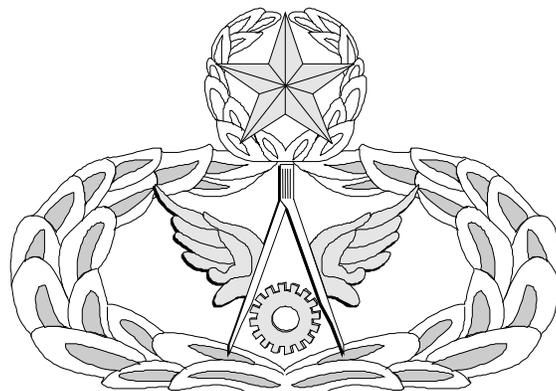


**DEPARTMENT OF THE AIR FORCE**  
**Headquarters US Air Force**  
**Washington DC 20330-5000**

**CFETP 3E4X1**  
**Parts I and II**  
**13 Mar 2009**

## **AFSC 3E4X1**

# **WATER AND FUEL SYSTEMS MAINTENANCE**



**MASTER**



**BASIC**



**SENIOR**

## **CAREER FIELD**

### **EDUCATION AND TRAINING PLAN (CFETP)**

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**WATER AND FUEL SYSTEMS MAINTENANCE SPECIALTY AFSC 3E4X1  
CAREER FIELD EDUCATION AND TRAINING PLAN (CFETP)**

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## **WATER AND FUEL SYSTEMS MAINTENANCE SPECIALTY AFSC 3E4X1 CFETP**

### **PART I: Preface**

**1.** This Career Field Education and Training Plan (CFETP) is a comprehensive education and training document that identifies life-cycle education/training requirements, training support resources, and minimum requirements for this specialty. The CFETP will provide personnel a clear career path to success and instill rigor in all aspects of career field training.

**2.** The CFETP consists of two parts used by supervisors to plan, manage, and control training within the career field.

**2.1. Part I** provides information necessary for overall management of the specialty. Section A explains how everyone will use the plan. Section B identifies career field progression information, duties and responsibilities, training strategies, and career field path. Section C associates each skill level with specialty qualifications (knowledge, education, experience, training and other). Section D indicates resource constraints (examples: funds, manpower, equipment, facilities, etc.). Section E identifies transition training guide requirements for SSgt through MSgt.

**2.2. Part II** includes the following: Section A identifies the Specialty Training Standard (STS) to include duties, tasks, and technical references to support training, Air Education and Training Command (AETC)-conducted training, wartime course, core task and correspondence course requirements. Section B contains the course objective list and training standards supervisors will use to determine if airmen satisfied training requirements. Section C identifies available support materials. Air Force Qualification Training Packages (AFQTPs) and CerTests support both Upgrade Training (UGT) and qualification training. Section D identifies a training course index supervisors can use to determine resources available to support training. Included here are both mandatory and optional courses. Section E identifies MAJCOM-unique training requirements supervisors can use to determine additional training required for the associated qualification needs. Section F identifies home station training references and courses material required for this specialty in support of contingency/wartime training. Section F identifies home station training references and courses material required for this specialty in support of contingency/wartime training. At unit level, supervisors and trainers will use Part II to identify, plan and conduct training commensurate with the overall goals of this guide.

**3.** Using guidance provided in the CFETP will ensure individuals in this specialty receive effective and efficient training at the appropriate point in their careers. This plan will enable us to train today's work force for tomorrow's jobs.

## Section A - General Information

**4. Purpose of the CFETP.** This CFETP provides information necessary for Air Force Career Field Managers (AFCFMs), MAJCOM functional managers (MFMs), commanders, education and training managers, supervisors, trainers and certifiers to plan, develop, manage, and conduct an effective career field training program. This plan outlines the training that individuals in the AFS should receive in order to develop and progress throughout their career. It identifies initial skills, upgrade, qualification, advanced, and proficiency training. **Initial skills training; this** is the AFS-specific training an individual receives upon entry into the Air Force or upon retraining into this specialty for award of the 3-skill level. Normally, AETC conducts this training at one of the technical training centers. **Upgrade training; this** identifies the mandatory courses, task qualification requirements, and correspondence course completion requirements for award of the 3-, 5-, 7-, and 9-skill levels. **Qualification training; this** is actual hands-on task performance training designed to qualify an airman in a specific duty position. This training program occurs both during and after the upgrade training process. It is designed to provide the performance skills and knowledge required to do the job. **Advanced training; this** is a formal course that provides individuals who are qualified in one or more positions of their Air Force Specialty (AFS) with additional skills and knowledge to enhance their expertise in the career field. Training is for selected career Airmen at the advanced level of the AFS. **Proficiency training; this** is additional training, either in-residence, exportable advanced training courses, or on-the-job training, provided to personnel to increase their skills and knowledge beyond the minimum requirements for upgrade. The CFETP has several purposes. These purposes are:

**4.1.** Serves as a management tool to plan, manage, conduct, and evaluate a career field training program. It is used to help supervisors identify training at the appropriate point in an individual's career.

**4.2.** Identifies task and knowledge training requirements for each skill level in the specialty and recommends education and training throughout each phase of an individual's career.

**4.3.** Lists training courses available in the specialty and identifies sources of training and training delivery methods.

**4.4.** Identifies major resource constraints that impact full implementation of the desired career field training process.

**5. Uses of the CFETP.** MFMs and supervisors will use the plan at all levels to ensure comprehensive and cohesive training programs are available for each individual in the specialty.

**5.1.** AETC training personnel will develop or revise formal resident, nonresident, field, and exportable training based on requirements established by the users and documented in Part II of the CFETP. They will also work with the AFCFM, Air Force Civil Engineer Support Agency Force Development Division (HQ AFCEA/CEOF) to develop acquisition strategies for obtaining resources needed to provide the identified training.

**5.2.** MFMs will ensure their training programs complement the CFETP mandatory initial, upgrade, and proficiency requirements and identify requirements that can be satisfied by OJT, resident training, contract training, CerTest, or exportable courses. MAJCOM developed training to support this AFS must be identified for inclusion into the plan.

**5.3.** Unit Education and Training managers and supervisors must ensure each individual completes the mandatory training requirements (including MAJCOM supplemental requirements) for the upgrade training specified in this plan.

**5.4.** Each individual will complete the mandatory training requirements specified in this plan. The lists of courses in Part II in this CFETP will be used as a reference to support training.

**6. Coordination and Approval.** The AFCFM is the approval authority for the CFETP. MAJCOM representatives and AETC personnel will identify and coordinate on the career field training requirements. The AFCFM will initiate an annual review of this document to ensure currency and accuracy. Using the list of courses in Part II, they will eliminate duplicate training.

## **Section B - Career Field Progression and Information**

### **7. Specialty Descriptions for Water and Fuel Systems Maintenance personnel.**

**7.1. Specialty Summary for Helper, Apprentice, Journeyman, and Craftsman.** Installs, inspects, maintains, troubleshoots, modifies, repairs, and manages plumbing, water distribution, wastewater collection systems, water and wastewater treatment systems, fire suppression, backflow prevention systems, natural gas distribution systems, liquid fuel storage, distribution, and dispensing systems. Complies with environmental and safety regulations. Related DoD Occupational Subgroups: 172000.

#### **7.1.2. Duties and Responsibilities:**

**7.1.2.1.** Installs, and operates natural gas, plumbing, water and wastewater treatment systems, fire suppression, backflow prevention systems, aircraft hydrant refueling, bulk storage, and ground product dispensing systems. Monitors systems operation to ensure efficiency and compliance with local state, federal and DoD regulations for safety and environmental regulations for hazardous materials. Installs and operates field potable water treatment equipment.

**7.1.2.2.** Maintains, inspects, and repairs natural gas, swimming pools, plumbing, water and wastewater treatment systems, fire suppression, and backflow prevention assembly and program. Performs inspection, recurring maintenance, winterize, and overhaul systems. Operationally inspects and diagnoses malfunctions in mechanical and electrical system controls and components using technical orders, manufactures' handbooks, local procedures, code and directives. Inspects condition and operation of electrical components such as motors, disconnect switches, contacts, solenoids, relays, alarms, cathodic protection systems and programmable logic controls. Conducts fuel system components, and performs pressure testing and maintenance on fuel system piping. Performs confined space entries to accomplish system maintenance. Solves complex maintenance problems by studying layout drawings, wiring diagrams, and schematics to analyze, isolate and troubleshoot system malfunctions. Removes, repairs, and replaces defective components. Installs, modifies, repairs, and maintains a variety of new and existing utility, supply, and disposal systems and equipment such as sewage, water, oil, and gas distribution systems, and water closets, tubs, backflow prevention devices/assemblies, fire sprinkler systems, and showers. Locates and taps main lines, sets up system routes, places and cuts route openings, places hangers for proper level and slope, and determines and installs valves, traps, and unions as needed for proper operation of a variety of systems and equipment. Develops and establishes operation and maintenance procedures to ensure maximum efficiency.

**7.1.2.3.** Locates and determines quality and quantity of water sources. Coordinates locations of field latrines and pits with engineering and medical staff. Analyzes water for chemical and physical characteristics to determine water purification treatment methods. Installs and operates field potable water treatment equipment. Assists with installation, maintenance and repair of Fuels Mobility Support Equipment (FMSE), Fuels Operational Readiness Capability Equipment (FORCE), and other contingency fueling assets.

**7.1.2.4.** Performs planning activities, quality assurance to include service contracts, and facility surveys. Surveys proposed work to determine resource requirements. Initiates fuel facility Sustainment, Restoration, and Modernization and Military Construction Projects to include project review, monitoring, and acceptance through DESC. Prepares cost estimates and supply procurement for in-service work. Applies engineered performance standards to plan and estimate jobs. Ensures all planning activities comply with environmental and safety regulations to include hazardous materials.

**7.2. Specialty Summary for Superintendents.** Manages and directs daily activities devoted to utilities systems; water distribution, wastewater collection, plumbing systems, natural gas and liquid fuels distribution, liquid fuels storage and pest management as related to DoD Occupational Subgroup: 172000.

**7.2.1. Duties and Responsibilities:**

**7.2.1.2.** Plans and organizes utilities activities to include installation, maintenance, and repair of water and wastewater treatment plumbing systems, water distribution, wastewater collection systems, and natural gas distribution systems; liquid fuels distribution systems and pest management activities. Performs planning activities and facility surveys. Makes on-site investigations of proposed work to determine resource requirements. Prepares cost estimates for in-service work requirements. Applies engineered performance standards in planning and estimating jobs. Coordinates plans with other civil engineering and base activities.

**7.2.1.3.** Directs all daily activities and supervisory functions in utilities, liquid fuels maintenance, and pest management elements. Directs installation, maintenance and repair activities to include water distribution, and wastewater collection systems, plumbing systems, natural gas distribution systems, and liquid fuel distribution systems and pest management activities. Identifies and controls requisitioning of systems, parts, fuels systems components, lubricants, bench stock, and technical publications. Analyzes productivity and work quality. Ensures compliance with environmental and safety regulations and practices for utility water distribution and wastewater collection, natural gas distribution systems, fuel systems and Pest Management, pesticides and hazardous materials.

**7.2.1.4.** Inspects and evaluates utilities activities. Inspects utilities activities, to ensure compliance with policies and regulations. Assists in solving maintenance problems. Interprets inspection findings and initiates corrective actions. Obtains required certifications for personnel. Obtains special tools and equipment required for safe performance of tasks assigned.

**8. Skill and Career Progression.** Adequate training and timely progression from the apprentice to the superintendent skill level play an important role in the Air Force's ability to accomplish its mission. It is essential that everyone involved in training do his or her part to plan, manage, and conduct an effective training program. The guidance provided in this part of the CFETP will ensure individuals receive viable training at appropriate points in their careers.

## **8.1. Apprentice (3-Level).**

**8.1.1.** Upon completion of initial skills training, a trainee will work with a trainer to enhance their knowledge and skills to progress to the 5-Level.

**8.1.2.** Complete mandatory CE Common Core Distance Learning product prior to ordering career development courses (CDC).

**8.1.3.** Utilize the CDC, AFQTPs and other exportable courses for subject and task fundamentals in the career field. Successfully complete applicable CerTests for diamond core tasks.

**8.1.4.** Once trained and task certified, a trainee may perform the task unsupervised.

**8.1.5.** After all upgrade training requirements are complete, supervisors and UETMs coordinate upgrade procedures.

**Note:** All trainees are automatically enrolled in CCAF when awarded their primary AFSC..

## **8.2. Journeyman (5-Level).**

**8.2.1.** A journeyman may be assigned job positions such as team leader, shift supervisor, and task trainer.

**8.2.2.** Enter into continuation training to broaden experience base and to advance to the 7-skill level.

**8.2.3.** Must complete, as a minimum, fifteen months OJT before award of the 5-level. Nine months for re-trainees awarded a 5-level in a previous AFSC.

**8.2.4.** Attend Airman Leadership School (ALS) after serving 48 months in the Air Force or selection to rank of SSGT (active duty only). In-residence or correspondence course is required for Air National Guard/Air Force Reserve Command (ANG/AFRC) personnel.

**8.2.5.** Use CDCs and other reference material to prepare for Weighted Airman Promotion Systems (WAPS) testing.

**8.2.6.** Continue pursuing a CCAF or higher degree.

**8.2.7.** After all upgrade training requirements are completed, supervisors and UETMs coordinate upgrade procedures.

### **8.3. Craftsman (7-Level).**

- 8.3.1.** A craftsman can expect to fill various supervisory and management positions such as shift leader, Operations Flight Prime Beef Liaison, Prime BEEF manager, team chief, supervisor, or task certifier.
- 8.3.2.** Completion of CE Common Core 7-level Distance Learning Course.
- 8.3.3.** 100 percent core/diamond task training is prerequisite to award of the 7-level.
- 8.3.4.** Completion of the 7-level Web-Based Training (WBT) course (in development, completion requirement pending release date).
- 8.3.5.** Must complete a minimum of twelve months OJT before award of the seven level. Six months for cross-trainees awarded a 7-level in a previous AFSC.
- 8.3.6.** Craftsmen should take continuation training courses or obtain added knowledge on management of resources and personnel.
- 8.3.7.** Attend the Non-Commissioned Officer Academy (NCOA) after promotion to Technical Sergeant (TSgt) (active duty only). Either the in-residence or correspondence course is required for ANG/AFRC personnel.
- 8.3.8.** Completion of education through CCAF and higher degree programs is highly recommended.
- 8.3.9.** After all upgrade training requirements are completed, supervisors and UETMs coordinate upgrade procedures.

#### **8.4. Superintendent (9-Level).**

**8.4.1.** A 9-level can be expected to fill positions such as flight chief, flight superintendents, and other various staff positions.

**8.4.2.** Must be a SMSgt for award of the 9-skill level.

**8.4.3.** Completion of CE Superintendent Course (Air Force Institute of Technology [AFIT] WMGT 570) is highly encouraged for 9-level superintendents.

**8.4.4.** Should pursue increased knowledge of budget, manpower, resources, and personnel management.

**8.4.5.** After completion of CCAF, recommend the pursuit of additional higher education and completion of courses outside of their career AFS.

**8.4.6.** Attend the Non-commissioned Officer Academy (SNCOA) after selection for promotion to Senior Master Sergeant (SMSgt) (active duty only). A percentage of top non-selects (for promotion to E-8) MSgts attend SNCOA each year. Either the in-residence or correspondence course is required for ANG/AFRC personnel.

#### **8.5. Civil Engineer Manager (CEM).**

**8.5.1.** CEMs work in a variety of similar jobs and functional areas using general managerial and supervisory abilities to effectively meet organizational challenges.

**8.5.3.** Resident graduation of the USAF SNCOA is a prerequisite for Chief Master Sergeant (CMSgt) promotion (active duty only). Either the in-residence or correspondence course is required for ANG/AFRC personnel.

**8.5.4.** Completion of the Chief Leadership Course (CLC) is mandatory.

**9. Training Decisions.** The CFETP uses a building block approach (simple to complex) to encompass the entire spectrum of training requirements for the Water and Fuel Systems Maintenance career field. The spectrum includes a strategy for when, where, and how to meet the training requirements. The strategy must be apparent and affordable to reduce duplication of training and eliminate a disjointed approach to training. The following decisions were made at the Utilization & Training Workshop held at Sheppard AFB, TX in 5-9 November 2007.

**9.1. Initial Skills Training.** The initial skills course was reviewed for content. Additions, deletions, and modifications were made to the course. Wartime training tasks were identified. Additional contingency training was also identified.

**9.2. Five Level Upgrade Training Requirements.** Existing CDCs were reviewed and updated to ensure only current material remained and new technology information was added.

**9.3. Seven Level Upgrade Training Requirements.** 7-level training requirements were reviewed. Civil Engineering common 7-level in residence training was discontinued in favor of AFSC specific 7-level WBT course when available.

**9.4. Proficiency Training.** Any additional knowledge and skill requirements that were not taught through initial skills or upgrade training are assigned as continuation training. The purpose of continuation training is to provide training exceeding minimum upgrade training requirements with emphasis on present and future duty positions. MAJCOMs must develop a continuation-training program that ensures personnel in the Water and Fuel Systems Maintenance career field receive the necessary training at the appropriate point in their careers. The training program will identify both mandatory and optional training requirements.

**9.5. Supplemental Training.** Subject Matter Experts (SME) and the Training Committee reviewed supplemental training courses for technical accuracy and identified training that was no longer required. They revalidated the remaining courses as necessary to fully support career progression in the AFS.

**9.6. CerTest.** Originally, the CerTest program was developed to support transition training and meet DoD certification requirements. Now, it is also the singular platform to launch AFQTP tests and supplement the evaluation of OJT.

**10. Community College of the Air Force (CCAF).** Airmen are automatically enrolled in CCAF upon completion of basic military training. CCAF provides the opportunity to obtain an Associate in Applied Sciences Degree. In addition to its associate's degree program, CCAF offers the following:

**10.1. Occupational Instructor Certification.** Upon completion of instructor qualification training (consisting of the instructor methods course and supervised practice teaching): CCAF instructors who possess an associate's degree or higher may be nominated by their school commander and/or commandant for certification as an occupational instructor.

**10.2. Trade Skill Certification.** When a CCAF student separates or retires, a trade skill certification is awarded for the primary occupational specialty. The College uses a competency-based assessment process for trade skill certification at one of four proficiency levels: Apprentice, Journeyman, Craftsman (Supervisor), or Master Craftsman (Manager). All are transcribed on the CCAF transcript.

## 11. The Mechanical and Electrical Technology Associates Degree (4VGA).

**11.1. Degree Requirements.** Prior to completing an Associate's Degree, the individual must be awarded a 5-level and the following requirements must be met:

<b>Subject/Course</b>	<b>Semester Hours</b>
Technical Education	24
Leadership, Management, and Military Studies	6
Physical Education	4
General Education	15
Program Elective	15
Technical Education; Leadership, Management, and Military Studies; or General Education	
<b>Total</b>	<b>64</b>

**11.2. Technical Education (24 Semester Hours):** A minimum of 12 semester hours of Technical Core subjects and courses must be applied and the remaining semester hours applied from Technical Core or Technical Elective subjects and courses.

<b>Technical Core Requirements</b>	<b>Semester Hours</b>
CCAF Internship	16
Electrical Power Production	20
Electrical Systems	20
Heating Systems	20
Liquid Fuel Systems	20
Utilities Systems	20
Refrigeration and Air Conditioning	20
Waste Management	3
<b>Technical Electives</b>	<b>Semester Hours</b>
Air Distribution and Filtering Systems	3
Alternate Heating and Cooling	3
Blueprint Reading/Schematic Diagrams	6
Building Codes and Ordinance	3
Computer Science	6
Control Systems/Maintenance	6
Electricity/Electronics	9
Engine Principles	3
Environmental Awareness	3
Environmental Compliance	3
Fire Suppression Systems	6
General Chemistry/Biology	8

General Physics	4
Hazardous Materials	6
Industrial Management	3
Industrial Safety	3
Mechanics of Soils	3
Motor, Starter, and Control Devices	6
Natural Gas Distribution	6
Principles of Electronics	3
Quality Assurance	3
Technical Mathematics	3
Technical Physics	4
Technical Writing	3
Welding and Pipefitting	3

**11.3. Leadership, Management, and Military Studies** (6 Semester Hours): Professional military education, civilian management courses accepted in transfer and/or by testing credit.

**11.4. Physical Education** (4 Semester Hours): This requirement is satisfied by completion of Basic Military Training.

**11.5. General Education** (15 Semester Hours): Applicable courses must meet the criteria for application of courses to the general education requirements and agree with the definitions of applicable general education subjects/courses as provided in the *CCAF General Catalog*.

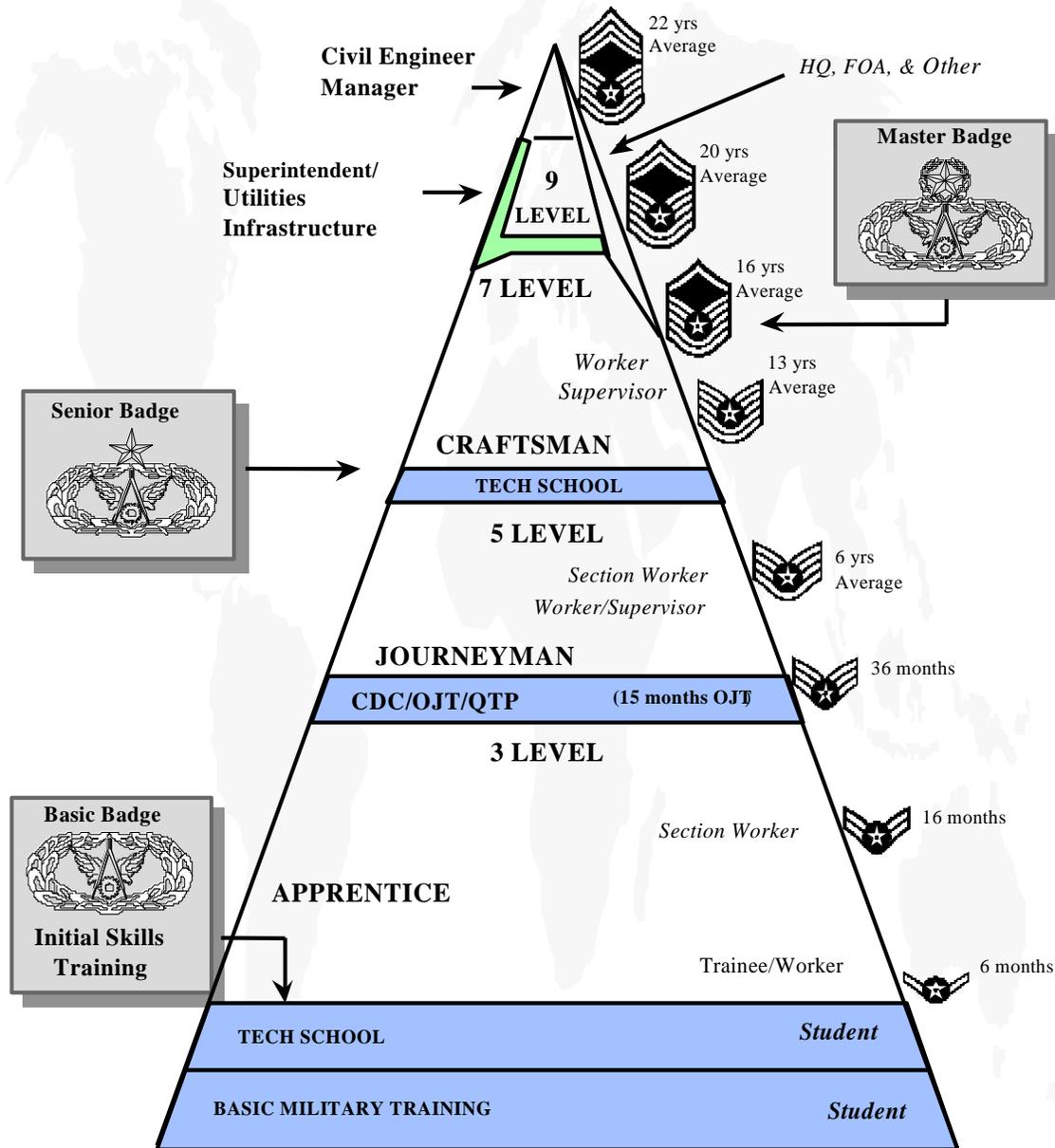
<b>General Education</b>	<b>Semester Hours</b>
Oral Communication Speech	3
Written Communication English Composition	3
Mathematics An intermediate algebra or college-level mathematics course that satisfies the delivering institutions mathematics requirement for graduation. If an acceptable mathematics course is applied as a Technical or Program Elective, a natural science course may be substituted for mathematics.	3
Social Science Anthropology, Archaeology, Economics, Geography, Government, History, Political Science, Psychology, Sociology	3
Humanities Fine Arts (criticism, appreciation, historical significance), foreign language, literature, philosophy, religion	3

**11.6. Program Elective** (15 semester hours) Courses applying to Technical Education, Leadership, Management, and Military Studies (LMMS) or general education requirements; natural science courses meeting general education requirement application criteria; foreign language credit earned at Defense Language Institute or through the Defense Language Proficiency Test; maximum 9 SHs of CCAF degree-applicable technical course credit otherwise not applicable to program of enrollment. See the *CCAF General Catalog* for details regarding the Associates of Applied Sciences degree for this specialty.

**11.7.** Additional off-duty education is a personal choice that is encouraged for all. Individuals desiring to become an AETC Instructor should be actively pursuing an associate degree. A degreed faculty is necessary to maintain accreditation through the Southern Association of Colleges and Schools.

12. **Career Field Path.** The following chart depicts this specialty's career path.

## Enlisted Career Pyramid



## 12.1. Enlisted Career Path

<b>Table: Enlisted Career Path</b>				
<b>Education and Training Requirements</b>	<b>GRADE REQUIREMENTS</b>			
	Rank	Average Sew-On	Earliest Sew-On	High Year Of Tenure (HYT)
<b>Basic Military Training school</b>				
<b>Apprentice Technical School</b> (3-Skill Level)	Amn A1C	6 months 16 months		
<b>Upgrade To Journeyman</b> (5-Skill Level) -- Complete all core/diamond tasks identified in CFETP. - Minimum 15 months on-the-job training (9 months for retrainees) - Complete appropriate CDC if/when available.	SRA	3 years	28 months (22months for Below-The Zone)	12 Years
<b>Airman Leadership School</b> - Must be a SrA with 48 months time in service or be a SSgt Selectee. - Resident graduation is a prerequisite for SSgt sew-on (Active Duty Only).	<b><u>Trainer</u></b>			
	- Must be qualified and certified to the perform tasks to be trained. - Must attend Air Force Training Course.			
<b>Upgrade To Craftsman</b> (7-Skill Level) - Minimum rank of SSgt. - 12 months OJT. - Complete 7-level Craftsman Course (if applicable). - Complete all core (**) tasks identified in CFETP	SSgt	7.5 Years	3 years	20 Years
	<b><u>Certifier</u></b>			
	- SSgt with 5-skill level or civilian equivalent. - Must attend Air Force Training Course. - Be a person other than the trainer (for core and critical tasks only).			
<b>Noncommissioned Officer Academy</b> - Must be a TSgt or TSgt Selectee. - Resident graduation is a prerequisite for MSgt sew-on (Active Duty Only).	TSgt	12.5 years	5 years	24 Years
	MSgt	16 years	8 years	26 Years
<b>USAF Senior NCO Academy</b> - Must be a SMSgt, SMSgt selectee, or selected MSgt - Resident graduation is a prerequisite for CMSgt sew-on (Active Duty Only) <b>Upgrade To Superintendent</b> (9-Skill Level) - Minimum rank of SMSgt. - Recommended completion of the AFIT WMGT 570, Civil Engineer Superintendent Course.				28 Years
	SMSgt	19.2 Years	11 years	
<b>Civil Engineer Manager (CEM)</b> - Completion of Chief Leadership course is Mandatory	CMSgt	21.5 Years	14 years	30 Years

**12.2. CE Occupational Badge.** The Civil Engineer badge reflects a great history and tradition. By wearing it, you will be recognized by your fellow Airmen as having achieved an expected level of competence. The multitude of engineers before you established this expectation through excellent service in both peace and war. Eligibility criteria for award and wear of AF occupational badges can be found in AFI 36-2923, *Aeronautical, Duty, and Occupational Badges*.



**Master**

Worn as a master sergeant or above with 5 years in the specialty from award of the 7-skill level



**Basic**

Worn upon completion of technical school



**Senior**

Worn after award of the 7-skill level

### **CE Badge Heraldry**

The gear wheel and compass have historically been used to represent the engineering profession, in both the military and civilian sector. The gear represents the essence of engineering: applying scientific principles and technology to practical ends. To Air Force engineers, the gear symbolizes an element (representing the built environment) that meshes with other environments (weapon systems and trained personnel) to enable the Air Force to perform its mission. The compass is a precision tool historically used by engineers in designing and constructing facilities and equipment. The gear and compass together symbolize all the diverse specialties within Air Force Civil Engineer. Finally, the wings help to portray the fundamental linkage between the engineering and aviation components; and that the built environment is the foundation supporting Air Force mission and people.

## SECTION C - SKILL LEVEL TRAINING REQUIREMENTS

**13. Purpose.** The various skill levels in the career field are defined in terms of tasks and knowledge requirements for the Water and Fuel Systems Maintenance career ladder. They are stated in broad, general terms and establish the standards of performance. An all-encompassing core task list has been developed for this specialty because of the diversity of the missions supported and the equipment installed to meet mission requirements. Core tasks (and diamond tasks as applicable), knowledge items, and skill requirements for this specialty are identified in the STS. Completion of the mandatory 3-level awarding course, the mandatory completion of CDCs, and the mandatory completion of applicable AFQTPs comprise Air Force requirements.

### 14. Specialty Qualification.

#### 14.1. Apprentice (3-Level) Training Requirements.

##### 14.1.1. Specialty Qualification.

**14.1.1.1. Knowledge.** Completion of the Water and Fuel Systems Maintenance Apprentice course and AFCESA Common Core CBT.

**14.1.1.2. Education.** Completion of high school or General Education Development (GED) with courses in mathematics, chemistry, biology, physics, earth science, drawing and specification use and shop mechanics is desirable.

**14.1.1.3. Training.** Completion of the Water and Fuel Systems Maintenance Apprentice course.

**14.1.1.4. Experience.** N/A

##### 14.1.1.5. Other.

**14.1.1.5.1.** Normal color vision as defined in AFI 48-123, *Medical Examination and Standards*.

**14.1.1.5.2.** Qualification to operate government vehicles according to AFMAN 24-301, Vehicle Operations.

**14.1.1.5.3.** Freedom from fear of confined spaces (Claustrophobia).

**14.1.1.5.4.** Freedom from fear of heights (Acrophobia).

**14.1.1.5.5.** See AFI 36-2101, *Classifying Military Personnel (Officer and Enlisted)*, for additional entry requirements.

#### 14.1.2. Training Sources and Resources.

**14.1.2.1.** Formal training is accomplished through the Water and Fuel Systems Maintenance Apprentice course at Sheppard AFB, TX.

**14.1.2.2.** The Course Objective List (COL) (Part II, Section B of this CFETP) identifies all the knowledge and tasks, with their respective standards.

**14.1.2.3.** When available, AFQTPs and associated CerTests are mandatory for use during UGT/QT on all core tasks, critical tasks, and diamond (◆) tasks.

**14.1.3. Implementation.** The 3-skill level is awarded upon graduating the Water and Fuel Systems Maintenance Apprentice course along with the common-core training.

## **14.2. Journeyman (5-Level) Training Requirements.**

### **14.2.1. Specialty Qualification.**

**14.2.1.1. Knowledge.** Must have mandatory knowledge of contingency/peacetime operations in hydraulic, electrical, mechanical theories, and principles that apply to all utility and liquid fuel systems and be familiar with characteristics, physiological effects, and hazards of liquid fuel products. This includes knowing types, sizes, and uses of plumbing materials and components. Reading and interpreting drawings and specifications, military and commercial publications, and environmental regulations. Maintaining water distribution, wastewater collection, and natural gas distribution systems and corrosion prevention systems. Must have knowledge of Prime BEEF program its role in supporting worldwide contingency operations.

**14.2.1.2. Education.** N/A

**14.2.1.3. Training.** The following training is mandatory for award of the 5-skill level:

**14.2.1.3.1.** Completion of 5-skill level CDCs.

**14.2.1.3.2.** Certification of all 5-level core tasks identified with a single asterisk (\*) in the 5-level core task column of the STS.

**14.2.1.3.3.** Completion of AFQTPs for assigned core tasks and diamond (◆) tasks.

**14.2.1.3.4.** Completion of CerTests for all diamond (◆) tasks with a minimum of 80%.

**14.2.1.3.5.** The following training is desirable and strongly encouraged:

**14.2.1.3.6.1.** Completion of the Liquid Fuels Maintenance course (when available).

**14.2.1.3.6.2.** Completion of Liquid Fuel Storage Tank Entry Supervision course (when prerequisites are met).

**14.2.1.3.6.3.** Completion of the Fire Suppression Systems Maintenance course.

**14.2.1.3.6.4.** Completion of the Backflow Prevention Devices Testing course (MTT).

**14.2.1.3.6.5.** Completion of the Reverse Osmosis Water Purification Unit (ROWPU) course.

**14.2.1.4. Experience.**

**14.2.1.4.1.** Qualification in and possession of 3-skill level.

**14.2.1.4.2.** Operation, maintenance and repair of Water and Fuel Systems Maintenance equipment and analysis of WFSM subsystems.

**14.2.1.4.3.** Minimum 15 months on-the-job training (9 months for re-trainees) before award of 5-skill level.

**14.2.1.5. Other.** N/A

**14.2.1.6. Training Sources and Resources.**

**14.2.1.6.1.** CDC 3E451, Water and Fuel Systems Maintenance Journeyman.

**14.2.1.6.2.** The STS (Part II, Section A of the CFETP) identifies all core tasks required for qualification in the individual's duty position.

**14.2.1.6.3.** Qualified trainers provide upgrade and qualification training for duty positions, managed programs, and/or equipment to be used.

**14.2.1.6.4.** A variety of AFQTPs and Commercial Off-the-Shelf (COTS) products.

**14.2.1.7. Implementation.** Entry into 5-level upgrade training is initiated after the trainee completes the 3-level school and is assigned to his or her first duty station. Also, qualification training is initiated any time individuals are assigned duties they are not certified to perform. AFQTPs are used concurrently to obtain necessary duty position qualifications.

**14.2.1.8. Position Qualification.** Certification of duty position requirements identified by the supervisor can consist of the STS, AF Form 797, 1098 and 623 Part III task. Core tasks from the STS may be included as part of the duty position if they are part of the requirements for being qualified for a particular position. These items make up the MTL/MTP and vary from base to base. Duty position requirements are no longer considered as upgrade training requirements.

**14.3. Craftsman (7-Level) Training Requirements.**

### **14.3.1. Specialty Qualification.**

**14.3.1.1. Knowledge.** Must have mandatory knowledge of contingency/peacetime operations in hydraulic, electrical, mechanical theories, and principles that apply to all utility and liquid fuel systems and be familiar with characteristics, physiological effects, and hazards of liquid fuel products. This includes knowing types, sizes, and uses of plumbing materials and components. Reading and interpreting drawings and specifications, military and commercial publications, and environmental regulations. Maintaining water distribution, wastewater collection, and natural gas distribution systems and corrosion prevention systems. Must have knowledge of Prime BEEF program its role in supporting world-wide contingency operations.

#### **14.3.1.2. Education.**

**14.3.1.2.1.** Completion of the CE 7-level Common Core Distance Learning Module is mandatory.

**14.3.1.2.2.** To assume the rank of SSgt, individuals must successfully complete Airman Leadership School (active duty only).

**14.3.1.2.3.** To assume the rank of MSgt, individuals must successfully complete the NCO Academy (active duty only).

**14.3.1.2.4.** For ANG/AFRC, completion of Air Force Institute for Advanced Distributive Learning (AFIADL) courses 00001 (ALS) and 00006 D&E (NCO Academy) satisfy rank prerequisites.

#### **14.3.1.3. Training.** The following training is mandatory for award of the 7-skill level:

**14.3.1.3.1.** Certification of all 5 and 7-skill level core tasks identified with a single asterisk (\*) in the 5-level core task column and double asterisk (\*\*) in the 7-level core task column of the STS.

**14.3.1.3.2.** Completion of all AFQTPs for assigned core and diamond (◆) tasks

**14.3.1.3.3.** Completion of CerTests for all diamond (◆) tasks with a minimum of 80%.

**14.3.1.3.4.** Completion of any/all of the following advanced courses is highly desirable:

**14.3.1.3.5.1.** Liquid Fuel Storage Tank Entry Supervision course.

**14.3.1.3.5.2.** Liquid Fuel Maintenance Technician course.

**14.3.1.3.5.3.** Fire Suppression Systems Maintenance course.

**14.3.1.3.5.4.** Backflow Prevention Devices Testing course (MTT).

**14.3.1.3.5.5.** Reverse Osmosis Water Purification Unit (ROWPU) course.

**14.3.1.4. Experience.**

**14.3.1.4.1.** Qualification in and possession of a 5-level

**14.3.1.4.2.** Must be SSgt with minimum 12 months on-the-job training (6 months for re-trainees).

**14.3.1.5. Other.** N/A.

**14.3.2. Training Sources and Resources.**

**14.3.2.1.** Water and Fuel Systems Maintenance Craftsman course (when available).

**14.3.2.2.** The STS (Part II, Section A of this CFETP) identifies all core tasks required for qualification in the individual's duty position.

**14.3.2.3.** Qualified trainers provide upgrade and qualification training for duty positions, managed programs, and/or equipment to be used.

**14.3.2.4.** NCO Academy course (correspondence).

**14.3.2.5.** Liquid Fuels Maintenance Technician course.

**14.3.2.6.** Liquid Fuel Storage Tank Entry (Supervisor) course.

**14.3.2.7.** Fire Suppression Systems Maintenance course.

**14.3.2.8.** Backflow Prevention Devices Testing course (MTT).

**14.3.3. Implementation.** Entry into 7-level training is initiated when an individual is selected for SSgt and has fulfilled all 5-level requirements. Qualification training is initiated any time an individual is assigned duties that they are not certified to perform. AFQTPs are used concurrently to obtain necessary duty position qualifications.

**14.3.4. Position Qualification.** Certification of duty position requirements identified by the supervisor can consist of the STS, AF Form 797, 1098 and 623 Part III task. Core tasks from the STS may be included as part of the duty position if they are part of the requirements for being qualified for a particular position. These items make up the

MTL/MTP and vary from base to base. Duty position requirements are no longer considered as upgrade training requirements.

#### **14.4. Superintendent (9-Level) Training Requirements.**

##### **14.4.1. Specialty Qualification.**

**14.4.1.1. Knowledge.** Highly skilled/educated in principles of contingency/peacetime for water distribution and wastewater collection systems, water and wastewater treatment systems, plumbing systems, natural gas distribution systems, liquid fuels distribution systems, and pest management activities; industrial wastewater treatment; uses of maintenance materials and components such as pipes, valves, fittings, packing and gaskets; electrical and electronic controls that apply to these systems; wiring schematics and diagrams; military, commercial, and technical publications; environmental regulations for fuels, pesticides, and hazardous materials. Additionally, have knowledge of Prime BEEF program and its role in supporting worldwide contingency operations.

##### **14.4.1.2. Education.**

**14.4.1.2.1.** Completion of Senior NCO Academy is mandatory prior to award of 9-skill level.

**14.4.1.2.2.** ANG/AFRC must complete AFIADL course 00014(computer base CD-ROM) or in-residence Senior NCO Academy course prior to award of the 9-skill level.

**14.4.1.2.3.** Completion of AFIT 570 Civil Engineer Superintendent course is highly recommended.

##### **14.4.1.2. Experience.**

**14.4.1.4.1.** Qualification in and possession of 7-skill level is mandatory.

**14.4.1.4.2.** Minimum rank of SMSgt with experience directing functions such as inspecting, operating, maintaining and repairing Water and Fuel Systems Maintenance systems.

##### **14.4.1.5. Other.** N/A

#### **14.4.2. Training Sources and Resources.**

**14.4.2.1.** In-residence Senior NCO Academy located at Maxwell AFB - Gunter Annex AL.

**14.4.2.2.** Senior NCO Academy Course 00014(exportable computer based CD-ROM).

**14.4.2.3.** Civil Engineer Superintendent Course, WMGT 570, conducted at AFIT, Wright-Patterson AFB, OH.

**14.4.3. Implementation.** Entry into 9-level training is initiated when an individual is selected for SMSgt and is a fully qualified 7-Level. Qualification training is initiated any time an individual is assigned duties they are not certified to perform.

## **14.5. Civil Engineer Manager.**

### **14.5.1. Specialty Qualification.**

**14.5.1.1. Knowledge.** Knowledge is mandatory of managing and directing personnel resource activities, interpreting and enforcing policy and applicable directives, establishing control procedures to meet work goals and standards, recommending or initiating actions to improve operational efficiency, planning and programming work commitments and schedules, and developing plans regarding facilities, supplies, and equipment procurement and maintenance.

**14.5.1.2. Education.** Must be a resident graduate of Senior NCO Academy (active duty only). Completion of the Chief Leadership Course is mandatory.

**14.5.1.3. Training.** N/A

**14.5.1.4. Experience.** Possess qualifications in feeder specialty (3E491) prior to award of Civil Engineer Manager Code 3E000. Individual must possess the managerial ability to plan, direct, coordinate, implement and control a wide range of work activity.

**14.5.1.5. Other.** N/A

**14.5.1.6. Training Sources and Resources.** N/A

**14.5.1.7. Implementation.** Entry into Civil Engineer Manager Code 3E000 is initiated when an individual is selected for CMSgt and possesses qualifications in a feeder specialty (3E090, 3E191, 3E291, 3E391, 3E490, 3E591, and 3E691).

## **SECTION D - RESOURCE CONSTRAINTS**

**15. Purpose.** This section identifies known resource constraints, which preclude optimal and desired training from being developed or conducted, including information such as cost and manpower. Narrative explanations of each resource constraint and an impact statement describing what effect each constraint has on training are included. Also included in this section are actions required, office of primary responsibility, and target completion dates. Resource constraints will be, as a minimum, reviewed and updated annually.

### **15.1 Equipment Constraints:**

**15.1.1. Constraints:** None

**15.1.2. Time/Manpower/Student Man-years Constraints:** None

**16. Apprentice (3-Level) Training:** None

**17. Journeyman (5-Level) Training.** The Water and Fuel Systems Maintenance has four supplemental courses in development/revision. They are being designed to replace the existing Water and Fuel Systems Maintenance advanced 5-level courses. Minimal new equipment should be required for these four new courses. The CREs will list specific information when submitted. Manpower authorizations should be transferred from the existing Water and Fuel Systems Maintenance supplemental courses to the new courses.

**18. Craftsman (7-level) Level Training.** None

**19. Superintendent (9-Level) Training.** None.

## SECTION E – TRANSITIONAL TRAINING GUIDE

**20. CDCs.** All members affected by the 3E4X1 and 3E4X2 AFSC merger who have completed the opposite CDC set in LFM and Utilities will not be required to take the new combined CDC (A&B set).

**21. AFTR.** The AFTR web site will be cross-referencing LFM and Utilities personnel training records to reflect changes according to the new CFETP. Supervisors must manually document training on the 623 until this process is updated on AFTR.

**22. CCAF.** Mechanical & Electrical Technology (4VGA) will be the assigned CCAF degree plan for WFSM. Utilities personnel currently enrolled under Environmental Systems Technology (9IEY) will have the option to continue with this degree plan.

## PART II

### Section A - Specialty Training Standard

**1. Implementation.** This STS will be used for technical training provided by AETC for the 3-level WFM Apprentice Course with class beginning 02 Mar 09 and graduating 30 Jun 09.

**2. Purpose.** As prescribed in AFI 36-2201v5, *Air Force Training Program, Career Field Education and Training*, this STS:

**2.1.** Lists in Column 1 (*Tasks, Knowledge, and Technical References*) the most common tasks, knowledge, and Technical References (TR) necessary for Airmen to perform duties in the 3-, 5-, and 7-skill level.

**2.2.** Column 2 (*Core Tasks*) identifies core tasks (specialty-wide training requirements) by an asterisk (\*) in the 5-skill level column or a double asterisk (\*\*) in the 7-skill level column. **As a minimum, trainees must complete hands-on certification on all core and critical tasks for skill-level upgrade.**

**2.2.1.** All tasks in the 3-level course column are considered wartime tasks. Consequently, in response to a wartime scenario, these tasks will be taught in the 3-level course in a streamlined training environment.

**2.2.2.** Tasks identified by a diamond (◆) in column 2 are considered contingency tasks for both the 5- and 7-skill level and are extremely important to the career field. However, equipment shortfalls at most locations have created problems with the actual hands-on certification of these tasks. In instances where required equipment is not available for instruction, completion of the task's AFQTP and passing the corresponding CerTest is all that is required for upgrade and qualification training.

**2.3.** Provides **certification for OJT**. Column 3 is used to record completion of task and knowledge training requirements. The CE CFM's approved automated training record AFTR (*Air Force Training Record*) must be used to document technician qualifications. **Task certification** must show a training completion date and initials of the trainee, trainer, and certifier. All non-core tasks require training completion date and initials of the trainee and trainer only.

**2.4.** Shows **formal training and correspondence course** requirements. Column 4 shows the proficiency the graduate must demonstrate on the job. The training and knowledge for column 4 tasks were accomplished in both the initial skills course and correspondence course. In addition, Airmen can view the CADRE/AFSC/CDC listing maintained by the unit education and training manager for current CDC listings.

**2.5.** Identifies **qualitative requirements**. **Attachment 1** contains the proficiency code key used to indicate the level of training and knowledge provided by resident training and career development courses.

**2.6. Job Qualification Standard (JQS)** for on-the-job training when placed in AF Form 623, Individual Training Record, and used according to AFI 36-2201v3, *Air Force Training Program on Job Training Administration* and/or AFI 36-2201v5, *Air Force Training Program, Career Field Education and Training*. For OJT, the tasks in Column 1 are trained and qualified to the go/no go level. Go means the individual can perform the task without assistance and meets local requirements for accuracy, timeliness, and correct use of procedures. AFQTPs, when available, shall be used to identify Air Force standardized procedures. When used as a JQS, the following requirements apply:

**2.6.1. Documentation.** Document and certify completion of training.

**2.6.1.1.** Identify **current duty position requirements** by circling the subparagraph number or letter next to the task statement. Additionally, all core (\* or \*\*) and diamond (◆) identified tasks should be circled. Document task completion by annotating columns 3A, 3B, 3C, 3D and 3E, as appropriate.

**NOTE:** All entries shall be made in pencil.

**2.6.1.2.** Enter the start date of the AFQTP on the AFQTP documentation record. Once completed enter the completion date. When **hands-on** training is started and completed, annotate the STS accordingly.

**2.6.1.3. Transcribing from old document (paper or automated) to CFETP.** Use the new STS to identify and certify all current and past task qualifications.

**2.6.1.3.1. For tasks previously certified and still required in the current duty position:**

**2.6.1.3.1.1.** For **core and critical tasks**, the trainer and certifier evaluate Airman's current qualifications and validate the Airman's ability to complete the task. The new certified date is entered in column 3B and the trainee and certifier enter their initials in columns 3C and 3E, respectively.

**2.6.1.3.1.2.** For **non-core duty position tasks**, the trainer evaluates the Airman's current qualifications and validates the Airman's ability to complete the task. The current date is entered in column 3B and the trainee and trainer enter their initials in columns 3C and 3D, respectively.

**2.6.1.3.2.** To transcribe previous certification for tasks not required in the **current duty position**, carry forward only the previous completion dates (not the initials of another person). If these tasks become a duty position requirement, recertify with current date and trainee, trainer and certifier's initials.

**2.6.1.4. Documenting Career Knowledge.** When a CDC is not available, the supervisor identifies STS training references that the trainee requires for career knowledge IAW AFI 36-2201v3, *Air Force Training Program on Job Training Administration*, and ensures, as a minimum, that trainees cover all mandatory items

specified in AFMAN 36-2108, Enlisted Classification. For two-time CDC exam failures, the unit commander will take appropriate action IAW AFI 36-2201v3, *Air Force Training Program on Job Training Administration*,. **NOTE:** Career knowledge must be documented prior to submitting a CDC waiver.

**2.6.1.5. Decertification and Recertification.** Once verified that an Airman is unqualified on a task, the supervisor must erase previous certification date and enter the Airman into qualification training. The reason for decertification is annotated on the AF Form 623a (On-The-Job Training Record Continuation Sheet). After the trainee demonstrates competence, use the normal certification process to recertify the individual.

**2.7.** The STS also serves as a development guide for promotion tests used in the Weighted Airman Promotion System (WAPS). Senior NCOs with extensive practical experience in their career fields develop specialty Knowledge Tests (SKTs) at the USAF Occupational Measurement Squadron. The objective of these tests is to sample one's STS knowledge. Working off this premise, the test development team unanimously determined the appropriate subject matter areas for promotion to higher grades. Note: Test questions stem from study references listed in the WAPS catalog. Individual responsibilities are in chapter 14 of AFI 36-2606, *United States Air Force Reenlistment, Retention, and NCO Status Programs*. WAPS is not applicable to the Air National Guard or Air Reserve Forces.

**3. Recommendations.** AETC welcomes comments and recommendations concerning the quality of training AETC graduates receive. Reference specific STS paragraphs and address correspondence regarding changes to 782 TRG/TGAV, 620 9<sup>th</sup> Avenue, Suite 3, Sheppard AFB TX 76311-2268. For supervisor's convenience, a Customer Service Information Line (CSIL) has been installed to expedite feedback on graduates who may have received over or under training on task/knowledge items listed in this training standard. For a quick response to problems, call our CSIL at DSN: 736-2574 or e-mail [csil@sheppard.af.mil](mailto:csil@sheppard.af.mil) any time day or night.

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

LOREN M. RENO, Lt Gen, USAF  
Logistics, Installation and Mission Support

Attachments  
Abbreviations and Terms Explained

<b><i>This Block Is For Identification Purposes Only</i></b>		
<b>Name Of Trainee</b>		
<b>Printed Name (Last, First, Middle Initial)</b>	<b>Initials (Written)</b>	<b>only last 4 of SSAN</b>
<b>Printed Name Of Certifying Official And Written Initials</b>		
<i>N/I</i>	<i>N/I</i>	

## QUALITATIVE REQUIREMENTS

Proficiency Code Key		
	Scale Value	Definition: The individual
Task Performance Levels	1	Can do simple parts of the task. Needs to be told or shown how to do most of the task. (Extremely Limited)
	2	Can do most parts of the task. Needs only help on hardest parts. (Partially Proficient)
	3	Can do all parts of the task. Needs only a spot check of completed work. (Competent)
	4	Can do the complete task quickly and accurately. Can tell or show others how to do the task. (Highly Proficient)
*Task Knowledge Levels	a	Can name parts, tools, and simple facts about the task. (Nomenclature)
	b	Can determine step by step procedures for doing the task. (Procedures)
	c	Can identify why and when the task must be done and why each step is needed. (Operating Principles)
	d	Can predict, isolate, and resolve problems about the task. (Advanced Theory)
**Subject Knowledge Levels	A	Can identify basic facts and terms about the subject. (Facts)
	B	Can identify relationship of basic facts and state general principles about the subject. (Principles)
	C	Can analyze facts and principles and draw conclusions about the subject. (Analysis)
	D	Can evaluate conditions and make proper decisions about the subject. (Evaluation)
<p><b>Explanations</b></p> <p>* A task knowledge scale value may be used alone or with a task performance scale value to define a level of knowledge for a specific task. (Example: b and 1b)</p> <p>** A subject knowledge scale value is used alone to define a level of knowledge for a subject not directly related to any specific task, or for a subject common to several tasks.</p> <p>- This mark is used alone instead of a scale value to show that no proficiency training is provided in the course or CDC.</p> <p>X This mark is used alone in the course columns to show that training is required but not given due to limitations in resources.</p> <p><b>NOTE:</b> All tasks and knowledge items shown with a proficiency code are trained during wartime.</p>		

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) D/L	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) D/L
1 CE ORGANIZATION AND CAREER FIELD STRUCTURE TR: AFDD 2-4.2; AFIs 10-209, 10-210, 10-211, 32-1022, 366-2101, 38-101, Enlisted Classification Directory; War Mobilization Plan (WMP)-1.														
1.1 Civil Engineer (CE) Structure									-	A	-	B	-	-
1.2 Progression in Career Ladder									-	A	-	B	-	-
1.3 Duties and Responsibilities														
1.3.1 Peacetime									-	A	-	B	-	-
1.3.2 Contingency									-	A	-	B	-	-
1.4 Functions of:														
1.4.1 Base Civil Engineer (BCE)									-	A	-	B	-	-
1.4.2 Prime BEEF									-	A	-	B	-	-
1.4.3 RED HORSE									-	A	-	B	-	-
1.4.4 HQ Air National Guard (ANG) Air Force Reserve Command (AFRC)									-	A	-	B	-	-
1.4.5 HQ Air Force Civil Engineer Support Agency (AFCESA)									-	-	-	A	-	B
1.4.6 HQ Air Force Center for Engineering and the Environmental (AFCEE)									-	-	-	-	-	A
1.4.7 Air Force Institute of Technology (AFIT)									-	-	-	-	-	A
1.4.8 Air Force Research Laboratory (AFRL)									-	-	-	-	-	A
1.5 Resources														
1.5.1 Assess manpower requirements									-	-	-	-	-	b
1.5.2 Identify budget requirements									-	-	-	-	-	b
1.5.3 Determine equipment requirements									-	-	-	-	-	b
1.5.4 Use Allowance Standards (AS)									-	-	-	-	-	b
1.5.5 Research, Development, and Acquisition (RD&A) TR: DoDD 5000.1														
1.5.5.1 Process									-	-	-	-	-	B
1.5.5.2 Unit Responsibilities									-	-	-	-	-	B
1.5.5.3 Major Command Responsibilities									-	-	-	-	-	B
1.5.6 Assess vehicle requirements									-	-	-	-	-	B
1.5.7 Request contract services									-	-	-	-	-	B
1.5.8 Requesting Simplified Acquisition of Base Engineering Requirements (SABER) contract									-	-	-	-	-	B
1.5.9 Geo Base Technologies									-	-	-	B	-	B
1.5.10 Quality Assurance Personnel (QAP) duties TR: Federal Acquisition Regulation Part 37.6; AFI 63-124; AFPAM 32-1004 V2														
1.5.10.1 Evaluate contractor's performance									-	-	-	-	-	-
1.5.10.2 Document contractor's performance									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) D/L	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) D/L
1.5.10.3 Maintain surveillance documentation									-	-	-	-	-	-
2 SUPERVISION TR: AFIs 36-2201, 36-2304, 36-3401; Enlisted Classification Directory														
2.1 Orient new personnel									-	-	-	-	-	b
2.2 Assign personnel to work crew									-	-	-	-	-	b
2.3 Coordinate work assignments									-	-	-	-	-	b
2.4 Schedule work assignments and priorities									-	-	-	-	-	b
2.5 Establish:														
2.5.1 Work Methods									-	-	-	-	-	b
2.5.2 Controls									-	-	-	-	-	b
2.5.3 Performance Standards									-	-	-	-	-	b
2.6 Evaluate work performance of subordinate personnel									-	-	-	-	-	b
2.7 Resolve technical problems for subordinate personnel									-	-	-	-	-	b
2.8 Direct projects									-	-	-	-	-	b
3 TRAINING TR: AFIs 36-2101, 36-2201; AFD 36-22; Enlisted Classification Directory														
3.1 Evaluate personnel to determine need for training									-	-	-	a	-	b
3.2 Enlisted Specialty Training Supervision														
3.2.1 Prepare job qualification standards									-	-	-	a	-	b
3.2.2 Conduct training									-	-	-	a	-	b
3.2.3 Counsel trainees on their progress									-	-	-	a	-	b
3.2.4 Monitor training effectiveness														
3.2.4.1 Career Knowledge									-	-	-	a	-	b
3.2.4.2 Job Proficiency Upgrade									-	-	-	a	-	b
3.2.4.3 Qualification									-	-	-	a	-	b
3.3 Maintain training records									-	-	-	a	-	b
3.4 Evaluate training programs effectiveness									-	-	-	a	-	b
3.5 Recommend people for training									-	-	-	a	-	b
3.6 AETC Training Management System (Training Allocation)									-	-	-	A	-	B
3.7 Managing Certification and Testing (CerTest)									-	-	-	A	-	B
3.8 National/DoD Certification Requirements									-	-	-	A	-	B
3.9 Air Force Qualification Training Package (AFQTP) Requirements									-	-	-	A	-	B
4 ENVIRONMENTAL AWARENESS AND COMPLIANCE TR AFI 32-7045; AFD 32-70; EO 12856														
4.1 Environmental Compliance (ECAMP, ESOHCAMP)									-	-	-	A	-	B

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) D/L	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) D/L
4.2 Environmental Protection Agency (EPA)									-	-	-	A	-	B
5 CE MANAGEMENT TR: AFIs 32-1001, 32-1022; AFPAMs 32-1098, 32-1125 V-1; AFMAN 23-110														
5.1 Customer relationships									-	A	-	B	-	-
5.2 Work identification and authorization									-	-	-	A	-	B
5.3 Plan work requirements									-	-	-	A	-	B
5.4 Plan logistics support (CEMAS, BOM)									-	-	-	A	-	B
5.5 Government Purchase Card (GPC) Program									-	-	-	A	-	B
5.6 Maintain Recurring Work Program (RWP)									-	-	-	A	-	B
5.7 Scheduling/Time Accounting									-	-	-	A	-	B
5.8 Warranty and Guarantee Program									-	-	-	A	-	B
5.9 Property Accountability									-	-	-	A	-	B
5.10 Air Force Comprehensive Plan									-	-	-	A	-	B
5.11 Legal limits									-	-	-	A	-	B
5.12 Mark "As Built " Drawings									-	-	-	A	-	B
5.13 Reimbursements procedures									-	-	-	A	-	B
5.14 CE-Specific Automated Systems (Computer) Capability														
5.14.1 Perform inputs									-	-	-	a	-	b
5.14.2 Maintain files									-	-	-	a	-	b
5.14.3 Develop automated reports									-	-	-	a	-	b
5.14.4 Extract automated reports									-	-	-	a	-	b
5.14.5 Perform automated data analysis									-	-	-	-	-	b
5.15 Host Tenant and Interservice Agreements									-	-	-	-	-	A
5.16 Civil Engineer Civilian Management									-	-	-	-	-	B
6 AF OCCUPATIONAL SAFETY AND HEALTH (AFOSH) PROGRAM TR: AFIs 91-301, 91-302														
6.1 Supervisory Responsibilities									-	-	-	B	-	-
6.2 Hazardous Materials Waste Handling									A	-	-	B	-	-
6.3 Lead-based Paint (LBP) Hazard TR: 29-CFR 1926.62; Working With Lead-based Paint: Facts and Information Applicable to Air Force Facilities									A	-	-	B	-	-
6.4 Asbestos awareness									A	-	-	B	-	-
7 PUBLICATIONS TR: AFI 33-360 Vol I														
7.1 Military									A	-	-	B	-	-
7.2 Commercial									A	-	-	B	-	-
7.3 Engineering Technical Letters (ETL)									-	-	-	A	-	B
7.4 National Electric Code (NFPA) 70									A	-	-	B	-	-
7.5 State/Local/Host Nation publications									-	-	-	A	-	-
8 Quality Assurance Evaluator (QAE)														
8.1 Contract Administrator/QAE									A	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) D/L	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) D/L
8.2 Defense Energy Support Center									B	-	-	B	-	-
8.3 Air Force Petroleum Office									B	-	-	-	-	-
9 COMMUNICATIONS TR: AFI 33-106; AFJMAN 24-306														
9.1 Use radios									b	-	-	-	-	-
9.2 Use hand signals									b	-	-	-	-	-
9.3 Identify airdrome signals									b	-	-	-	-	-
10 AFS SPECIFIC PUBLICATIONS TR: T.O.s 0-1-1, 0-1-20, 00-201, 00-5-2, 00-20-7, TB MED 577 (0-1-40) UFC 3-460-03; UFC 3-460-1, T.O.s 0-01, 0-1-02, 00-2-1, 005-2, 00-20-7, 42B-1-1, 37A-1-101, 00-25-172, AFOSH STD 91-25 National Electric Code (NFPA 70) API Publications														
10.1 Locate numbers and titles of manuals, regulations, technical orders, and forms									a	-	-	b	-	c
10.2 Locate desired information in														
10.2.1 Standard publications									1a	-	-	b	-	-
10.2.2 Technical publications									1a	-	-	b	-	-
10.2.3 Use technical orders									2b	-	-	b	-	c
11 AFS SPECIFIC HEALTH and SAFETY TR: AFPDs 91-2, 91-3; AFI 91-302; AFOSH 91-10, 91-25, 91-38, 46-137; AFIND 17; CFR (29, 40)														
11.1 Hazards of AFSC									A	-	-	B	-	-
11.2 AFOSH Standards for AFSC									A	-	-	B	-	-
11.3 Individual responsibilities									A	-	-	B	-	-
11.4 Respiratory Protection Program									A	-	-	B	-	-
11.5 Applying safety practices when working with:														
11.5.1 Electrical systems and equipment									2b	-	-	b	-	-
11.5.2 Lockout Tagout Program									A	-	-	B	-	-
11.5.3 Mechanical equipment									1a	-	-	b	-	-
11.5.4 Flammables									A	-	-	B	-	-
11.5.5 Chemicals and chemical solutions									A	-	-	B	-	-
11.5.6 Test equipment									1a	-	-	b	-	-
11.5.7 Mobile working platforms									a	-	-	b	-	-
11.5.8 Electrical hand tools									1a	-	-	b	-	-
11.5.9 Asbestos									a	-	-	b	-	-
11.5.10 Confined space entries		*							2b	-	-	b	-	c
11.5.11 Laboratory equipment									1a	-	-	b	-	-
11.5.12 Excavations									b	-	-	b	-	c
11.5.13 Shoring									b	-	-	b	-	c
11.6 Remove victim from energized circuit									a	-	-	b	-	-
11.7 Apply first aid procedures for electrical shock									a	-	-	b	-	-
11.8 Use warning forms									a	-	-	-	-	-
11.9 Manual lifting awareness									A	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) D/L	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) D/L
11.10 Environmental concerns									A	-	-	-	-	-
11.11 Toxic and explosive gases									A	-	-	B	-	-
11.12 Self contained breathing apparatus									A	-	-	-	-	-
11.13 Initial Federal Hazard Communication Training Program (FHCTP) TR: DoD 6050.5-G-1; AFOSH 121-21; AFI 91-302									A	-	-	-	-	-
11.14 Fuel Hazards									A	-	-	B	-	-
12 MAINTENANCE OF TOOLS AND EQUIPMENT TR: UFC 3-460-03F, T.O.s 00-25-172, 33-1-101, 11H5-35-1														
12.1 Use common hand tools									2b	-	-	b	-	-
12.2 Care of hand tools									A	-	-	-	-	-
12.3 Use of shop equipment									A	-	-	-	-	-
12.4 Care of shop equipment									A	-	-	-	-	-
12.5 Use specialized hand tools									2b	-	-	b	-	-
12.6 Use vapor/oxygen/toxicity indicator		*							2b	-	-	b	-	-
12.7 Maintain Tools									b	-	-	b	-	-
12.8 Condition tags									A	-	-	B	-	-
12.9 Air Compressor														
12.9.1 Inspect									2b	-	-	b	-	-
12.9.2 Operate									2b	-	-	b	-	-
13 PROJECT PLANNING TR: AFIs 32-1070; 32-1066; AFMAN 32-7004, UFC 3-600-02, UFC 03-460-01 ; Uniform Plumbing Code (UPC)														
13.1 Use building construction plans to identify:														
13.1.1 Installation procedure			**						a	-	-	b	-	-
13.1.2 Materials needed									a	-	-	b	-	-
13.1.3 Types of systems									a	-	-	b	-	-
13.2 Prepare working sketches			**						1a	-	-	b	-	-
13.3 Prepare and use AF Form 103, Work Clearance Request		*							1a	-	-	b	-	-
13.4 Prepare bill of materials request		*							1a	-	-	b	-	-
13.5 Recurring Work Program (RWP) requirements			**						-	-	-	b	-	-
14 UTILITIES FUNDAMENTALS TR: UPC; UFC 03-460-01														
14.1 Mathematics									A	-	-	B	-	B
14.1.1 Metric system									-	-	-	A	-	B
14.2 Biology									A	-	-	B	-	B
14.3 Chemistry									A	-	-	B	-	B
14.4 Water treatment									A	-	-	B	-	B
14.5 Wastewater treatment														
14.5.1 Primary									A	-	-	B	-	B
14.5.2. Secondary									A	-	-	B	-	B
14.6 Pipe Fitting														
14.6.1 Measure		*							2b	-	-	b	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)						
	A	B	C	A	B	C	D	E	A		B		C		
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level	5 Skill Level	7 Skill Level	(1) Course	(2) D/L	(1) Course	(2) D/L
									(1) Course	(2) D/L	(1) Course	(2) CDC	(1) Course	(2) D/L	
14.6.2 Cut		*							2b	-	-	b	-	-	
14.6.3 Ream		*							2b	-	-	b	-	-	
14.6.4 Thread		*							2b	-	-	b	-	-	
14.6.5 Sweat		*							2b	-	-	b	-	-	
14.7 Disinfect using chlorine		*							2b	-	-	b	-	b	
14.8 Locate components using:															
14.8.1 Utility maps		*							a	-	-	b	-	-	
14.8.2 Electronic equipment									a	-	-	-	-	-	
15 WATER SYSTEMS TR: AFJMAN 32-1072; UPC/ Ken Kerri, Water Distribution System Operation and Maintenance															
15.1 Fundamentals of water distribution									A	-	-	B	-	-	
15.2 Locating distribution components									A	-	-	B	-	-	
15.3 Operation of water systems															
15.3.1 Wells									A	-	-	B	-	-	
15.3.2 Booster stations									A	-	-	B	-	-	
15.3.3 Storage tanks									A	-	-	B	-	-	
15.3.4 Chemical feeders									A	-	-	B	-	B	
15.3.5 Metering equipment									A	-	-	B	-	-	
15.4 Install water system components															
15.4.1 Fire hydrants									b	-	-	b	-	-	
15.4.2 Tap water main		*							b	-	-	b	-	-	
15.4.3 Structural openings									2b	-	-	b	-	-	
15.4.4 Steel pipe									2b	-	-	b	-	-	
15.4.5 Plastic pipe									2b	-	-	b	-	-	
15.4.6 Copper tubing									2b	-	-	b	-	-	
15.4.7 Pipe hangers/supports									2b	-	-	b	-	-	
15.4.8 Compression couplings									2b	-	-	b	-	-	
15.4.9 Clamps									2b	-	-	b	-	-	
15.5 Inspect water system components:															
15.5.1 Perform pressure test									2b	-	-	b	-	-	
15.5.2 Identify causes for pressure loss									b	-	-	b	-	-	
15.5.3 Locate leaks									2b	-	-	b	-	-	
15.5.4 Corrosion									a	-	-	a	-	-	
15.5.5 Perform area flow test									1a	-	-	b	-	-	
15.5.6 Fire hydrants									1a	-	-	b	-	-	
15.6 Maintain water system components:															
15.6.1 Winterize piping system									1a	-	-	b	-	-	
15.6.2 Thaw frozen water pipes using:															
15.6.2.1 Heaters									a	-	-	b	-	-	
15.6.2.2 Torches									a	-	-	b	-	-	
15.6.2.3 Electrical thawers									a	-	-	b	-	-	
15.7 Repair water system components:															
15.7.1 Piping															
15.7.1.1 Interior															
15.7.1.1.1 Steel		*							2b	-	-	b	-	-	
15.7.1.1.2 Plastic		*							2b	-	-	b	-	-	
15.7.1.1.3 Copper		*							2b	-	-	b	-	-	

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) D/L	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) D/L
15.7.1.2 Exterior														
15.7.1.2.1 Transite		*							a	-	-	b	-	-
15.7.1.2.2 Ductile		*							2b	-	-	b	-	-
15.7.1.2.3 Plastic		*							2b	-	-	b	-	-
15.7.1.2.4 Steel		*							2b	-	-	b	-	-
15.7.2 Fire hydrants		*							b	-	-	b	-	-
16 SWIMMING POOLS FUNDAMENTALS TR: UFC 3-230-02														
16.1 Operate									A	-	-	B	-	-
16.2 Maintain									A	-	-	B	-	-
16.3 Repair									A	-	-	B	-	-
17 WASTEWATER SYSTEMS TR: AFMANs 32-1070, UFC 3-240-07/08/09; UPC; MOP-11														
17.1 Fundamentals of collection														
17.1.1 Sanitary sewer									A	-	-	B	-	-
17.1.2 Industrial waste									A	-	-	B	-	-
17.1.3 Storm drains									A	-	-	B	-	-
17.1.4 Sewage lift stations									A	-	-	B	-	B
17.2 Install collection system components														
17.2.1 Cast iron pipe		*							2b	-	-	b	-	-
17.2.2 Plastic pipe		*							2b	-	-	b	-	-
17.3 Establish trench grade		*							2b	-	-	b	-	-
17.4 Establish pipeline slope		*							2b	-	-	b	-	-
17.5 Backfill trenches		*							b	-	-	b	-	-
17.6 Drain excavations		*							a	-	-	b	-	-
17.7 Inspect wastewater systems														
17.7.1 Leaks									a	-	-	b	-	-
17.7.2 Infiltration/inflow									a	-	-	a	-	-
17.7.3 Manholes									2b	-	-	b	-	-
17.7.4 Grease traps									a	-	-	b	-	c
17.7.5 Oil/water separator									a	-	-	b	-	-
17.8 Maintain wastewater systems														
17.8.1 Interior wastewater systems														
17.8.1.1 Open clogged or restricted drainage systems using:														
17.8.1.1.1 Plungers									2b	-	-	-	-	-
17.8.1.1.2 Hand augers									2b	-	-	b	-	-
17.8.1.1.3 Power augers		*							2b	-	-	b	-	-
17.8.1.1.4 Chemicals									b	-	-	b	-	-
17.8.2 Exterior wastewater systems														
17.8.2.1 Open clogged or restricted drainage systems using:														
17.8.2.1.1 Sewer augers									2b	-	-	b	-	-
17.8.2.1.2 Commercial sewer jet									a	-	-	b	-	-
17.9 Repair wastewater system piping														
17.9.1 Interior wastewater systems									2b	-	-	b	-	-
17.9.2 Exterior wastewater systems									2b	-	-	b	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) D/L	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) D/L
18 NATURAL GAS SYSTEMS TR: AFMANs 32-7004; AFIs 32-1069, 32-1054; UFC 3-430-05; UPC														
18.1 System fundamentals									A	-	-	B	-	-
18.2 Federal and state regulations									-	-	-	B	-	-
18.3 Inspect gas system components and piping									a	-	-	b	-	-
18.4 Maintain gas system components and piping									a	-	-	b	-	-
18.5 Repair gas system components and piping									a	-	-	b	-	-
18.6 Locate and isolate leaks									a	-	-	b	-	-
19 FIRE SUPPRESSION TR: National Fire Protection Association Pamphlets / AFJAM 32-1059 / UFC 3-600-02														
19.1 Inspect and test fire suppression systems														
19.1.1 Wet pipe systems									a	-	-	b	-	-
19.1.2 Dry pipe systems									a	-	-	b	-	-
19.1.3 Deluge systems									a	-	-	b	-	-
19.1.4 Foam systems									a	-	-	b	-	-
19.1.5 Specialized systems									a	-	-	b	-	-
19.2 Repair fire suppression systems														
19.2.1 Wet pipe systems									a	-	-	b	-	-
19.2.2 Dry pipe systems									a	-	-	b	-	-
19.2.3 Deluge systems									a	-	-	b	-	-
19.2.4 Foam systems									a	-	-	b	-	-
19.2.5 Specialized systems									a	-	-	b	-	-
19.3 Maintain fire suppression systems														
19.3.1 Wet pipe systems									a	-	-	b	-	-
19.3.2 Dry pipe systems									a	-	-	b	-	-
19.3.3 Deluge systems									a	-	-	b	-	-
19.3.4 Foam systems									a	-	-	b	-	-
19.3.5 Specialized systems									a	-	-	b	-	-
20 BACKFLOW PREVENTION DEVICES TR: AFI32-1066; UPC														
20.1 Fundamentals									A	-	-	B	-	-
20.2 Install backflow prevention devices														
20.2.1 Air gap									a	-	-	b	-	-
20.2.2 Atmospheric vacuum breakers									1a	-	-	b	-	-
20.2.3 Pressure type vacuum breakers									1a	-	-	b	-	-
20.2.4 Double check valves									1a	-	-	b	-	-
20.2.5 Reduced pressure principle devices									a	-	-	b	-	-
20.3 Inspect backflow prevention devices														
20.3.1 Air gap									a	-	-	b	-	-
20.3.2 Atmospheric vacuum breaker									a	-	-	b	-	-
20.3.3 Double check valves									a	-	-	b	-	-
20.3.4 Pressure type vacuum breaker									a	-	-	b	-	-
20.3.5 Reduced pressure principles devices									a	-	-	b	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)						
	A	B	C	A	B	C	D	E	A		B		C		
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level	5 Skill Level	7 Skill Level	(1) Course	(2) D/L	(1) Course	(2) D/L
20.4 Repair backflow prevention devices															
20.4.1 Pressure vacuum breakers									a	-	-	b	-	-	
20.4.2 Air gap									a	-	-	b	-	-	
20.4.3 Atmospheric									a	-	-	b	-	-	
20.4.4 Double check valves									a	-	-	b	-	-	
20.4.5 Reduced pressure principles devices									a	-	-	b	-	-	
21 ELECTRICAL SYSTEMS TR: AFI 32-1064; T.O. 31-1-141 series															
21.1 Electrical fundamentals															
21.1.1 Electron Theory									B	-	-	B	-	-	
21.1.2 AC circuits									B	-	-	B	-	-	
21.1.3 DC circuits									B	-	-	B	-	-	
21.1.4 Solid state components									B	-	-	B	-	-	
21.1.5 Programable logic controller (PLC)									B	-	-	B	-	-	
21.2 Circuit components															
21.2.1 Overcurrent protection devices									B	-	-	B	-	-	
21.2.2 Electromagnetic devices									B	-	-	B	-	-	
21.2.3 Switches									B	-	-	B	-	-	
21.2.4 Transformers									B	-	-	B	-	-	
21.3 Interpret schematics: Block, wiring, connection, schematic, ladder		*							2b	-	-	b	-	-	
21.4 Motors									B	-	-	B	-	-	
21.5 Use test equipment to measure:															
21.5.1 Voltage		*							2b	-	-	b	-	-	
21.5.2 Resistance		*							2b	-	-	b	-	-	
21.5.3 Current		*							2b	-	-	b	-	-	
21.6 Inspect electrical components/circuits		*							2b	-	-	b	-	-	
21.7 Troubleshoot electrical systems									2b	-	-	b	-	-	
21.8 Replace electrical components		*							2b	-	-	b	-	-	
21.9 Connect and disconnect motors		*							2b	-	-	b	-	-	
21.10 Apply safety precautions		*							2b	-	-	b	-	-	
21.11 Cathodic Protection Systems															
21.11.1 Fundamentals									A	-	-	B	-	-	
21.11.2 Inspect									b	-	-	b	-	-	
21.11.3 Interpret readings									b	-	-	b	-	-	
22 EQUIPMENT TR: AFIs 32-1066, 32-1070; AFMAN 32-7004; UFCs 3-600-02, 3-430-05; UPC															
22.1 Install															
22.1.1 Water Heaters									2b	-	-	b	-	-	
22.1.2 Industrial food grinders									b	-	-	b	-	-	
22.1.3 Emergency eye wash/shower									b	-	-	b	-	-	
22.2 Repair															
22.2.1 Water heaters									2b	-	-	b	-	-	
22.2.2 Industrial food grinder									a	-	-	b	-	-	
22.2.3 Emergency eye wash/shower									b	-	-	b	-	-	

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)						
	A	B	C	A	B	C	D	E	A		B		C		
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level	5 Skill Level	7 Skill Level	(1) Course	(2) D/L	(1) Course	(2) D/L
23 FIXTURES AND RELATED COMPONENTS TR: AFMAN, 32-1070, 32-7004, UFCs; 3-430-05, 4-730-03, 3-600-02; UPC															
23.1 Perform new Installation															
23.1.1 Lavatories		*							2b	-	-	b	-	-	
23.1.2 Water closets		*							2b	-	-	b	-	-	
23.1.3 Urinals		*							2b	-	-	b	-	-	
23.1.4 Showers		*							2b	-	-	b	-	-	
23.1.5 Industrial sinks									b	-	-	b	-	-	
23.1.6 Traps									2b	-	-	b	-	-	
23.1.7 Faucets		*							2b	-	-	b	-	-	
23.1.8 Mixing valves									2b	-	-	b	-	-	
23.1.9 Flushometers		*							2b	-	-	b	-	-	
23.1.10 Drinking fountains									b	-	-	b	-	-	
23.1.11 Water coolers									b	-	-	b	-	-	
23.2 Replace															
23.2.1 Lavatories									b	-	-	b	-	-	
23.2.2 Water closets									b	-	-	b	-	-	
23.2.3 Urinals									b	-	-	b	-	-	
23.2.4 Industrial sinks									b	-	-	b	-	-	
23.2.5 Traps									b	-	-	b	-	-	
23.2.6 Faucets									b	-	-	b	-	-	
23.2.7 Mixing valves									b	-	-	b	-	-	
23.2.8 Flushometers									b	-	-	b	-	-	
23.2.9 Drinking fountains									b	-	-	b	-	-	
23.2.10 Water coolers									b	-	-	b	-	-	
23.3 Repair															
23.3.1 Water closet components		*							2b	-	-	b	-	-	
23.3.2 Traps		*							2b	-	-	b	-	-	
23.3.3 Faucets		*							2b	-	-	b	-	-	
23.3.4 Mixing Valves		*							2b	-	-	b	-	-	
23.3.5 Flushometers		*							2b	-	-	b	-	-	
23.3.6 Drinking fountains									-	-	-	b	-	-	
24 VALVES TR: AFMANs 32-1070, 32-7004; UFC 4-730-03, 3-430-05, 3-600-02; UPC															
24.1 Fundamentals of Valves									A	-	-	B	-	-	
24.2 Install valve boxes		*							a	-	-	b	-	-	
24.3 Inspect valves															
24.3.1 Check									a	-	-	b	-	-	
24.3.2 Globe									a	-	-	b	-	-	
24.3.3 Gate									a	-	-	b	-	-	
24.3.4 Ball									a	-	-	b	-	-	
24.3.5 Altitude									a	-	-	b	-	-	
24.3.6 Pressure regulating									a	-	-	b	-	-	
24.3.7 Pressure relief									a	-	-	b	-	-	
24.3.8 Quick opening									a	-	-	b	-	-	
24.4 Inspect Valve boxes									a	-	-	b	-	-	

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) D/L	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) D/L
24.5 Replace valves														
24.5.1 Pressure relief									a	-	-	b	-	-
24.5.2 Altitude									a	-	-	b	-	-
24.5.3 Check		*							1a	-	-	b	-	-
24.5.4 Globe		*							1a	-	-	b	-	-
24.5.5 Gate		*							1a	-	-	b	-	-
24.5.6 Ball		*							1a	-	-	b	-	-
24.5.7 Pressure regulating									1a	-	-	b	-	-
24.5.8 Quick opening									1a	-	-	b	-	-
24.6 Repair Valves														
24.6.1 Pressure relief									a	-	-	b	-	-
24.6.2 Altitude									a	-	-	b	-	-
24.6.3 Check		*							1a	-	-	b	-	-
24.6.4 Globe									1a	-	-	b	-	-
24.6.5 Gate									1a	-	-	b	-	-
24.6.6 Ball									1a	-	-	b	-	-
24.6.7 Pressure regulating									1a	-	-	b	-	-
24.6.8 Quick opening									1a	-	-	b	-	-
24.7 Maintain Valves														
24.7.1 Lubricate									2b	-	-	b	-	-
24.7.2 Packing									2b	-	-	b	-	-
24.7.3 Boxes									a	-	-	-	-	-
25 WATER TESTING TR: UFC 3-230-02; Standard Methods for the Examination of Water and Wastewater; Ken Kerri; TB-Med 577														
25.1 Collect samples		*							1a	-	-	b	-	b
25.2 Perform water tests:														
25.2.1 pH		*							2b	-	-	b	-	-
25.2.2 Chlorine residual		*							2b	-	-	b	-	b
25.3 Total coliform									-	-	-	-	-	B
25.4 Wastewater Fundamentals														
25.4.1 Primary									A	-	-	B	-	-
25.4.2 Secondary									A	-	-	B	-	-
26 PHYSICAL PRINCIPLES TR: UFC 3-460-03														
26.1 Hydraulics									B	-	-	B	-	-
26.2 Mechanics									B	-	-	B	-	-
26.3 Fuel Characteristics									B	-	-	B	-	-
27. FUELS SYSTEMS TR: UFC 3-460-03F, UFC 03-460-01, API Publications														
27.1 Types									B	-	-	B	-	-
27.2 Interpret mechanical drawings		*							2b	-	-	b	-	-
27.3 Interpret standard designs									b	-	-	b	-	-
27.4 Operational inspect														
27.4.1 Type I									a	-	-	b	-	-
27.4.2 Type II									2b	-	-	b	-	-
27.4.3 Types III & IV														
27.4.3.1 Modes of Operation									2b	-	-	c	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)						
	A	B	C	A	B	C	D	E	A		B		C		
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level	5 Skill Level	7 Skill Level	(1) Course	(2) D/L	(1) Course	(2) D/L
27.4.3.2 Valve Operation									2b	-	-	c	-	-	
27.4.3.3 Pantograph station									b	-	-	b	-	-	
27.5 Inspect Electrical/PLC									2b	-	-	c	-	-	
27.6 Troubleshoot															
27.6.1 Type II		♦							2b	-	-	b	-	-	
27.6.2 Type III															
27.6.2.1 Mechanical		♦							2b	-	-	b	-	-	
27.6.2.2 PLC		♦							-	-	-	b	-	-	
27.6.3 Type IV		♦							b	-	-	b	-	-	
28 MAINTENANCE OF INSTALLED FUEL SYSTEMS TR: UFC 3-460-03F; AFOSH STD 127-40; MIL STD 161, 37-1-1, 42B-1-1, 37A-1-101, 37A6-7-1, 00-25-172; UFC 3-460-01, API Publications															
28.1 Tubing															
28.1.1 Types									A	-	-	B	-	-	
28.1.2 Fittings									A	-	-	B	-	-	
28.1.3 Fabricate tubing systems									2b	-	-	b	-	-	
28.2 Automatic valves															
28.2.1 Constructional features									B	-	-	B	-	-	
28.2.2 Operational characteristics									B	-	-	B	-	-	
28.2.3 Adjust									2b	-	-	c	-	-	
28.2.4 Repair		*							2b	-	-	c	-	-	
28.2.5 Troubleshoot									2b	-	-	c	-	-	
28.3 Pumps															
28.3.1 Constructional features															
28.3.1.1 Standard centrifugal									B	-	-	B	-	-	
28.3.1.2 Deep Well									B	-	-	B	-	-	
28.3.1.3 API 610									B	-	-	B	-	-	
28.3.1.4 Self-priming centrifugal									B	-	-	B	-	-	
28.3.1.5 Positive displacement									B	-	-	B	-	-	
28.3.1.6 Double diaphragm									B	-	-	B	-	-	
28.3.2 Operational inspect		*							2b	-	-	b	-	-	
28.3.3 Adjust/Align									b	-	-	b	-	-	
28.3.4 Lubricate bearings									b	-	-	b	-	-	
28.3.5 Mechanical seals															
28.3.5.1 Replace									2b	-	-	c	-	-	
28.3.5.2 Adjust									-	-	-	b	-	-	
28.3.6 Rebuild pump															
28.3.6.1 Standard centrifugal									2b	-	-	b	-	-	
28.3.6.2 Deep Well									2b	-	-	b	-	-	
28.3.6.3 API 610									2b	-	-	b	-	-	
28.3.6.4 Self-priming centrifugal									2b	-	-	b	-	-	
28.3.6.5 Positive displacement									2b	-	-	b	-	-	
28.3.6.6 Double diaphragm									2b	-	-	b	-	-	
28.4 Filtration equipment															
28.4.1 Constructional Features									B	-	-	B	-	-	
28.4.2 Replace filter element cartridge		*							2b	-	-	c	-	-	
28.4.3 Repair Filtration equipment									b	-	-	b	-	-	

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)						
	A	B	C	A	B	C	D	E	A		B		C		
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level	5 Skill Level	7 Skill Level	(1) Course	(2) D/L	(1) Course	(2) D/L
28.4.4 Troubleshoot										b	-	-	b	-	-
28.5 Fuel meters															
28.5.1 Constructional features										B	-	-	B	-	-
28.5.2 Calibrate meters		*								2b	-	-	b	-	-
28.5.3 Use master meter		*								2b	-	-	b	-	-
28.5.4 Repair										-	-	-	a	-	-
28.6 Storage tanks															
28.6.1 Constructional features															
28.6.1.1 Above ground										B	-	-	B	-	-
28.6.1.2 Below ground										B	-	-	B	-	-
28.6.1.3 Cut and cover										B	-	-	B	-	-
28.6.2 Components															
28.6.2.1 Repair										b	-	-	c	-	-
28.6.2.2 Inspect										b	-	-	c	-	-
28.6.2.3 Check leak detection systems										b	-	-	c	-	-
28.6.3 Gauging systems															
28.6.3.1 Automatic															
28.6.3.1.1 Constructional features										B	-	-	B	-	-
28.6.3.1.2 Install										b	-	-	b	-	-
28.6.3.1.3 Remove										b	-	-	b	-	-
28.6.3.2 Mechanical															
28.6.3.2.1 Constructional features										B	-	-	B	-	-
28.6.3.2.2 Repair										b	-	-	b	-	-
28.6.3.2.3 Inspect										b	-	-	b	-	-
28.6.3.2.4 Adjust										b	-	-	c	-	-
28.6.3.3 Manually gauge tank										b	-	-	b	-	-
28.6.4 Inspect dikes										b	-	-	b	-	-
28.7 Double Block and Bleed Valve															
28.7.1 Constructional features										B	-	-	B	-	-
28.7.2 Lubricate										2b	-	-	b	-	-
28.7.3 Repair										2b	-	-	c	-	-
28.8 Loading/off loading equipment															
28.8.1 Constructional features										B	-	-	B	-	-
28.8.2 Truck Overfill Protection										B	-	-	B	-	-
28.8.3 Dry Break Couplers, Single-point nozzles, cam-lock coupler, and ground product coupler															
28.8.3.1 Constructional features										A	-	-	B	-	-
28.8.3.2 Repair										2b	-	-	b	-	-
28.8.4 Hoses										A	-	-	B	-	-
28.8.5 Use hydrostatic hose tester										b	-	-	b	-	-
28.9 Fuel Piping Systems															
28.9.1 Constructional features										B	-	-	B	-	-
28.9.2 Perform pressure test															
28.9.2.1 Leak test										b	-	-	b	-	-
28.9.2.2 Check leak detection systems										b	-	-	c	-	-
28.9.2.3 Annual		*								b	-	-	b	-	-
28.9.2.4 Five year										b	-	-	b	-	-
28.10 Gauges															

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) D/L	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) D/L
28.10.1 Constructional features									B	-	-	B	-	-
28.10.2 Calibrate		*							2b	-	-	c	-	-
28.11 Pressure/flow transmitters (PIT/DPT-Type III & IV)														
28.11.1 Replace									b	-	-	b	-	-
28.11.2 Calibrate		◆							2b	-	-	b	-	-
28.12 Automotive dispensing system														
28.12.1 Troubleshoot dispensing systems									2b	-	-	b	-	-
28.12.2 Submersible														
28.12.2.1 Constructional features									A	-	-	B	-	-
28.12.2.2 Inspect									2b	-	-	b	-	-
28.12.2.3 Repair									b	-	-	b	-	-
28.12.2.4 Replace									b	-	-	b	-	-
28.12.3 Self-Contained														
28.12.3.1 Constructional features									A	-	-	B	-	-
28.12.3.2 Inspect									2b	-	-	b	-	-
28.12.3.3 Repair									b	-	-	b	-	-
28.12.3.4 Replace									b	-	-	b	-	-
28.12.4 VIL Systems									A	-	-	B	-	-
28.12.5 Calibrate meters		*							2b	-	-	b	-	-
28.12.6 Check leak detection systems									b	-	-	c	-	-
28.12.7 Compressed natural gas									A	-	-	B	-	-
28.13 Hydrant outlets														
28.13.1 Constructional features									B	-	-	B	-	-
28.13.2 Repair									2b	-	-	b	-	-
28.14 Corrosion Control									A	-	-	B	-	-
28.15 Surge Arrestors									A	-	-	B	-	-
28.16 Grounding Principles									A	-	-	B	-	-
28.17 Bonding Principles									A	-	-	B	-	-
29 TANK/CONFINED SPACE ENTRY TR: UFC 3-460-03F; AFOSH STD, 91-25, 91-38, 127-45; API Pub 2015 4th Ed (Note 3b); NIOSH 38-193, T.O. 11H5-35-1														
29.1 Safety hazards									B	-	-	B	-	-
29.2 Prepare tanks									b	-	-	b	-	-
29.3 Specialized protective clothing														
29.3.1 Inspect									a	-	-	b	-	-
29.3.2 Use									a	-	-	b	-	-
29.3.3 Maintain									a	-	-	b	-	-
29.4 Specialized protective equipment														
29.4.1 Inspect		*							2b	-	-	b	-	-
29.4.2 Use		*							2b	-	-	b	-	-
29.4.3 Maintain		*							a	-	-	b	-	-
29.5 Perform tank inspection									a	-	-	b	-	-
29.6 Perform tank cleaning									a	-	-	b	-	-
29.7 Return tank to service									b	-	-	b	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) D/L	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) D/L
30 DEACTIVATE FUEL SYSTEMS TR: UFC 3-460-01, UFC 3-460-03														
30.1 Fundamentals														
30.1.1 Tanks									-	-	-	B	-	-
30.1.2 Piping									-	-	-	B	-	-
30.1.3 Electrical									-	-	-	B	-	-
30.1.4 Mechanical									-	-	-	B	-	-
31 FUELS ENVIRONMENTAL COMPLIANCE TR: STANAG 7102; UFC 3-460-03														
31.1 Concerns														
31.1.1 Governing Authorities									A	-	-	A	-	-
31.1.2 Operational									A	-	-	A	-	-
31.2 Disposal														
31.2.1 Fuel									A	-	-	B	-	-
31.2.2 Sludge									A	-	-	B	-	-
31.2.3 Solid waste									A	-	-	B	-	-
32 AFSC SPECIFIC CONTINGENCY RESPONSIBILITIES TR: AFIs 10-210; 10-211; 32-1026; T.O.'s 35E-5-6-1, 35E4-132-1, 35E4-94-1; Army TMs 10-8340-207-14, 10-450-200-12; WMP-1, Annex S; (Mar 95); AFPAM 10-219, Vol 2,3,4, & 5; UFCs; 3-230-15/16/17, 3-230-05, 3-260-02, 3-250-07/08/04/03/06														
32.1 Expedient repair														
32.1.1 Storm drain system repair									A	-	-	B	-	-
32.2 Expedient field construction														
32.2.1 Latrines TR: AFI 10-210; AFMAN 34-247, AFPAM 10-219, VOL 5														
32.2.1.1 Pit									A	-	-	B	-	-
32.2.1.2 Straddle trench									A	-	-	B	-	-
32.2.1.3 VIP									A	-	-	B	-	-
32.2.1.4 Burnout									A	-	-	B	-	-
32.2.1.5 Pail									A	-	-	B	-	-
32.2.1.6 Mound									A	-	-	B	-	-
32.2.2 Grease traps									A	-	-	B	-	B
32.2.3 Waste Water Disposal TR: AFPAM 10-219, Vol 5; AFIs 10-210, 32-1054, 32-1066, 32-1067, 32-7041, 48-110, 36-2238; AFD 48-1; Army TM 5-654														
32.2.3.1 Urine soakage pit									A	-	-	B	-	-
32.2.3.2 Lagoons									A	-	-	B	-	B
32.2.3.3 Evaporation beds									A	-	-	B	-	B
32.2.3.4 Septic tanks									A	-	-	B	-	B
32.2.3.4.1 Leach fields									A	-	-	B	-	B
32.2.3.5 Piping									A	-	-	B	-	-
32.2.3.6 Lift stations									A	-	-	B	-	B

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) D/L	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) D/L
32.2.4 Sanitary Landfill TR: AFIs 41-201, 32-61, 32-1066, 32-7041; AFPD 48-1; AFPAM 10-219, Vol 5														
32.2.4.1 Establishment									A	-	-	B	-	-
32.2.4.2 Maintenance									A	-	-	B	-	-
32.3 Expedient beddown methods														
32.3.1 Base Expeditionary Airfield Resources (BEAR) assets														
32.3.1.1 BEAR Water System TR: AFPAM 10-219, Vol 5; T.O.'s 00-105K-1, 36A11-20-4-3, 37A12-1-121; TM5-4320-220-12 & P														
32.3.1.1.1 Operation principles									B	-	-	B	-	B
32.3.1.1.2 Set up		◆							2b	-	-	b	-	-
32.3.1.1.3 Troubleshooting		◆							2b	-	-	b	-	-
32.3.1.1.4 Repairs		◆							2b	-	-	b	-	-
32.3.1.2 Self-Help Laundry TR: T.O. 50D1-3-1; TM 01243-14/1; AFPAM 10-219, Vol 5														
32.3.1.2.1 Set-up									a	-	-	b	-	-
32.3.1.2.2 Troubleshoot									a	-	-	b	-	-
32.3.1.2.3 Repair									a	-	-	b	-	-
32.3.2 BEAR assets														
32.3.2.1 Expedient Shelter Systems Erection TR: T.O. 35E5-6-1; AFPAM 10-219, Vol 2 & 5; AFH 10-222, Vol 1														
32.3.2.1.1 Assembly									a	-	-	-	-	-
32.3.2.1.2 Disassembly									b	-	-	-	-	-
32.3.2.2 Provide Electric Kitchen Equipment Utility Support TR: T.O.'s 35E4-169-1; AFPAM 10-219, Vol 2 & 5														
32.3.2.2.1 Potable water supply									A	-	-	A	-	-
32.3.2.2.2 Waste water disposal									A	-	-	B	-	-
32.3.2.2.3 Grease trap requirements									A	-	-	B	-	B
32.3.2.3 Portable shower unit & shave stand TR: T.O.'s 35E35-4-1, 35E35-3-1, 40P1-2-2-1, 40P1-6-2-1; TM's 10-4510-201-10, 10-4510-206-14; AFPAM 10-219, Vol 5														
32.3.2.3.1 Set up		◆							2b	-	-	b	-	-
32.3.2.3.2 Perform operational tests		◆							2b	-	-	b	-	-
32.3.2.3.3 Service/Periodic maintenance		◆							2b	-	-	b	-	-
32.3.2.3.4 Troubleshooting		◆							2b	-	-	b	-	-
32.3.2.3.5 Repairs		◆							2b	-	-	b	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) D/L	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) D/L
32.3.2.4 Field deployable latrine TR: T.O. 35E35-5-1; AFPAM 10-219, Vol 2 & 5														
32.3.2.4.1 Set up		◆							2b	-	-	b	-	-
32.3.2.4.2 Maintain		◆							2b	-	-	b	-	-
32.3.2.4.3 Disassemble		◆							2b	-	-	b	-	-
32.3.2.5 Water purification equipment/ reverse osmosis water purification unit (ROWPU) TR: 40W4-13-41, 40W4-13-42, 40W4-13-44, 40W4-20-1; AFPAM 10-219, Vol 2 & 5														
32.3.2.5.1 Set up		◆							2b	-	-	b	-	-
32.3.2.5.2 Operate		◆							2b	-	-	b	-	-
32.3.2.5.3 Maintain		◆							2b	-	-	b	-	-
32.3.3 Medical facilities erection utility support TR: T.O.'s -5-1 & 35E3 Series; AFPAM 10-219, Vol 3									A	-	-	A	-	-
32.4 Survivability support														
32.4.1 Water supply TR: AFMAN 32-1019; AFIs 32-1054; 32-1066; 32-1067; AFPAM 10-219, Vol 2, 3 & 5; Army FM 5-100; TM 5-660														
32.4.1.1 Determining alternate water														
32.4.1.1.1 Expansion of water facilities									A	-	-	B	-	-
32.4.1.1.2 Surface water locations									A	-	-	B	-	-
32.4.1.2 Shallow well development (maximum 3 foot depth)									A	-	-	B	-	-
32.4.2 M272 Water Test Kit TR: AFDL Web Based Training video									A	-	-	A	-	-
32.5 Special purpose vehicles														
32.5.1 Sewer cleaning trailer TR: TO 36A11-18-24-1									A	-	-	B	-	-
32.5.2 Sewer vacuum truck									A	-	-	B	-	-
32.5.3 Water Distribution Truck									-	-	-	A	-	-
32.5.4 Tractor mounted backhoe									-	-	-	-	-	-
32.5.5 Dump truck									-	-	-	-	-	-
32.5.6 10K AT loader with fork attachments									-	-	-	-	-	-
32.6 Contingency planning TR: AFPAM 10-219 V2, V5														
32.6.1 Initial field assessment									-	-	-	-	-	B
32.6.2 Sustainment														
32.6.2.1 Critical systems back-up									-	-	-	-	-	B
32.6.2.2 Develop local operating instructions									-	-	-	-	-	b
32.6.3 Resource management									-	-	-	-	-	B
32.6.4 Water logs									-	-	-	-	-	B
32.6.5 Water storage requirements									-	-	-	-	-	B
									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level		5 Skill Level		7 Skill Level	
									(1) Course	(2) D/L	(1) Course	(2) CDC	(1) Course	(2) D/L
32.6.6 Setup Water/Fuel Storage Bladder TR: T.O. 39-3-5 series; TM 5-5430-200-12 AFPAM 10-209, Vol 5														
32.6.6.1 Water bladders									b	-	-	b	-	-
32.6.6.2 Fuel bladders									b	-	-	b	-	-
32.7 POL Distribution System Repair TR: AFIs 32-7005; 32-1065; 10-201; 10-410; AFPAM 10-209, Vol 2,3,&5; AFOSH STDs 48-22; 127-31; MIL STD 161; T.O.s 37A13-5-1, 37A13-6-1, 37A13-6-2, 11H5-35-1, 34Y5-4-12-1, 34Y1-184-21, 32B13-3-8-1, 38G1-112-3, 35F5-16-1, 35D26-9-2-1														
32.7.1 Invasion pipeline system									A	-	-	A	-	-
32.7.2 Rapid Utility Repair Kit (RURK)														
32.7.2.1 Concept and Fundamentals									A	-	-	A	-	-
32.7.3 Contingency Fuel Recovery System (CFRS)														
32.7.3.1 Concept and Fundamentals									A	-	-	A	-	-
32.8 Fuels Mobility Support Equipment (FMSE)														
32.8.1 Air Transportable Hydrant Refueling System (ATHRS/R-14)									A	-	-	B	-	-
32.8.2 FFU-15E									A	-	-	B	-	-
32.8.3 R-22									A	-	-	B	-	-
32.8.4 Additive injector									A	-	-	B	-	-
32.8.5 PMU-27									A	-	-	B	-	-
32.9 Fuels Operational Readiness Capability Equipment (FORCE)									A	-	-	B	-	-

Note: BLK #4: Columns (1) & (2) can be relabeled to meet CF Requirements; i.e., 2 phase 3 skill level course, 5 lvl QTPs.

**CE AFQTP Documentation Record for AFSC 3E4X1**

- Download AFQTP's from the following website HQ AFCESA/CEOF
- Trainers/Certifiers enter their name and initials in the identification block at beginning of the STS
- Upon administering AFQTP's, enter start date in column 4 of this record
- Upon completion of each unit, document columns 5, 6, and 7
- Upon completion of applicable CerTest, trainer will place the completion date in column 8
- Transcribe by entering current date in columns 5 and 8, Trainees & Trainers Initials in columns 6 & 7

1	2	3	4	5	6	7	8
Task Number	Task, Knowledge, and Technical Reference	◆ * 5 Level ** 7 Level (5IV)	Start Date	Complete Date	Trainee Initials	Trainer's Initials	CerTest Complete
<b>11</b>	<b>AFS SPECIFIC HEALTH and SAFETY</b> TR: AFPDs 91-2, 91-3; AFI 91-302; AFOSH 91-10, 91-32, 91-38, 46-137; AFIND 17; CFR (29, 40)						
11.5.9.	Confined space entries	*					
<b>12</b>	<b>MAINTENANCE OF TOOLS AND EQUIPMENT</b> TR: UFC 3-460-03F, T.O.s 00-25-172, 33-1-101, 11H5-35-1						
12.6.	Use vapor/oxygen/toxicity indicator	*					
<b>13</b>	<b>PROJECT PLANNING</b> TR: AFIs 32-1070; 32-1066; AFMAN 32-7004, UFC 3-600-02, UFC 03-460-01 ; Uniform Plumbing Code (UPC)						
13.1.1.	Installation procedure	**					
13.2.	Prepare working sketches	**					
13.3.	Prepare and use AF Form 103, Work Clearance Request	*					
13.4.	Prepare bill of materials request	*					
13.5.	Recurring Work Program (RWP) requirements	**					
<b>14</b>	<b>UTILITIES FUNDAMENTALS</b> TR: UPC; UFC 03-460-01						
14.6.1	Measure	*					
14.6.2	Cut	*					
14.6.3	Ream	*					
14.6.4	Thread	*					
14.6.5	Sweat	*					
14.7	Disinfect using chlorine	*					
14.8.1.	Utility maps	*					

1	2	3	4	5	6	7	8
Task Number	Task, Knowledge, and Technical Reference	* 5 Level ** 7 Level ◆ (SIVI)	Start Date	Complete Date	Trainee Initials	Trainer's Initials	CeTTest Complete
15	<b>WATER SYSTEMS TR: AFJMAN 32-1072; UPC/ Ken Kerri, Water Distribution System Operation and Maintenance</b>						
15.4.2.	Tap water main	*					
15.7.1.1.1.	Steel	*					
15.7.1.1.2.	Plastic	*					
15.7.1.1.3.	Copper	*					
15.7.1.2.1.	Transite	*					
15.7.1.2.2.	Ductile	*					
15.7.1.2.3.	Plastic	*					
15.7.1.2.4.	Steel	*					
15.7.2.	Fire hydrants	*					
17	<b>WASTEWATER SYSTEMS TR: AFMANs 32-1070, UFC 3-240-07/08/09; UPC; MOP-11</b>						
17.2.1.	Cast iron pipe	*					
17.2.2.	Plastic pipe	*					
17.3.	Establish trench grade	*					
17.4.	Establish pipeline slope	*					
17.5.	Backfill trenches	*					
17.6.	Drain excavations	*					
17.8.1.1.3.	Power augers	*					
21	<b>ELECTRICAL SYSTEMS TR: AFI 32-1064; T.O. 31-1-141 series</b>						
21.3.	Interpret schematics: Block, wiring, connection, schematic, ladder	*					
21.5.1.	Voltage	*					
21.5.2.	Resistance	*					
21.5.3.	Current	*					
21.6.	Inspect electrical components/circuits	*					
21.8.	Replace electrical components	*					
21.9.	Connect and disconnect motors	*					
21.10.	Apply safety precautions	*					

## **SECTION B - COURSE OBJECTIVE LIST (COL)**

(This section used when developing lesson plans)

**4. Measurement.** Measurement of each objective is indicated as follows:

**4.1. Written Test (W)** - used to sample each knowledge objective and the knowledge components of performance objectives.

**4.2. Performance Test (P)** - used under specified conditions in a formal testing mode to measure student accomplishment of performance objectives after the teaching-learning activity has been completed.

**4.3. Progress Checks (PC)** - administered by the instructor during classroom or laboratory instruction time to assess the student's accomplishment of knowledge or performance objectives.

**5. Standard.** The standard is 70% on written examinations. Standards for performance measurement are indicated in the objectives and delineated on the individual progress checklist. Instructor assistance may be provided as stated during the progress check, and students may be required to repeat all or parts of the behavior until satisfactory performance is attained.

**6. Proficiency Level.** Most task performance is taught to the "2b" proficiency level which means the student can do most parts of the task, but does need assistance on the hardest parts of the task (partially proficient). The student can also determine step-by-step procedures for doing the task.

**7. Course Objective List.** These objectives are listed in the sequence taught by Block of Instruction.

**7.1. Initial Skills Course.** A detailed listing of the initial skills course objectives may be obtained by written request to 366 TRS/DO, 727 Missile Road, Sheppard AFB TX 76311- 2254.

**7.2. 7-Skill Level Course.** A detailed listing of the Water and Fuel Systems Maintenance Craftsman course objectives may be obtained by written request to AFCESA.

## SECTION C - SUPPORT MATERIALS

### 8. CerTest.

**8.1. Air Force Qualification Training Packages.** An instructional package designed for trainees to qualify on core or diamond tasks. AFQTPs are the standardized method for performing the task. The AFQTP may be printed (paper-based), computer-based, or in other audiovisual media. See the AFCESA web pages for up-to-date AFQTPs at: [HQ AFCESA/CEOOF portal website](#)

### 8.2. CerTest

**8.2.1.** CerTest, a computer-based evaluation program ensures skilled craftsmen are available to meet the Air Force's changing needs. It enhances OJT and QT training by testing and evaluating an individual's knowledge of the principles and procedures in each specialty.

**8.2.1.1.** CerTest contains tests used to evaluate task knowledge received through different media such as: paper products, videotapes, and computer-based programs.

**8.2.1.2.** The CerTest program contains mandatory tests, required for upgrade. All diamond ( ) coded tasks on the STS have a corresponding mandatory CerTest.

**8.2.1.3.** CerTest is also a powerful training management tool. It can be used to find the strengths and weaknesses in an individual's training and experience. CerTest automatically records and updates all test results. The training manager can copy records to a disk so that an individual can bring current, accurate training information to a new unit; thereby helping the gaining supervisor evaluate the trainee's knowledge and experience.

**8.3.** CerTest also enables unit personnel to develop site-specific tests. These custom-made tests standardize testing on tasks unique to a specific duty station and/or assignment. The program contains a graphics library that may be used along with a menu-driven test editor to develop these site-specific tests.

**8.4.** CerTest also contains **optional** CDC pre-evaluation tools. Volume review exercises are available for progress checks after each volume is completed. After all volumes are completed in a set, the trainee may take the course review exercise before taking the final End of Course exam at the base training office. Commanders are encouraged to integrate these tools in their unit's OJT program.

**8.5.** CerTest is the CE platform for electronic CDC testing. Currently, all CE AFSs are allowed to use AFIADL's CerTest on installations where Base Test Control Facilities (TCFs) are equipped. See your UETM for further information.

**8.6.** The mandatory AFQTP CerTests are listed in each AFQTP, if required.

## SECTION D - TRAINING COURSE INDEX

**9. Purpose.** This section of the CFETP identifies training courses available for the specialty. Refer to the Education and Training Course Announcements (ETCA) web site, <https://etca.randolph.af.mil/> for complete information on Air Force courses.

### **10. Air Force In-Residence/Mobile Training Team (MTT) Courses.**

#### **Course Number Title Developer**

J3AZR3E451 01FA Fire Suppression Systems Maintenance 366 TRS

J3AZR3E451 02RB Reverse Osmosis Water Purification Unit (ROWPU)

J7AZT3E451 03BA Backflow Prevention Devices Testing 366 TRS

J3AZR3E471 00AA Liquid Fuel Storage Tank Entry Supervisor 366 TRS

J3AZR3E471 04AA Liquid Fuels Maintenance Technician 366 TRS (in development)

### **11. Air Force Institute for Advanced Distributed Learning (AFIADL) Courses.**

#### **Course Number Title Date**

CDC 3E451A Water and Fuel Systems Maintenance Journeyman, available 30 Jun 09

CDC 3E451B Water and Fuel Systems Maintenance Journeyman, available 31 Oct 09

### **12. Exportable Courses/Information.**

#### **Title Date**

Common Core 3-level

Common Core 7-level

Water and Fuel Systems Maintenance Craftsman (7-level)

### **13. Courses Under Development/Revision**

#### **Course Number/Course Title Date Due**

**13.1** J3AZR3E451 01FB Fire Suppression Systems Maintenance 366 TRS (TBD).

**13.2** J3AZR3E451 02RB Reverse Osmosis Water Purification Unit (ROWPU)

**13.3** J7AZT3E451 03BB Backflow Prevention Devices Testing 366 TRS (TBD).

**13.4** J3AZR3E451 01AB Liquid Fuel Tank Entry Supervisor (TBD).

**13.5** J3AZR3E451 02AA Liquid Fuel Systems Technician (TBD).

## SECTION E – MAJCOM-UNIQUE REQUIREMENTS

**14. The Rapid Utility Repair Kit (RURK).** The RURK will remain for PACAF use only for training and contingency operations. Units will document training on the AF Form 797 to satisfy performance and knowledge levels.

## SECTION F - HOME STATION TRAINING

**15.** The purpose of this section is to identify the tasks, training references, and training sources available in support of contingency/wartime training. Prime BEEF forces will train to meet the full range of tasks expected in the contingency environment. Training ranges from knowledge-type training conducted in a classroom (Category [CAT] I), to task-oriented hands-on (CAT II) training conducted in the field. These training requirements, frequencies, and sources are listed in AFI 10-210, *Prime Base Emergency Engineer Force (BEEF) Program*.

**15.1. HST Definition.** HST is training that is conducted at the individual's home station for contingency operations. The CE commander ensures training is provided and documented and arranges for subject matter experts to conduct training as required. HST requirements fall into two categories, CAT I and CAT II.

**15.1.1. CAT I Training.** Personnel assigned to base level CE units will receive initial and refresher training in all CAT I (knowledge-based) topics identified in AFI 10-210. Units will use Demonstration Performance Packages, Qualification Training Packages (QTPs), web-based training products, other multimedia training packages, and AF CE standardized lesson plans to present the material. MAJCOMs may develop and require other training materials to accomplish knowledge-based training.

**15.1.2. CAT-II Training.** CAT II training is primarily hands-on training as outlined in AFI 10-210. Units must make every effort to incorporate realism into their respective CAT II training programs. Field gear (to include primary weapons) will be used during training requirements such as, personal/work party security, convoy operations, defensive fighting positions, etc.

**15.1.2.1. Combat Skills Training (CST).** CST must be institutionalized as an integral part of any CAT II HST program. Lessons learned from operations such as IRAQI FREEDOM have taught us the importance of maintaining a higher level of combat readiness. Although the inclusion of combat skills-focused training into HST does not fully prepare CE personnel to work in a high threat combat environment, the steps taken to enhance CAT II training will help elevate units to a readiness level capable of supporting safe and effective operations in low to medium risk combat environments.

**15.1.2.2. Mission Essential Equipment Training (MEETS).** Wartime or contingency environments often involve the use of specialized and unique mission-essential equipment that civil engineers do not use in their day-to-day operations. Due to the cost and complexity, mission essential contingency equipment and trainer expertise are not commonly found at Continental United States (CONUS) installations. Personnel must be hands-on certified and the certification documented in their CFEPT. AFI 10-210 identifies minimum personnel to be trained, positions by specialty, frequencies and locations of training sites. Inadequate training on these key equipment items can negatively affect Air Force contingency operations.

**15.1.3. CAT III Training.** CAT III is primarily a team training venue. Silver Flag Exercise Site training is CAT III training. Silver Flag Exercise Sites are located at Tyndall AFB FL; Ramstein AB Germany; and Kadena AB Japan. They conduct CAT III training with their major focus on students being able to perform critical contingency task in a team environment. The training focuses on bare base beddown and sustainment operations using hands-on training with basic expeditionary airfield resources (BEAR) equipment in a realistic beddown environment. Where possible, combat skills training has been added to the curriculum to ensure realism and help fortify combat skills mentality amongst teams. All CE personnel who fill Unit Type Code (UTC) positions will receive team training at Silver Flag Exercise Sites with the exception of members on headquarters staff augmentation UTCs, pavement evaluation UTCs, and generator repair and maintenance UTCs.

## **15.2. Training References.**

**15.2.1. AFI 10-210.** AFI 10-210 identifies the Prime BEEF recurring training requirements. You can review this document by going to the Air Force publications web site.

**15.2.2. AFPAM 10-219 Series.** These publications assist in home station training and contingency responses.

**15.2.3. AFH 10-222 Series.** These publications provide expeditionary engineer craftsmen “how to” operating and maintenance procedures.

**15.2.4. AETC Courses.** AETC conducts formal contingency training courses on subjects such as bare base equipment, air base combat engineering, and readiness management. For course descriptions, refer to the ETCA website: <https://etca.randolph.af.mil/>.

**15.2.5. Web-based Products.** Web-based products are available on the CE Virtual Learning Center (VLC) website at: <https://afcesa.csd.disa.mil/kc/login/login.asp>. Personnel completing these courses can receive credit for CAT I training. CBT products can be used in a classroom setting to train as many personnel as possible. Attendance must be documented on a sign-in roster. The sign-in roster must be maintained IAW AFI 10-210.

**15.2.6. HQ AFCESA/CEX.** Maintains a comprehensive listing of training products that support the contingency training program.

**15.2.7. Ancillary Training.** AFI 36-2201, Volume 1, *Training, Development, Delivery, and Evaluation*, describes ancillary training as guidance or instruction that contributes to mission accomplishment. For a full list of mandatory ancillary training requirements go to the ETCA website (see paragraph 14.2.4).

**15.2.8. Deployment Support Training.** AFI 10-403, *Deployment Planning and Execution*, describes deployment support training requirements. Deployment support training is mandatory training that will aid a unit in preparing to deploy/redeploy.

Attachment 1  
**Abbreviations and Terms Explained**

**Advanced Distributed Learning (ADL).** Anytime, anyplace learning within DoD consisting of instructional modules comprised of sharable content objectives in an Internet/Intranet environment.

**Advanced Training (AT).** A formal course which provides individuals who are qualified in one or more positions of their Air Force Specialty (AFS) with additional skills/knowledge to enhance their expertise in the career field. Training is for selected career Airmen at the advanced level of the AFS.

**Air Force Career Field Manager (AFCFM).** An individual on the Air Staff charged with the responsibility for overseeing all training and career field management aspects of an Air Force specialty or group of specialties.

**Air Force Job Qualification Standard/Command Job Qualification Standard (AFJQS/CJQS).** A comprehensive task list that describes a particular job type or duty position. Supervisors will use this list to document task qualifications. The tasks on the AFJQS/CJQS are common to all persons serving in the described duty position.

**Air Force Qualification Training Package (AFQTP).** An instructional package designed for use at the unit to qualify or aid qualification in a duty position, program, or on a piece of equipment. AFQTPs identify the Air Force's standardized method for performing the task. The AFQTP may be printed (paper-based), computer-based, or in other audiovisual media.

**Air Force Training Record (AFTR).** Web-based relational database used to track personnel's upgrade training requirements. (Formerly known as COVER Train)

**Battlefield Airman.** Airmen specifically identified as Battlefield Airmen perform tasks to integrate and synchronize air and space operations in the deep or extended battle space. These Airmen routinely fight with joint maneuver and SOF units.

**Career Field Education and Training Plan (CFETP).** A comprehensive, multipurpose document encapsulating the entire spectrum of education and training for a career field. It outlines a logical growth plan that includes training resources and is designed to make career field training identifiable, eliminate duplication, and ensure training is budget defensible.

**Certification and Testing (CerTest).** A multi-media evaluation program used to test an individual's knowledge of principles and procedures in their career field.

**Commercial Off The Shelf (COTS).** Commercially-procured training products.

**Computer-Based Training (CBT).** A self-paced stand-alone computer product used to deliver interactive subject and task knowledge.

**Continuation Training.** Additional training exceeding requirements with emphasis on present and future duty assignments.

**Core Task.** A task Air Force Career Field Managers (AFCFMs) identified as a minimum qualification requirement within an Air Force specialty or duty position. These tasks exemplify the essence of the career field.

**Course Objective List (COL).** A publication derived from initial/advanced skills course training standard, identifying the tasks and knowledge requirements, and respective standards provided to achieve a 3-, 5-, and 7-skill level in this career field. Supervisors use the COL to assist in conducting graduate evaluations in accordance with AFI 36-2201v1, *Air Force Training Program, Training Development, Delivery and Evaluation*.

**Critical Task.** Tasks that have been identified by the work center supervisor as having a detrimental effect on mission accomplishment if not performed correctly. Critical tasks may or may not be the same as core tasks but are mandatory if identified as 'critical' to the individual's position by the supervisor or work center.

**Diamond Task (◆).** Diamond tasks are extremely important to the career field. Diamond tasks are the same as core tasks with one exception--equipment shortfalls at most locations have created problems with the actual hands-on certification of these tasks. In instances where required equipment is not available for instruction, completion of the task's AFQTP and passing the corresponding CerTest is all that is required for upgrade and qualification training. Hands-on certification should be accomplished at the first opportunity when equipment is available.

**Distance Learning (DL).** Formal courses that a training wing or a contractor develops for export to a field location (in lieu of resident training) for trainees to complete without the on-site support of formal school instructor. Some of the means employed to deliver DL are Video Teleseminar (VTS), Video Teletraining (VTT), and Computer-Based Training (CBT). Distance Learning courses are offered by the Air Force Institute of Technology, Air University, and Training Detachment.

**Duty Position Task.** The tasks assigned to an individual for the position currently held. These include as a minimum all core tasks, critical tasks, and any other tasks assigned by the supervisor.

**Enlisted Specialty Training (EST).** A mix of formal training (technical school) and informal training (on-the-job) to qualify and upgrade Airmen in each skill level of a specialty.

**Exportable Training.** Additional training via computer-assisted, paper text, interactive video, or other necessary means to supplement training.

**Field Technical Training (Type 4 and Type 7).** Special or regular on-site training conducted by a Field Training Detachment (FTD) (Type 4) or by a Mobile Training Team (MTT) (Type 7).

**Initial Skills Training.** AFS-specific training an individual receives upon entry into the Air Force or upon retraining into a 3-level awarding specialty. Normally, AETC conducts this training at one of their technical training wings.

**Instructional System Development (ISD).** A deliberate, orderly, and flexible process for planning, developing, implementing, and managing instructional systems. It ensures a cost-efficient approach is employed to teach personnel the knowledge, skills, and attitudes essential for successful job performance.

**Occupational Survey Report (OSR).** A detailed report showing the results of an occupational survey of tasks performed within a particular AFS.

**On-the-Job Training (OJT).** Hands-on, over-the-shoulder training conducted to certify personnel in both upgrade (skill-level award) and job qualification (duty position certification) training.

**Optimal Training.** The ideal combination of training settings resulting in the highest levels of proficiency on specified performance requirements within the minimum time possible.

**Proficiency Training.** Additional training, either in-residence, exportable advanced training courses, or on-the-job training provided to increase personnel skills and knowledge beyond the minimum required for upgrade.

**Qualification Training (QT).** Actual hands-on task performance training designed to qualify an individual in a specific duty position. This portion of the dual channel on-the-job training program occurs both during and after the upgrade training process. It is designed to provide the performance skills required to do the job.

**Readiness Training Package (RTP).** Establishes standard levels of knowledge and proficiency for common Disaster Preparedness and Readiness subject areas by providing instructors with training references, materials, and lesson objectives used in teaching and evaluating the course subject matter.

**Representative Sites.** Typical organizational units having similar missions, weapon systems or equipment, or a set of jobs, used as a basis for estimating average training capacities and costs.

**Resource Constraints.** Resource deficiencies, such as money, facilities, time, manpower, or equipment that precludes desired training from being delivered.

**Skills Training.** A formal course resulting in the award of a skill level.

**Specialty Training.** A mix of formal training (technical school) and informal training (on-the-job) to qualify and provide Airmen skill level upgrade.

**Specialty Training Standard (STS).** Describes skills and knowledge that Airmen in a particular AFS need on the job. Additionally, the STS illustrates AFS overall training requirements for both resident and nonresident courses. It further serves as a contract between the Air Education and Training Command (AETC) and the end user.

**Spin-up Training (SUT).** Training required just prior to select deployment. This training delivers the necessary tools for mission accomplishment. Typically, it is predicated on hard to attain contingency skills.

**Standard.** An exact value, a physical entity, or an abstract concept, established and defined by authority, custom, or common consent to serve as a reference, model, or rule in measuring quantities or qualities, establishing practices or procedures, or evaluating results; a fixed quantity or quality.

**Supplemental Training.** Training for a portion of an AFS without a change in AFSC. Formal training on new equipment, methods, and technology that are not suited for on-the-job training.

**Total Force.** All collective Air Force components (active duty, Reserve, Guard, and civilian elements) of the United States Air Force.

**Training Capacity.** The capability of a training setting to provide training on specified requirements, based on the availability of resources.

**Training Planning Team (TPT).** Comprised of the same personnel as a U&TW; however, TPTs are more intimately involved in training development and the range of issues is greater than is normal in the U&TW forum.

**Training Requirements Analysis.** A detailed analysis of tasks for a particular AFS to be included in the training decision process.

**Upgrade Training (UGT).** Identifies the mandatory courses, task qualification requirements and correspondence course completion requirements for award of the 5-, 7-, and 9-skill levels.

**Utilization and Training Workshop (U&TW).** A forum comprised of the AFCFM, MAJCOM Functional Managers (MFMs), Subject Matter Experts (SMEs), and AETC training personnel that determines career ladder training requirements.