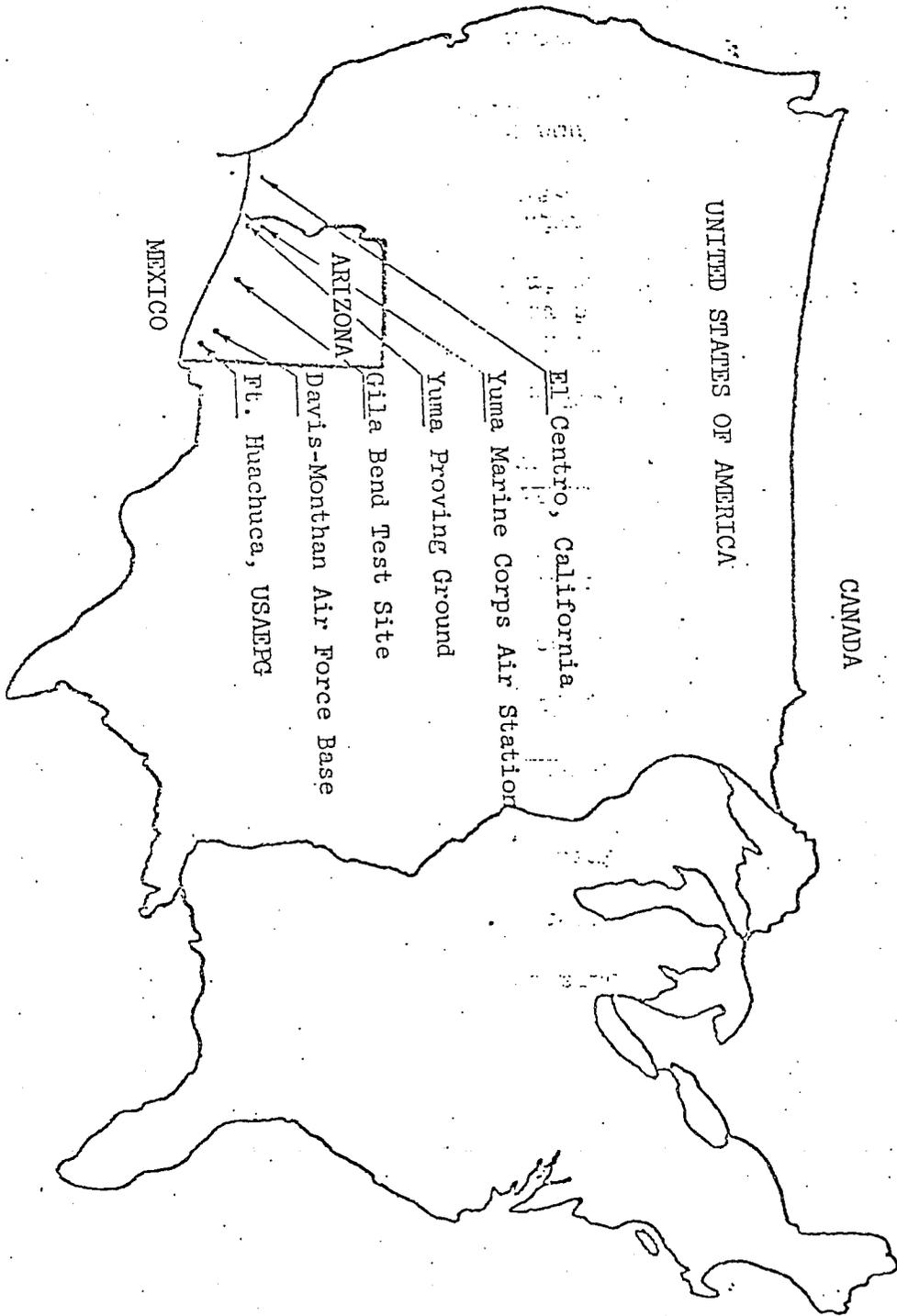


Figure I-1. Supporting Facilities

6. Land Area

The Fort Huachuca Military Reservation land area, approximately 73,740 acres, is located on the eastern slope of the Huachuca mountain range. The terrain in the area varies from rugged mountains with heavily timbered sections to semi-desert with limited vegetation. The bulk of the instrumentation sites and test support facilities are located on the military reservation. Some of these facilities extend across the entire southern one-third of Arizona. This overall complex is located in a sparsely populated area, has limited industrial activity, and provides large areas relatively free of electromagnetic interference from outside sources. A high level of electromagnetic testing can be performed without an inconvenience to the surrounding civil environment.

7. Transportation

First Class commercial air transportation is available at Tucson (70 road miles distant). Excellent highways interconnect major communities within the entire area. Railway freight service is provided to Fort Huachuca by a major railway system.

B. Electromagnetic Environmental Test Facility (EMETF)

The mission of the EMETF (fig I-2) is to evaluate the effects of tactical electromagnetic environments on the performance of the Army C-E equipment, systems, and concepts.

C. Electronic Countermeasures Vulnerability Test Facility (EVTF)

The mission of the EVTF is to:

- a. Determine whether intentional enemy electromagnetic interference can disrupt the normal operation of C-E equipment to a point detrimental to mission accomplishment.
- b. Determine whether C-E equipment operation in its environment can contribute to enemy electronic intelligence efforts.

D. EMETF/EVTF

1. The EVTF has been integrated into the EMETF for testing purposes. The EMETF/EVTF includes all the established field sites, work shops, communication and electronic equipments and Automatic Data Processing (ADP) equipment located at sites throughout Arizona. These facilities are:

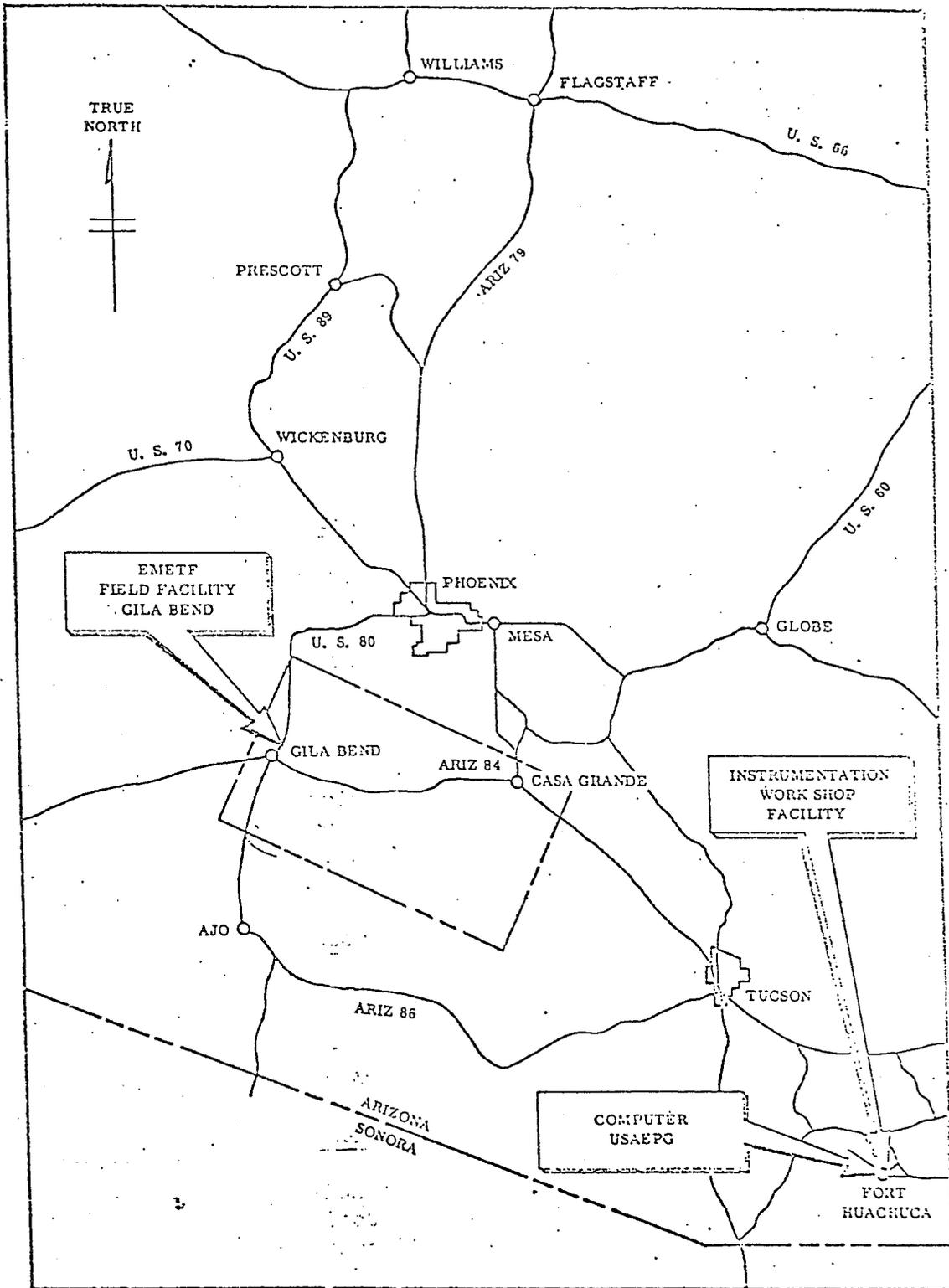


Figure I-2. EMETF Facilities

a. The Field Facility which is located near Gila Bend, Arizona, and covers an area of approximately 40 by 60 miles.

b. The Instrumentation Work Shop (IWS) which is located at Fort Huachuca, Arizona.

c. The Interference Prediction Model (IPM) which consists of a series of programs designed for the IEM 7090 Computer which is located at Fort Huachuca.

2. The performance of C-E equipments in their expected operational electromagnetic environment is analyzed with the IPM. Empirical investigations, on an engineering basis, of the performance of C-E equipments in an electromagnetic environment are performed in the IWS and Field Facility. The results of these investigations support and supplement the results from the IPM.

3. The EMETF/EVTF has all the field sites, work shops, communications and electronics equipment and ADP equipment available that is required to conduct electromagnetic environmental compatibility, vulnerability, and other special types of tests.

E. Systems Test Facility

1. The mission of the STF is:

a. The support of engineering and acceptance test of sensing and detection devices for the Army combat surveillance program.

b. Engineering and service testing of C-E systems for the Army.

c. Other test programs of individual items of electronic equipment.

2. The STF is located in the southern part of Arizona, extending north from Fort Huachuca to Clifton and west to the Western Terminal located on the Yuma Proving Ground. The Western Terminal is approximately 25 nautical miles north of the city of Yuma, Arizona. The STF utilizes over 130 parcels of land throughout Arizona. These land parcels are used for equipment sites and support of specific test programs.

3. The STF has operational and support capabilities to support and conduct a variety of tests. Range instrumentation

and associated test and calibration equipment and personnel who operate and maintain these facilities comprise the STF.

4. The STF is capable of supporting design, engineering, acceptance and service testing of navigation, communications, electronic guidance and control systems and surveillance devices using photographic, high resolution radar, and infrared techniques. The STF is especially adapted to tests wherein the test items are carried in manned or unmanned aircraft.

5. The land area available to the STF includes the Fort Huachuca Military Reservation, 115 square miles, and tenant use of the Yuma Proving Ground, the Western Terminal, which covers about 150 square miles. In addition, the Electronic Proving Ground has under lease, secured for various test purposes, 130 parcels of land, principally in Arizona. Lease status is continuously changing as new tasks are started and old tasks completed. About 85 percent of Arizona land is government-owned and lease arrangements usually present no problems. The land areas utilized by the STF are depicted by Figure I-3.

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