

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

AIR FORCE INSTRUCTION 21-110

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Maintenance

**ENGINEERING AND TECHNICAL
SERVICES**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction supports Air Force Policy Directive (AFPD) 21-1, *Maintenance of Military Materiel*, by providing additional direction that is specific to the management of Engineering and Technical Services (ETS) provided by Air Force (AF) civilian specialists and Department of Defense (DOD) contractors. This AFI applies to all military and civilian AF personnel; i.e., major commands (MAJCOMs), direct reporting units (DRUs), field operating agencies (FOAs), and Air Reserve Components (ARC) which includes Air Force Reserve and Air National Guard; and other individuals or organizations as required by binding agreement or obligation with the Department of the Air Force. MAJCOMs may supplement this publication to identify any required deviations (applicability, variance, and/or differences in organizational placement of responsibilities/processes); however, subordinate units may not. Identify each deviation on the supplement with “(DEV)” directly preceding the paragraph number. These supplements must be submitted to AF/A4L for approval; however, supplements that do not include deviations do not require AF/A4L approval. Furthermore, supplements must be developed in accordance with (IAW) AFI 33-360, *Publications and Forms Management*. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using AF Form 847, *Recommendation for Change of Publication*; route AF Form 847 from the field through the appropriate Functional Chain of Command. The authorities to waive wing/unit level requirements in this publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, Table 1.1 for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items. Ensure all records created as a result of processes prescribed in this publication are maintained IAW AFMAN 33-363,

Management of Records, and disposed of IAW the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS). This publication requires collecting and maintaining information protected by the Privacy Act authorized by 10 USC 8013. Privacy Act system of records notice F036 SAF AA A “Civilian Personnel Files”.

SUMMARY OF CHANGES

This publication has been substantially revised and must be completely reviewed in its entirety.

Chapter 1

PROGRAM MANAGEMENT

1.1. Purpose. The Air Force (AF) must maintain its weapons systems and equipment to meet mission operational needs at a reasonable cost. To accomplish this, units need the capability to quickly resolve complex or unusual technical problems and provide enhanced system-specific technical training to AF technicians and operators. It is not cost effective to train all technicians to this high level of expertise. Therefore, the AF authorizes Engineering and Technical Services (ETS) programs to accomplish these critical technical tasks. Both, AF Engineering and Technical Services (AFETS) and Contractor Engineering and Technical Services (CETS), are expeditionary resources prepared to deploy as needed.

1.2. Scope. AFETS personnel are the primary source of ETS support in the AF. AFETS field technicians shall be used and retrained as necessary to meet technical needs. **(T-1).** CETS are important elements in developing an independent AF capability on new systems; however, units must develop their own organic and AFETS capability whenever possible. **(T-2).** Organizations should normally terminate CETS within 12 months after obtaining self-sufficiency. However, when considering software issues, numerous modifications and extended life programs of most Mission Design Series (MDS), an appropriate level of CETS support over the weapon system life cycle may be considered necessary. ETS requirements within the AF will normally be satisfied through the use of AFETS where practical.

1.2.1. Exclusions. ETS covered in this AFI excludes:

1.2.1.1. Engineering review and resolution of service-revealed deficiencies reported through normal maintenance information systems.

1.2.1.2. Material deficiency reports covered in TO 00-35D-54, USAF Deficiency Reporting, Investigation and Resolution.

1.2.1.3. The engineering determination of material integrity.

1.2.1.4. The engineering or technical services used in 61-series instructions.

1.3. AFETS. AFETS positions satisfy long-term ETS requirements for on-site field engineering support and specialized technical training. AFETS field engineers are highly experienced and thoroughly trained civilian technical specialists. AFETS are typically limited to civilians because of the advantages of long-term continuity and decreased retraining costs provided by a civilian work force. They assist units and MAJCOM functional managers in resolving complex system problems. They assist in troubleshooting and repairing the critical maintenance problems and research, analyze, and provide solutions for long-term and AF-wide support equipment problems. AFETS design special test equipment, develop special maintenance procedures, develop and conduct technical training for unit maintainers and operators, and recommend changes to maintenance processes. AFETS also serves as the unit technical liaison and works with MAJCOM functional managers, depot technicians, engineers, item managers, and equipment manufacturers to resolve equipment problems. AFETS will certify tasks IAW AFI 36-2201, *Air Force Training Program*, and AFI 36-2650, *Maintenance Training*, in USAF personnel training records when training is provided to the go/no-go level. **(T-1).** AFETS will

not be authorized to overcome manning shortfalls or to perform duties considered organic to the unit's manning. **(T-1)**.

1.3.1. Allocation of ETS Positions. Allocations should be based on operational requirements as determined by the MAJCOM-appointed ETS OPR and approved by the applicable MAJCOM Directorate. AFETS and CETS may be authorized together. Due to the complexity of the equipment associated with certain programs, as well as the number of systems fielded, it is not always practical to provide separate ETS support to each unit. In these instances, ETS personnel may be assigned to strategically located units within each command to provide services to specific geographical areas or may be assigned to installations where collocated units have like equipment. When ETS are assigned to installations where units have like equipment, training requirements will be coordinated between units and technical advice and assistance services will be based on unit priorities. **(T-2)**.

1.3.2. CETS. AF units use CETS to provide on-site proficiency training, technical advice, and technical assistance for initial system bed-down or major modifications when AFETS are unavailable. Units desiring services of strategically assigned CETS will direct their requests to the MAJCOM OPR. **(T-2)**.

1.3.2.1. When CETS and AFETS are assigned to the same unit, CETS will support and train AFETS. **(T-1)**.

1.3.2.1.1. CETS will certify tasks IAW AFI 36-2201, Air Force Training Program, and AFI 36-2650, *Maintenance Training*, in USAF personnel training records when training is provided to the go/no-go level. **(T-1)**.

1.3.3. Limits: CETS are restricted to the duties and responsibilities outlined in this AFI and specific tasks listed in the Task Work Specification (TWS). MAJCOM OPRs (with approval by the applicable MAJCOM Directorate) may grant exceptions to these limits only on a case-by-case basis based on mission need. Do not use CETS to avoid manpower ceilings or other personnel rules and regulations. CETS will not: (1) perform non-ETS duties or normal unit duties, (2) make policy or represent the using activity at meetings or conferences, (3) supervise or control Air Force personnel or personnel of other contractors, (4) hold engineering decision-making positions, and (5) perform direct maintenance except in emergency situations. **(T-3)**.

1.4. Developing ETS Support: ETS is a key Integrated Life Cycle Management (ILCM) element for "cradle-to-grave" support in the planning process for new systems or major modifications. Consider the following factors when developing an ETS program for a new system or major modification: complexity of the system or modification; maintenance concept; and, other forms of programmed support such as Interim Contract Support (ICS), Contract Logistics Support (CLS) and Performance Based Logistics (PBL).

1.4.1. Identify total requirements for field engineering, technical advice, assistance, and training. For training priority order, use Air Education and Training Command (AETC), AFETS, and CETS.

1.4.2. Train AFETS specialists' early on new systems and modifications and involve them in system development, technical reviews and testing, and schedule them to arrive on site before equipment delivery to help the unit plan for the new systems and to ensure early self-

sufficiency. When required, schedule CETS to coincide with equipment delivery. When both AFETS and CETS are needed on a system, every effort should be made to co-locate them for maximum transfer of knowledge. Release CETS as soon as AFETS become proficient and capable of meeting long-term ETS requirements.

1.4.3. AFETS are long-term assets whose value to the AF increases over time. AFETS will receive priority consideration for technical and/or instructor training consistent with effective/efficient training planning and established unit priorities. **(T-2)**.

1.5. Multi-Command ETS Programs. MAJCOMs with similar Aircraft MDS Weapon Systems and Non-aircraft Weapon Systems may merge ETS resources and management under a single command. If merged, the applicable MAJCOM Directorates shall establish a Memorandum of Agreement (MOA)/Memorandum of Understanding (MOU) to facilitate coordinated planning, programming, and budgeting to avoid duplication. The MOA/MOU will designate who possesses authority to act on behalf of the MOA/MOU signatories. MAJCOMs not merged by MOA/MOU who utilize AFETS/CETS personnel may decentralize management of the ETS program to the using activity provided all the applicable requirements of this AFI are met.

1.6. Programming, Budgeting, and Funding ETS. Major activities normally program, budget, and fund both AFETS and CETS with Operations and Maintenance (O&M) money. However, when appropriate, use Research and Development (R&D) funds, industrial funds, other funds authorized to Air National Guard (ANG) and Air Force Reserve Command (AFRC), or Defense Working Capital Fund (DWCF) IAW AFI 65-601V1, *Budget Guidance and Procedures*.

CHAPTER 2

RESPONSIBILITIES

2.1. MAJCOMs will:

- 2.1.1. Supplement this document as necessary to ensure standardization among subordinate units.
- 2.1.2. Designate a Lead ETS Program office in a single MAJCOM to administer the activities of the member MAJCOMs merged by MOA/MOU.
- 2.1.3. Designate an ETS OPR in the appropriate Headquarters Directorate or Field Operating Activity (FOA) to serve as the MAJCOM ETS OPR for member MAJCOMs merged by MOA/MOU.
- 2.1.4. Ensure all applicable requirements of this AFI are met by units authorized to decentralize management of their ETS programs to the using activities.
- 2.1.5. Program and defend MAJCOM ETS funds and manpower requirements over the Future Years Defense Program (FYDP) consistent with AF mission requirements.
- 2.1.6. Budget and fund AFETS Permanent Change of Station (PCS), Temporary Duty (TDY), and Developmental Training costs to support their MAJCOM requirements and submit Program Objective Memorandum (POM) for all ETS requirements.
- 2.1.7. Identify mobility statements in AFETS Standard Core Personnel Document (AFI 36-202, *Civilian Mobility*) and designate positions as Emergency-Essential.
- 2.1.8. Ensure general personnel management records are maintained at the unit of assignment on all ETS personnel to assure proper management and administration of ETS resources.
- 2.1.9. Ensure training for AFETS receive proper priority in AF training plans.
- 2.1.10. Redistribute ETS resources between major activities when mission changes dictate such realignment.
- 2.1.11. Provide government property support to CETS IAW Federal Acquisition Regulation (FAR), Subpart 45.3, *Authorizing the Use and Rental of Government Property*. 16 May 2016.
- 2.1.12. Coordinate CETS contract questions with the Air Force Life Cycle Management Center (AFLCMC), Enterprise Acquisition Division (PZIEB) who performs all central acquisition contracting functions for CETS.

2.2. Lead ETS Program Office/Decentralized Management Activities (as applicable) will:

- 2.2.1. Develop TWS and initiate procurement packages for each approved CETS requirement using appropriate Advisory & Assistance Service policies and procedures IAW FAR Subpart 37.2, *Advisory and Assistance Services*, 16 May 2016.
- 2.2.2. Oversee Contract Officer Representative (COR) activities.
- 2.2.3. Establish procedures to notify subordinate activities of CETS termination.

- 2.2.4. Develop and utilize assessment criteria to effectively manage, administer, and control ETS.
- 2.2.5. Conduct annual assessments of ETS Team performance at each field unit. Prepare/update the annual ETS plan that supports ETS programming, budgeting, and manpower actions with adjustments for mission changes or other uncontrollable factors and obtain validation and approval from the applicable MAJCOM Directorate
- 2.2.6. Coordinate AFETS placement and Standard Core Personnel Documents with manpower and civilian personnel offices.
- 2.2.7. Maintain the knowledge, training and skill of the AFETS workforce.
- 2.2.8. Update AFETS on new weapon systems and equipment conversions.
- 2.2.9. Coordinate with weapon system and equipment managers to program AETC Type I Training and other types of training for AFETS on a priority basis for current and new systems.
- 2.2.10. Provide AFETS instructor training.
- 2.2.11. Realign AFETS resources as needed when the mission, system, or equipment changes.
- 2.2.12. Verify need for CETS personnel security clearances and take action to maintain access at the minimum level required IAW AFI 31-501, *Personnel Security Program Management*
- 2.2.13. Include Personnel Reliability Program guidance in the TWS of contractors whose duties involve nuclear weapons.
- 2.2.14. Consolidate subordinate units' requirements and establish a validation process through the MAJCOM, FOA, or DRU ETS OPR (as applicable).
- 2.2.15. Manage MAJCOM ETS TDY and training budget to include planning and execution of funds..

2.3. Using Activity will:

- 2.3.1. Employ ETS resources effectively and efficiently to enhance mission capability IAW AF and MAJCOM guidance. **(T-1)**. AFETS assigned as tenants will be afforded command/base support by the host commensurate with other assigned DOD civilians to include eligibility for local awards, security clearance processing, annual physicals, passport/visa processing etc. **(T-1)**.
- 2.3.2. Fund AFETS to attend conferences and Technical Interchange Meetings (TIM), as required. **(T-3)**. Provide office supplies, special Information Technology (IT) equipment as necessary to support the unit's mission. **(T-3)**. In addition, fund training requirements to ensure AFETS remain current on assigned and emerging systems. **(T-3)**.
- 2.3.3. Adhere to ETS TDY/Deployment Policies. **(T-1)**. Units are authorized to deploy AFETS to support mission requirements. AFETS employees shall be assigned Unit Task Code (UTC) positions in mobility tasked units or may be substituted against military positions on the Deployment Manning Document (DMD) as required. **(T-1)**. CETS

representatives are typically not deployed, but may be deployed on specific approval of the MAJCOM OPR, subject to contract provisions.

2.3.4. Adhere to Adverse Action, Appeal and Grievance Procedures. **(T-1)**. Refer to AFI 36-704, *Discipline and Adverse Action*, issue based 36-Series AFIs, and Negotiated Labor Management (Union) Agreement as applicable, before proceeding.

2.3.5. Provide Air Force Certifying Officer (AFCO) support. **(T-1)**. The using activity OPR will serve as or designate AFCOs for CETS personnel and provide the name, office symbol, signature, and telephone number of the AFCO to the Administrative Contracting Officer (ACO), with a copy to the MAJCOM OPR, no later than 30 days after the CETS assignment or within five workdays of any AFCO change. **(T-2)**. The CETS contract line items assigned to each certifying officer will be clearly identified in this designation. The AFCO is responsible for certifying the monthly Certificate of Service (COS). It is recommended that the using activity delegate the AFCO responsibilities to the Operations Officer of the squadron primarily using the individual CETS employee's services. The designated certifying officer will be a commissioned officer. **(T-2)**. When it is impractical to designate a commissioned officer or one is not available, requests for approval to appoint a senior NCO or AF civilian (GS-11 or above) as AFCO will be submitted by the using activity OPR in writing to the MAJCOM OPR. Each request will be evaluated on an individual basis.

2.4. AFETS Responsibilities. AFETS personnel will:

2.4.1. Provide field engineering, technical advice, assistance, and training for maintaining and operating unit equipment. **(T-1)**.

2.4.2. Investigate equipment failures and mishaps and train personnel to prevent recurrence. **(T-1)**.

2.4.3. Develop contacts with contractor, depot, and AFMC engineers, technicians, and item managers to resolve maintenance problems, design deficiencies, and supply problems. **(T-1)**.

2.4.4. Develop special test equipment and maintenance procedures to resolve complex system problems. **(T-1)**.

2.4.5. Perform emergency maintenance (direct assistance) on equipment when temporary skill or manning shortages prevent accomplishment by other assigned personnel. **(T-1)**.

2.4.6. Advise the unit OPR on the best utilization and management of CETS. **(T-1)**.

2.5. CETS Contractor Responsibilities. CETS contractor will:

2.5.1. Provide ETS through CETS employees who perform the duties described in the TWS. **(T-1)**.

2.5.2. Select, supervise, and exercise sole and autonomous control and direction over CETS employees. **(T-1)**.

2.5.3. Comply with the administrative and security regulations of the using activities. **(T-1)**.

2.5.4. Provide copies of the TWS to CETS employees. **(T-1)**.

2.5.5. Provide CETS security clearance certification to the unit security office. **(T-1)**.

2.6. CETS Employees' Responsibilities. CETS employees will:

- 2.6.1. Give on-site technical advice and hands-on training on all aspects of equipment maintenance and operation including modifications and retrofits. **(T-1).**
- 2.6.2. Advise and train on special tools, handling equipment, test equipment, and other related items. **(T-1).**
- 2.6.3. Comply with and emphasize Air Force safety precautions. **(T-1).**
- 2.6.4. Provide maintenance and operational information from the manufacturer. **(T-1).**
- 2.6.5. Assist in mishap investigations and failure data reporting. **(T-1).**
- 2.6.6. Perform direct maintenance only under unusual or emergency circumstances, and only for a short time. **(T-1).**
- 2.6.7. Submit monthly activity reports and Certificates of Service. **(T-1).**
- 2.6.8. Retain a copy of the TWS in their personnel files. **(T-1).**

Chapter 3

CONTRACTING

3.1. General. AFLCMC is the central contract agency for CETS. AFLCMC has designated the Enterprise Acquisition Division (office symbol, PZIEB), 2275 D Street, Bldg. 16, room 128, Wright Patterson AFB OH 45433-7228 as the single Procurement Contracting Office (PCO) for CETS. AFLCMC/PZIEB is the ACO and is responsible for administering CETS contracts for all MAJCOMs and FOAs. AFLCMC/PZIEB only accepts CETS requirements initiated by the MAJCOM OPRs.

3.2. Government Facilities and Services. The Government will:

- 3.2.1. Provide the contractor the facilities and services specified in the CETS contract. (T-1):
- 3.2.2. Suitable transportation for contractor personnel, baggage, and equipment at the work site and on official business. **(T-1)**. If the Government fails to provide this transportation, it will reimburse the contractor for transportation expenses. All travel requires advance approval from the MAJCOM OPR or designee.
- 3.2.3. Electronic message and internet services to the contractor IAW AFMAN 33-153, *Information Technology (IT) Asset Management (ITAM)* and other appropriate equipment specific directives. **(T-1)**.
- 3.2.4. Telephone services for official business according to the same local directives applicable to government employees. **(T-1)**. CETS may use DSN only in overseas areas with prior approval according to AFI 33-590, *Radio Management*.
- 3.2.5. The contractor may use government services and agencies to transmit and exchange funds for employees when commercial services are not adequate or available.

JOHN B. COOPER
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Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 31-501, Personnel Security Program Management, 27 January 2005
AFI 33-360, Publication and Forms Management, 25 September 2013
AFI 33-590, Radio Management, 08 April 2013
AFI 36-202, Civilian Mobility, 18 March 1994
AFI 36-704, Discipline and Adverse Actions, 22 July 1994
AFI 36-2201, Air Force Training Program, 15 September 2010
AFI 36-2650, Maintenance Training, 20 May 2014
AFI 65-601V1, Budget Guidance and Procedures, 16 August 2012
AFMAN 33-153, Information Technology (IT) Asset Management (ITAM), 19 March 2014
AFMAN 33-363, Management of Records, 1 March 2008
AFPD 21-1, Air and Space Maintenance, 25 February 2003
FAR, Subpart 37.2, Advisory and Assistance Services, 16 May 2016
FAR, Subpart 45.3, Authorizing the Use and Rental of Government Property, 16 May 2016
T.O. 00-35D-54, USAF Deficiency Reporting, Investigation, and Resolution, 1 October 2009

Prescribed Forms

None

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

ACC—Air Combat Command
ACO—Administrative Contracting Officer
AETC—Air Education and Training Command
AF—Air Force
AFCO—Air Force Certifying Officer
AFETS—Air Force Engineering and Technical Services
AFI—Air Force Instruction
AFLCMC—Air Force Life Cycle Management Center
AFMAN—Air Force Manual
AFMC—Air Force Materiel Command

AFPD—Air Force Policy Directive
AFRC—Air Force Reserve Command
AFRIMS—Air Force Records Information Management System
ANG—Air National Guard
ARC—Air Force Component
CETS—Contract Engineering and Technical Services
CLS—Contract Logistics Support
COR—Contracting Officer Representative
COS—Certificate of Service
DEV—Deviation
DMD—Deployment Manning Document
DOD—Department of Defense
DRU—Direct Reporting Unit
DSN—Defense Switched Network
DWCF—Defense Working Capital Fund
ETS—Engineering and Technical Services
FAR—Federal Acquisition Regulation
FOA—Field Operating Agency
FYDP—Future Years Defense Program
HQ—Headquarters
IAW—In Accordance With
ILCM—Integrated Life Cycle Management
ICS—Interim Contract Support
IT—Information Technology
IT—Information Technology Asset Management
MAJCOM—Major Command
MDS—Mission Design Series (of aircraft)
MOA—Memorandum of Agreement
MOU—Memorandum of Understanding
NCO—Noncommissioned Officer
O&M—Operations and Maintenance
OPR—Office of Primary Responsibility

PBL—Performance Based Logistics

PCO—Procuring Contract Office or Officer

PCS—Permanent Change of Station

POM—Program Objective Memorandum

R&D—Research and Development

RDS—Records Disposition Schedule

TDY—Temporary Duty

TIM—Technical Interchange Meeting

TWS—Task Work Specification

USAF—United States Air Force

UTC—Unit Task Code

Terms

Administrative Contracting Officer (ACO)—The contracting officer assigned contract management and administration responsibilities under each CETS contract exhibit. AFLCMC/PZIEB is the ACO for all agencies except HQ ACC which will establish an internal ACO or negotiate an ACO agreement with AFLCMC/PZIEB.

Air Force Certifying Officer (AFCO)—AFCOs are appointed by the using activity OPR to be the government's on-site representatives to ensure the contractor meets the requirements of the Task Work Specification (TWS) and monitor CETS personnel time and attendance.

Air Force Engineering and Technical Services (AFETS)—AFETS is on-site field engineering support and specialized technical training provided by highly experienced and technically qualified Air Force civilian or military personnel. May also refer to the people who perform these duties.

CETS Certificate of Service (COS)—The CETS representative prepares the COS and presents it to the AFCO each month for certification. The AFCO notes any exceptions or unsatisfactory services on the COS.

Contractor Engineering and Technical Services (CETS)—CETS is on-site ETS provided by technically qualified defense contractor representatives to elevate the skills and abilities of AFETS Air Force military and civilian personnel to the self-sufficiency level. May also refer to the personnel who perform these duties.

Engineering and Technical Services (ETS)—ETS provides Air Force units with full engineering support and instruction, technical advice, and training in the installation, operation, and maintenance of aircraft and aerospace equipment, weapon systems, and ground-based communications, radar, and computer equipment. Air Force or contractor ETS specialists provide these services using hands-on training or other forms of instruction.

MAJCOM OPR—MAJCOM director of Logistics or equivalent establishes the office assigned the responsibility for central management of the command's ETS program. Commands with

similar equipment or weapon systems may appoint one MAJCOM to function as OPR for all involved MAJCOMs as designated by MOA/MOU.

Procuring Contracting Officer (PCO)—The contracting officer, Wright-Patterson AFLCMC/PZIEB, who negotiates and executes the basic CETS contract.

Training Provided by ETS—System-specific technical training, provided by ETS personnel within a unit to increase the technical qualifications of assigned personnel, using any media deemed practical to meet unit requirements.

Using Activity—The unit receiving ETS support. The using activity is subordinate to the major activity.

Using Activity OPR—The office within the using activity assigned responsibility for ETS program management. Typically, the MXG/CC is the using activity OPR.