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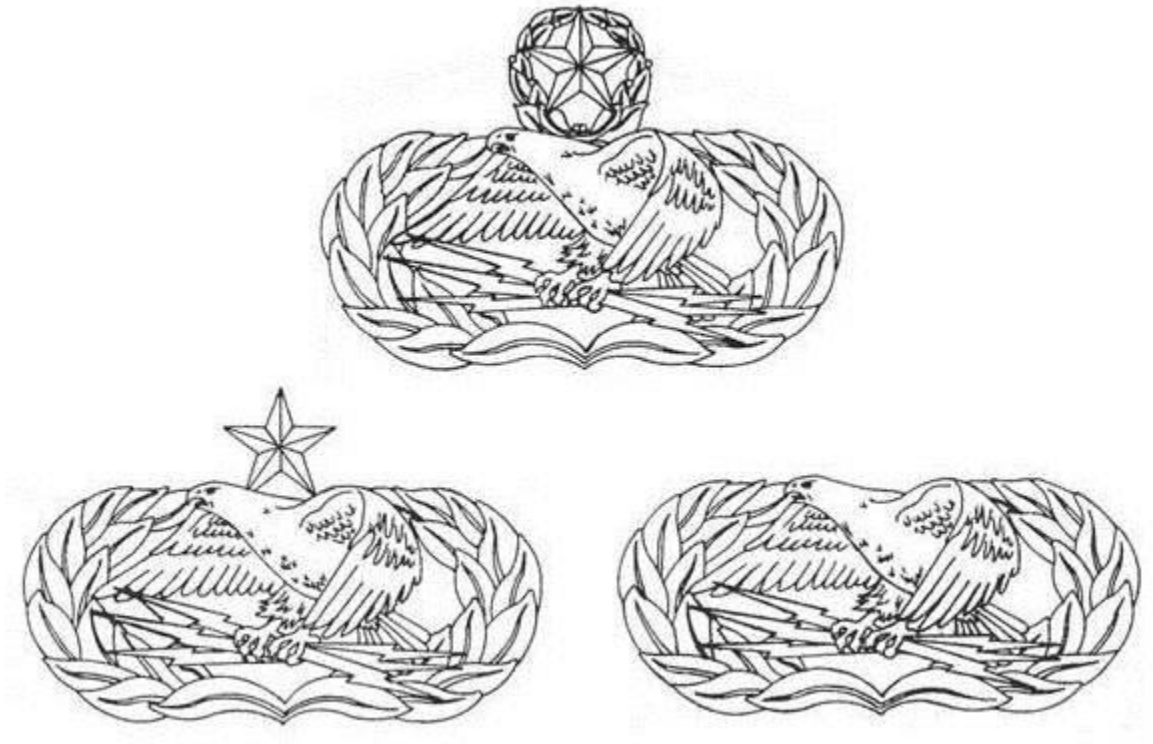

CAREER FIELD EDUCATION AND TRAINING PLAN

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CAREER FIELD EDUCATION AND TRAINING PLAN

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CAREER FIELD EDUCATION AND TRAINING PLAN

PART I

Preface

1. The changing Command, Control, Communications, Computer, and Intelligence (C4I) and Air and Space Expeditionary Forces (AEF) environments require vision, preparation, and attention to ensure people have the right skills and tools to deliver the C4I capabilities and the support required by the war fighter in meeting the Air Force mission of today and the vision of the future. Declining resources, expanding diversity of mission, and ever-changing technologies in the Air Force are impacting the availability of our most valuable resource--people. These factors will continue to exist in the future, making it essential for the work force to be effectively and efficiently trained to perform duties within each skill level of an Air Force Specialty (AFS). To meet the challenges of tomorrow, the Air Force must place a greater emphasis on career field training. This Ground Radar Career Field Education and Training Plan (CFETP) is a comprehensive core training document that identifies life-cycle training/education requirements, support resources, and minimum core task requirements for the 1C8X1 specialty. The plan is a "training road map" for the career field. It provides personnel a clear career path to success and makes career field training identifiable, measurable, and budget defensible.

2. This CFETP is a comprehensive education and training document that identifies life cycle education and training requirements, training support resources, and minimum core task requirements for this specialty. The CFETP documents the career field training program and consists of two parts. Management uses both parts in conjunction with the Training Business Area (TBA) to plan, manage, and control training within the career field. NOTE: Civilians occupying associated positions will use Part II to support duty position qualification training.

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 level with specialty qualifications (knowledge, education, experience, training, and other); and Section D indicates resource constraints. Some examples are funds, manpower, equipment, facilities; 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) and includes duties, tasks, Training References (TRs) to support training, AETC conducted training, wartime course and core tasks, and correspondence course requirements. Section B contains the Course Objectives List (COL) and training standards supervisors will use to determine if airmen satisfied training requirements. Section C identifies available support materials. An example is a Qualification Training Package (QTP), which may be developed to support proficiency 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. At unit level,

supervisors and trainers will use Part II to identify, plan, and conduct training commensurate with the overall goals of this plan.

3. Use of the guidance provided in this CFETP provides the foundation for effective and efficient training for individuals in this career field at the appropriate points in their careers. This plan enables the Air Force to train today's work force for tomorrow's jobs.

Abbreviations/Terms Explained

This section provides a common understanding of the terms that apply to the Ground Radar Career Field and Education Training Plan.

Advanced Training (AT). A formal course of training that leads to a technical or supervisory level of an AFS. Training is for selected airmen at the advanced level of an AFS.

Air and Space Expeditionary Force (AEF). The AEF is the Air Force's methodology for organizing, training, equipping, and sustaining rapidly responsive air and space forces to meet defense strategy requirements. Through the AEF, consisting of enabler and tempo banded capabilities the Air Force supports defense strategy requirements using a combination of both permanently assigned and rotational (allocated) forces.

Air Education Training Command (AETC). Responsible for the recruiting, training and education of Air Force personnel. AETC also provides pre-commissioning, professional military, and continuing education.

Air Force Career Field Manager (AFCFM). Representative appointed by the respective HQ USAF Deputy Chief of Staff or Under Secretariat to ensure that assigned Air Force specialties are trained and utilized to support Air Force mission requirements.

Air Force Enlisted Classification Directory (AFECD). The official directory for all military enlisted classification descriptions, codes, and identifiers. Establishes the occupational structure of the Air Force enlisted force. The occupational structure is flexible to permit enlisted personnel to specialize and develop their skills and abilities while allowing the Air Force to meet changing mission requirements. Individual enlisted personnel have a joint responsibility with commanders and supervisors at all levels to fully develop their abilities consistent with Air Force needs and within the established patterns of specialization.

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

Air Force Qualification Training Package (AFQTP). An instructional course designed for use at the unit to qualify or aid qualification in a duty position, program, or on a piece of equipment. It may be printed, computer-based, or other audiovisual media.

Air Force Specialty (AFS). A group of positions, with the same title and code that requires common qualifications.

Air University Associate-to-Baccalaureate Cooperative (AU ABC). Allows Airmen to turn a Community College of the Air Force Associates Degree into a Bachelor's Degree from an accredited university. The ABC program has established a partnership with various civilian higher-education institutions to offer four-year degree opportunities via distance learning. The participating schools will accept all of the credits earned by Airmen who have attained a CCAF degree and apply them to a Bachelor's degree related to their Air Force specialty.

Air University/ AFCDA (Air Force Career Development Academy). The result of a reorganization of the Air Force Institute for Advanced Distributed Learning (AFIADL); provides access to the Extension Course Institute.

Career Field Education and Training Plan (CFETP). A CFETP is a comprehensive core training document that identifies: life-cycle education and training requirements; training support resources and minimum core task requirements for a specialty. The CFETP aims to give personnel a clear path and instill a sense of industry in career field training. CFETPs are officially posted at http://www.e-publishing.af.mil/.

Certification. A formal indication of an individual's ability to perform a task to required standards.

Certifying Official. A person assigned by the commander to determine an individual's ability to perform a task to required standards.

Chemical, Biological, Radiological, Nuclear, and High-Yield Explosive (CBRNE) Task Qualification Training (TQT). CBRNE TQT ensures personnel maintain proficiency in performing mission-critical tasks in a CBRNE environment. See AFI 10-2501, Air Force Emergency Management (EM) Program Planning and Operations, and AFMAN 10-2602, Nuclear, Biological, Chemical and Conventional (NBCC) Defense Operations and Standards for additional information/requirements.

Chief Enlisted Manager (CEM) Code. CEM codes identify all chief master sergeant positions in the Enlisted Classification Structure. They also identify chief master sergeants who, through extensive experience and training, have demonstrated managerial ability to plan, direct, coordinate, implement, and control a wide range of work activity. Some managerial duties and responsibilities that are common to all chief enlisted managers are: 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 functional operation efficiency; planning and programming work commitments, and schedules; developing plans regarding facilities, supplies, and equipment procurement and maintenance.

Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR). Integrated systems of doctrine, procedures, organizational structures, personnel, equipment, facilities, and communications designed to support a commander's exercise of command and control through all phases of the operational continuum. C4 systems include base visual information support systems.

Computer Based Training (CBT). A forum for training in which the student learns via a computer terminal. It is an especially effective training tool that allows the students to practice applications while they learn.

Continuation Training. Additional advanced training that exceeds the minimum upgrade training requirements and emphasizes present or future duty assignments.

Core Competency. An integrated bundle of expert knowledge and organizational skills inherent to a particular career field(s) which makes a disproportionate contribution to the success of providing the right skills needed for military operations, anywhere anytime. It cannot be duplicated by any other organization, and is critical for the future.

Core Task. A task AFCFMs identify as a minimum qualification requirement for everyone within an AFSC, regardless of duty position. A core task may be specified for a particular skill level or in general across the AFSC. Guidance for using core tasks can be found in the applicable CFETP narrative.

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

Course Training Standard (CTS). A standard developed for all courses not governed by an STS, including specialized training packages and computer-based training courses.

Critical Tasks. Critical Tasks are tasks that require specific training and certification above and beyond other tasks. Tasks may be defined as critical either through AFI, Technical Orders, higher headquarters, or at any level in the unit.

Cross Utilization Training. Training on non-duty AFSC specific tasks.

Digital Airport Surveillance Radar (DASR). A digital radar system that provides coverage to support aircraft sequencing, separation, and radar approach/departure vectors in all weather conditions in the vicinity of civilian and military airfields.

Direct Reporting Unit (DRU). Air Force subdivisions directly subordinate to the CSAF. A DRU performs a mission that does not fit into any of the MAJCOMs. A DRU has many of the same administrative and organizational responsibilities as a MAJCOM (Example of a DRU: USAF Academy).

DoD Directive 8570.01 "Information Assurance Training, Certification, and Workforce Management." Provides guidance and procedures for the training, certification, and management of the DoD workforce conducting Information Assurance (IA) functions in assigned duty positions.

Duty Position Tasks. The tasks assigned to an individual for the position currently held. These include, at a minimum, all core tasks that correspond to the duty position, and tasks assigned by the supervisor.

Education and Training Course Announcement (ETCA). Located at https://etca.randolph.af.mil, the ETCA contains specific MAJCOM procedures, fund cite instructions, reporting instructions, and listings for those formal courses the MAJCOMs or FOAs conduct or manage. The ETCA contains courses the Air Force and reserve forces conduct or administer and serves as a reference for the Air Force, DoD, other military services, government agencies, and security assistance programs.

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.

Expeditionary Aerospace Force (EAF). The EAF concept is how the Air Force will organize, train, equip, and sustain itself by creating a mindset and cultural state that embraces the unique characteristics of aerospace power - range, speed, flexibility, precision - to meet the national security challenges of the 21st Century.

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

Field Operating Agency (FOA). FOAs are subdivisions of the Air Force directly subordinate to a headquarters US Air Force functional manager. A FOA performs field activities beyond the

scope of any of the MAJCOMs. The activities are specialized or associated with an Air Force-wide mission (Example of a FOA is the Air Force Weather Agency).

Field Training. Technical, operator, and other training that either a field training detachment or field training team conducts at operational locations on specific systems and associated direct-support equipment for maintenance and aircrew personnel.

Functional Area Manager (FAM). The individual accountable for the management and oversight of all personnel and equipment within a specific functional area to support operational planning and execution. Responsibilities include, but are not limited to, developing and reviewing policy; developing, managing, and maintaining Unit Type Codes (UTC); developing criteria for and monitoring readiness reporting; force posturing; and analysis. At each level of responsibility (Headquarters Air Force, MAJCOM, Air Component, FOA, DRU, and Unit), the FAM should be the most highly knowledgeable and experienced person within the functional area and have the widest range of visibility over the functional area readiness and capability issues.

Functional Manager (FM). An individual assigned collateral responsibility for training, classification, utilization, and career development of personnel. AFSC Functional Managers exist at MAJCOM, NAF and base level.

Global Combat Support System – Air Force (GCSS-AF). An enterprise infrastructure program established to develop, integrate, and deploy combat support information capabilities. The mission of GCSS-AF is to provide timely, accurate, and trusted Agile Combat Support (ACS) information to Joint and Air Force commanders, their staffs, and ACS personnel at all ranks and echelons with the appropriate level of security needed to execute the Air Force mission throughout the spectrum of military operations. GCSS-AF is the means by which ACS functional systems will be modernized and integrated to improve business processes supported on a single robust network-centric infrastructure. In addition to integrating combat support applications, GCSS-AF also provides core enterprise services such as a common user presentation through the AF Portal, Enterprise Information Management (Workflow, Records Management, Document Management, Knowledge Management, and Collaboration), and an enterprise data warehouse.

Global Command and Control System (GCCS). An automated information system designed to support deliberate and crisis planning with the use of an integrated set of analytic tools and flexible data transfer capabilities. GCCS will become the single C4I system to support the warfighter from foxhole to command post.

Go/No-Go. The "Go" is the stage at which a trainee has gained enough skill, knowledge, and experience to perform the tasks without supervision; meets the task standard. "No-Go" is the stage at which the trainee has not gained enough skill, knowledge, and experience to perform task without supervision; does not meet task standard.

Individual Training Plan (ITP). Use AF Form 623, On-the-Job Training Record/AF Form 623B, or other approved records system (e.g., Training Business Area (TBA)). The AF Form 623 reflects past and current qualifications and is used to determine training requirements. It is intended to be a complete history of past training and current qualifications. Supervisors will ensure all documentation is accurate and comprehensive.

Initial Skills Training. A formal school course that results in an AFSC 3-skill level award for enlisted or mandatory upgrade training to qualified officers.

Instructional System Development (ISD). A deliberate and orderly (but flexible) process for planning, developing, implementing, and managing instructional systems. It ensures personnel are taught in a cost efficient way to become educated on the knowledge, skills, and abilities essential for successful job performance.

Joint Tactical Radio System (JTRS). JTRS will link the power of the Global Information Grid (GIG) to the war fighter in applying fire effects and achieving overall battlefield superiority. By developing and implementing an open architecture of cutting-edge radio waveform technology, multiple radio types (e.g. handheld, ground-mobile, airborne, maritime, etc.) are now allowed to communicate with one another. The ultimate goal is to produce a family of interoperable, modular, software-defined radios that operate as nodes in a network to ensure secure wireless communication and networking services for mobile and fixed forces. These goals extend to U.S. allies, joint and coalition partners, and disaster response personnel.

Knowledge Training. Training used to provide a base of knowledge for task performance. It may also be used in lieu of task performance when the training capability does not exist. Learning gained through knowledge rather than hands-on experience.

Major Command (MAJCOM). A MAJCOM represents a major Air Force subdivision having a specific portion of the Air Force mission. Each MAJCOM is directly subordinate to HQ USAF. MAJCOMs are interrelated and complementary, providing offensive, defensive, and support elements.

Master Task Listing (MTL). A comprehensive list (100%) of all tasks performed within a work center and consisting of the current CFETP or AFJQS and locally developed AF Forms 797. Also, should include tasks required for deployment and/or UTC requirements.

Master Training Plan (MTP). Employs a strategy for ensuring the completion of all work center job requirements by using an MTL, providing milestones for task/CDC completion and prioritizes deployment/UTC tasks, home station training tasks, upgrade tasks, and qualification tasks.

Occupational Analysis Report (OAR). A detailed report showing the results of an occupational survey of tasks performed within a particular AFSC.

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) training.

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

Qualification Training. Hands-on, task performance based training designed to qualify airmen in a specific duty position. This training program occurs both during and after the upgrade training process and is designed to provide skills training required to do the job.

Resource Constraints. Resource deficiencies (such as money, facilities, time, manpower and equipment) that preclude desired training from being delivered.

Specialty Training Requirements Team (STRT). A meeting chaired by the AFCFM with MAJCOM FMs, AETC Training Managers, Subject Matter Experts (SME), and HQ AETC Occupational Analysis Division (OAD) in attendance. Typically held three months prior to a Utilization and Training Workshop (U&TW) to finalize any CFETP changes or enlisted classification directory descriptions.

Specialty Training Standard (STS). An Air Force publication that describes an Air Force specialty in terms of tasks and knowledge that an airman in that specialty may be expected to perform or to know on the job. Also identifies the training provided to achieve a 3-, 5-, or 7-skill level within an enlisted AFS. It further serves as a contract between AETC and the functional user to show which of the overall training requirements for an Air Force Specialty Code (AFSC) are taught in formal schools and correspondence courses.

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. It is a fixed quantity or quality.

System Training Plan (STP). A living document that explains what training is needed for a system and how to obtain the training.

Task Module (TM). A group of tasks performed together within an AFS that require common knowledge, skills, and abilities. TMs are identified by an identification code and a statement.

Total Force. All collective components (active, reserve, guard, and civilian elements) of the United States Air Force.

Training Advisory Group (TAG). Chaired by the AFCFM and attended by the MAJCOM, selected DRU's, and FOA functional managers. The TAG sets training goals and priorities, reviews training programs, and evaluates emerging training technologies. The group meets, as required, to prioritize training product development.

Training Business Area (TBA). A web-based training application that provides Air Force war fighters with global, real-time visibility into qualifications, certifications, and training status of communications professionals. TBA supports base, wing, and work center training management activities by automating business processes and capabilities to eliminate paper-based practices. The system centralizes management of training task data, provides user access to CFETPs/JQSs, and increases security through a single AF Portal log on.

Training Capability. 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, TPTs are more intimately involved in training development and the range of issues examined is greater than in the U&TW forum.

Training Requirements Analysis (TRA). A detailed analysis of tasks for a particular AFSC to be included in the training decision process.

Training Setting. The type of forum in which training is provided (formal resident school, on-the-job, field training, mobile training team, self-study, etc.).

Unit Type Code (UTC). A five-character alphanumeric code identifying a specific force package of personnel and/or equipment. The UTC is the means for linking logistics and manpower details within a unit type and is used to communicate force data. The UTC represents a wartime capability designed to fill a valid contingency requirement.

Upgrade Training. Training that leads to the award of a higher skill level.

Utilization and Training Pattern. A depiction of the training provided to, and the jobs performed by, personnel throughout their tenure within a career field or AFS. There are two types of patterns: 1) Current pattern, which is based on the training provided to incumbents and the jobs to which they have been and are assigned; and 2) Alternate pattern, which considers proposed changes in manpower, personnel, and training policies.

Utilization and Training Workshop (U&TW). A forum of the AFCFM, MAJCOM Functional Managers, subject matter experts (SME), and AETC training personnel that determines career ladder training requirements. This is an executive decision meeting following the Specialty Training Requirements Team meeting.

Wartime Tasks. Those tasks which must be taught when courses are accelerated during a wartime environment. In response to a wartime scenario, these tasks will be taught in the 3-level course in a streamlined training environment. These tasks are only for those career fields that still need them applied to their schoolhouse tasks.

Workflow. A series of steps necessary for the initiation, tracking, and delivery of services or outputs with the capability to cut across existing or future organizational boundaries. Furthermore, web-based workflow products allow electronic coordination, staffing, and task management of documents and files. They are relational to an electronic version of the Staff Summary Sheet (SSS) and other AF/DoD forms used for routing/collection of information. Automation provides the capability to suspense and track correspondence through the workflow process and provides action officers and document originators status on their packages. Provides users the capabilities to comply with structured electronic workflow processes and the flexibility to create/develop ad hoc workflow courses of actions. Future use of standardized EIM tools will enhance usability and eliminate legacy methods.

Section A - General Information

1. Purpose of the CFETP. This CFETP provides the information necessary for AFCFMs, MAJCOM Functional Managers (MFM), commanders, training managers, supervisors, and trainers to plan, develop, manage, and conduct an effective and efficient career field training program. The plan outlines the initial skills, upgrade, qualification, advanced, and proficiency training those individuals in AFSC 1C8X1 should receive in order to develop and progress throughout their careers. Initial skills training is the AFS specific training an individual receives upon entry into the AF or upon retraining into this specialty for award of the 3-skill level. This training is provided by the 338th Training Squadron (TRS) at Keesler AFB, MS. Upgrade training identifies the mandatory courses, task qualification requirements, Career Development Course (CDC) completion, and correspondence courses required for award of the 5-, 7-, or 9-skill level. Qualification training 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 is formal specialty training used for selected airmen. Proficiency training is additional training, either in-residence or exportable advanced training courses, or on-the-job training provided to personnel to increase their skills and knowledge beyond the minimum required for upgrade. The CFETP has several purposes, some of which are:

1.1. Serves as a management tool to plan, manage, conduct, and evaluate a career field-training program. Also, ensures that established training is provided at the appropriate point in an individual's career.

1.2. 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.

1.3. Lists training courses available in the specialty, identifies sources of training, and the training medium.

1.4. Identifies major resource constraints that impact implementation of the desired career field training program.

2. Use of the CFETP. The CFETP is maintained by the 1C8XX Air Force Career Field Manager (AFCFM), AF/A3O-B. MAJCOM FMs and AETC review the plan annually to ensure currency and accuracy and forward recommended changes to the AFCFM. Using the list of courses in Part II, they determine whether duplicate training exists and take steps to eliminate/prevent duplicate efforts. Career field training managers at all levels use the plan to ensure a comprehensive and cohesive training program is available for each individual in the career ladder.

2.1. AETC training personnel develop/revise formal resident and exportable training based upon requirements established by the users and documented in the STS. They also develop procurement and acquisition strategies for obtaining resources needed to provide the identified training.

2.2. MAJCOM FMs ensure their training programs complement the CFETP for mandatory initial skill and upgrade requirements. They also identify the needed AFJQSs/AFQTPs to document unique upgrade and continuation training requirements. Requirements are satisfied through OJT, resident training, contract training, or exportable courseware/courses. MAJCOM-developed training to support this AFSC must be included in this plan.

2.3. 81 TRSS Qualification Training Flight (Q-Flight) personnel develop training packages (AFJQSs/AFQTPs) based on requests submitted by the MAJCOMs and according to the priorities assigned by the AFCFM.

2.4. Unit level training managers and supervisors manage and control progression through the career field by ensuring individuals complete the mandatory training requirements for upgrade specified in this plan and supplemented by their MAJCOM. The list of courses in Part II is used as a reference for planning continuation or career enhancement training.

2.5. Submit recommended CFETP corrections to the 81 TRSS Q-Flight Customer Service Desk at 81 TRSS/TSQS, 601 D Street, Keesler AFB MS 39534-2235 or call DSN 597-3343. To contact electronically send email to: qflight.customer.service@us.af.mil.

2.6. Submit recommended CFETP additions/deletions through your MAJCOM Functional Manager.

3. Coordination and Approval of the CFETP. The AFCFM is the approval authority. MAJCOM representatives and AETC training personnel coordinate on the career field training requirements. The AETC training manager initiates an annual review of this document by AETC and MAJCOM functional managers to ensure the CFETP's currency and accuracy by using the list of courses in Part II to eliminate duplicate training.

Section B - Career Field Progression and Information

4. Specialty Description. This information supplements that presented in the AFECD.

4.1. Radar Apprentice/Journeyman/Craftsman (1C831/1C851/1C871).

4.1.1. Specialty Summary. Installs, maintains, and repairs fixed or mobile air traffic control, weather, ground aircraft control and warning radar systems, related radar operator training devices, aircraft identification equipment, remoting systems, video mappers, computerized processors, and communications subsystems. Operates and relocates related support and communications equipment. Uses electronic test equipment. Related DoD Occupational Subgroup: 110300.

4.1.2. Duties and Responsibilities:

4.1.2.1. Performs ground radar functions. Plans, organizes, and schedules work assignments, workloads, and maintenance procedures for ground radar activities. Establishes production controls and standards. Prepares reports on maintaining, installing, repairing, removing, and siting all types of ground radar systems. Ensures operations and maintenance economies by improving work methods and procedures. Designs and develops organizational structures, including manning, duty assignments, and workloads. Inspects and evaluates ground radar activities. Serves on or directs ground radar maintenance inspection teams organized to evaluate base or command maintenance programs. Performs ground radar research and development projects.

4.1.2.2. Evaluates and resolves problems encountered during siting, installing, repairing, and overhauling ground radar systems. Uses layout drawings, schematics, and pictorial diagrams to solve maintenance problems and analyzes construction and operating characteristics of equipment to determine source of malfunction. Plans, schedules, and implements installation of ground radar systems. Interprets maintenance and installation policy and procedures. Installs ground radar systems. Assembles, connects, modifies, and adjusts ground radar subassemblies such as antennas, transmitters, receivers, processors, indicator groups, and ancillary systems such as beacon equipment and video mappers. Conducts tests of installed equipment for proper component assembly and compliance with technical orders. Places in operation, calibrates, tunes, and aligns subassemblies according to approved technical data to maximize performance. Disassembles, relocates, assembles, and connects ground radar systems. Inspects and tests equipment for serviceability before and after relocation. Performs maintenance inspections on ground radar systems.

4.1.2.3. Repairs, overhauls, and modifies ground radar systems. Isolates malfunctions by prescribed systems checking procedures, visual inspections, voltage checks, and other tests using electronic test equipment. Repairs ground radar subassemblies, including antennas, transmitters, receivers, operator training devices, radar beacon systems, remoting systems, video mappers, display systems, and associated communications systems and related equipment. Conducts performance tests of repaired subassemblies using bench mockups and applicable test equipment. Accomplishes organizational and intermediate level equipment modifications according to time compliance technical orders or field directives. Assembles, installs, and repairs antenna systems, transmission lines, and waveguides. Performs corrosion control.

4.1.2.4. Establishes requirements for tools, support equipment, personnel, supplies, and technical documents. Establishes work standards, methods, and controls for functions such as

periodic inspections, operational testing, and equipment repair. Identifies maintenance problem areas and initiates corrective action. Develops methods for improving maintenance effectiveness and efficiency. Interprets inspection findings and determines adequacy of corrective actions. Ensures maintenance data collection forms and inspection and maintenance records are accurately completed. Recommends changes to improve equipment performance or maintenance practices. Evaluates justification and practicality of recommended improvements to equipment performance and maintenance procedures. Develops and enforces safety standards and practices for ground radar maintenance activities. Coordinates with appropriate agencies to ensure systems support requirements.

4.2. Superintendent (1C890).

4.2.1. Specialty Summary. Manages system analysis and design, programming, systems operation and maintenance, resource management and security management. Directs activities for installing, maintaining, repairing, overhauling, deploying, and modifying ground radar and airfield systems and equipment platforms to include: air traffic control, weather, ground aircraft control and warning radar systems; air traffic control radio; meteorological and navigational aid systems. Related DoD Occupational Group: 110100

4.2.2. Duties and Responsibilities:

4.2.2.1. Plans and organizes maintenance activities. Plans and supervises system installation and evaluates facilities layout and performance standards. Designs and develops organizational structures and determines equipment, training, and supplies required for systems implementation and support. Executes operational plans to ensure positive control of assigned forces. Evaluates operational readiness of ground radar and airfield systems equipment, and related support equipment.

4.2.2.2. Directs activities responsible for system analysis and design, programming, operations and maintenance, security, systems management, technical support and resource management. Implements and interprets policies, directives and procedures.

4.2.2.3. Directs maintenance activities. Directs personnel employed in siting, deploying, inspecting, adjusting, removing, replacing, and repairing ground radar and airfield systems and related equipment. Prepares and analyzes reports encompassing siting, deploying, maintaining, installing, repairing and removing ground radar and airfield systems and related equipment. Coordinates activities and resolves common problems. Directs overhaul and repair of ground radar and airfield systems and related equipment. Ensures work standards are maintained. Determines extent and economy of repair, including disposition of malfunctioning equipment.

4.2.2.4. Inspects and evaluates maintenance activities for compliance with directives. Evaluates, rates and prepares reports on activity effectiveness. Recommends and implements corrective action for improved methods and procedures. Evaluates effectiveness of equipment usage, systems performance, customer service, supplies, and system scheduling, processing, and maintenance.

4.2.2.5. Supervises maintenance functions. Resolves problems with installing, maintaining, repairing and overhauling systems and equipment. Checks systems and equipment for proper siting, installation, and serviceability. Establishes local maintenance procedures and policies. Performs research and development of new systems and equipment.

4.2.2.6. Establishes training requirements. Establishes training programs to meet local knowledge and certification requirements.

4.2.2.7. Plans, programs, and develops budget inputs to ensure resource availability for operational requirements.

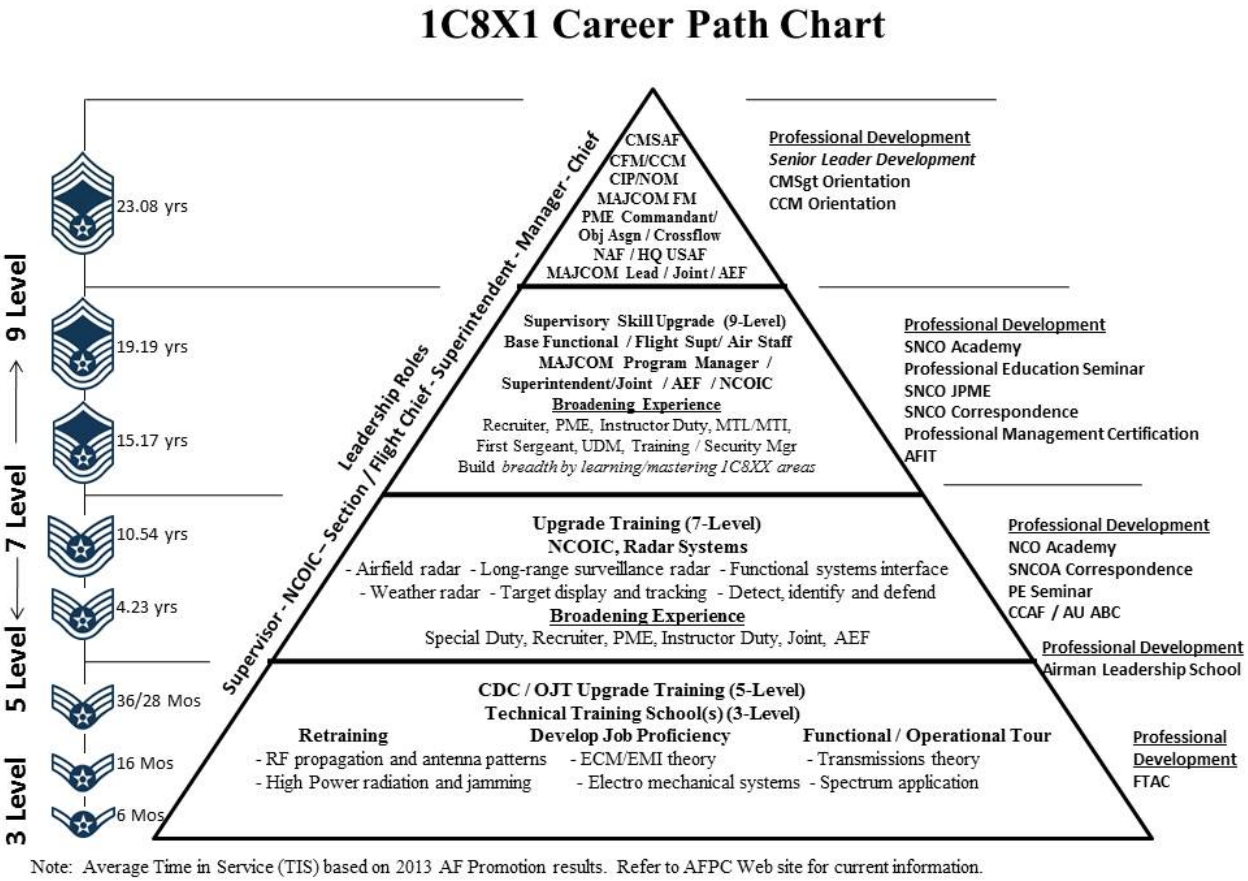
4.2.2.8. Manages plans, implementation, and development functions. Helps functional users define requirements. Supervises functional user requirements translation into automated systems capabilities. Organizes teams that use methodologies to meet mission requirements. Supervises test and evaluation efforts to determine performance. Organizes and participates in mission implementation and conversion. Ensures continued interface between functional users and programming and operations personnel. Ensures compliance with standards for systems documentation.

4.3. Chief Enlisted Manager. This specialty "caps" at the Chief Master Sergeant level with those specialties that came up through the Ground Radar/Airfield Specialist (1C8XX) career ladders. Personnel attaining the rank of CMSgt are assigned broad ranging duties in directing and managing diverse Ground Radar/Airfield systems functions.

4.4. MAJCOM Functional Manager (MFM). (AFI 36-2201, *Air Force Training Program*; AFI 36-2101, *Classifying Military Personnel (Officers and Enlisted)*; *Air Force Enlisted Classification Directory*). Advises the MAJCOM/A3/5 and Air Staff on 1C8XX utilization and training issues. Serves as the MAJCOM voting representative during career field Specialty Training and Requirements Team (STRT) and Utilization and Training Workshops (U&TW). Assists in gathering inputs and data to complete enlisted grade allocation for Career Progression Group (CPG) reviews. Provides guidance to subordinate units on 1C8XX personnel issues. Assists with the dissemination of information regarding Air Force and career field policies, plans, programs, and procedures to subordinate units. Assists in identifying qualified subject matter experts to help with the development of Specialty Knowledge Tests (SKT) and the Career Development Course (CDC). Acts as the primary MAJCOM reviewer on CDC training and classification waiver request packages. Coordinates on all MAJCOM 1C8XX staffing and manpower issues.

4.5. Air Force Career Field Manager (AFCFM). (AFPD 36-26, *Total Force Development*; AFI 36-2201, *Air Force Training Program*; AFI 36-2101, *Classifying Military Personnel (Officers and Enlisted)*; Air Force Enlisted Classification Directory). Appointed by the Air Force Deputy Chief of Staff, Operations, Plans and Requirements Officer (HAF/A3/A5). Advisor to the HAF/A3/A5 on all matters affecting the Ground Radar/Airfield career fields. Communicates directly with MFMs and AETC Training Managers to disseminate Air Force and career field policies and program requirements. Ensures development, implementation, and maintenance of the CFETP. Serves as the chairperson for the STRT/U&TW and uses it as a forum to determine and manage career field education and training requirements. Possesses final authority to waive CFETP requirements, including CDCs. Assists AETC training managers and course supervisors with planning, developing, implementing, and maintaining all AFSC-specific training courses. Assists in the development of AFSC-related manpower standards.

5. Skill/Career Progression. Adequate training and timely progression from the apprentice to superintendent skill levels play an important role in the Air Force's ability to accomplish its mission. It is essential that everyone involved in training do their part to plan, manage and conduct an effective training program. The guidance provided in this part of the CFETP and the 1C8X1 Education and Training Path table will ensure individuals receive viable training at appropriate points in their careers.



Note: Average Time in Service (TIS) based on 2013 AF Promotion results. Refer to AFPC Web site for current information.

6. Training Decisions. This CFETP was developed to encapsulate an entire spectrum of training requirements for the Radar career field, using a building block approach (simple to complex). Included in this spectrum is the strategy of 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.

6.1. Proficiency Training. This training is job qualification for an assigned duty position. Additional qualification training becomes necessary when personnel transfer to another duty position, the unit mission changes, a new personnel program comes on board, or any time changes in techniques or procedures occur.

6.1.1. The 81 TRSS/TSQ (Q-Flight) develops AFJQSs/AFQTPs to support tasks relating to communications-electronics and communications-computer systems, functions and duties. Completion of AFJQSs/AFQTPs is mandatory by duty position for personnel in upgrade or qualification training.

6.1.2. CDC development is restricted to four volumes, two hundred pages each. The following table outlines 5-level CDC contents.

1C851	
VOLUME 1	Introduction to Radar
VOLUME 2	Airfield Radar Systems
VOLUME 3	Digital Radar Systems
VOLUME 4	Deployable Radar Systems

6.2. No Seven-Level requirements currently exist for this AFSC.

6.3. No Nine-Level requirements currently exist for this AFSC.

6.4. Commercial Certifications. Below are some available commercial certifications for 1C8X1 technicians. An "X" in the DANTES column indicates that testing may be completed at the base education office. Tuition Assistance (TA) pays for only one certification during an entire career. See the local base education office for more information. The Department of Veterans Affairs (VA) has licensing and certification benefits that can be used, including the Montgomery GI Bill. Visit http://www.gibill.va.gov/pamphlets/lcweb.htm for more information.

Certifications	Criteria	Website	DANTES
Electronics Technician Association (ETA) • Associate CET • Journeyman CET Radar	•Experience • Written Exam	http://www.eta-i.org/	X
National Association of Radio and Telecommunications Engineers (NARTE) • Junior Telecommunications Tech • Senior Telecommunications Tech • Master Telecommunications Tech	• Education • Experience • References • Written Exam	http://www.narte.org/h/telecom.asp	X
Project Management Institute • Project Management Professional (PMP)	• Education • Experience • Written Exam	http://www.pmi.org/Certification/Project-Management-Professional-PMP.aspx	

7. Community College of the Air Force (CCAF) Academic Programs. Enrollment in CCAF occurs upon completion of basic military training. CCAF provides the opportunity for all enlisted members to obtain an Associate in Applied Science degree. In order to be awarded the CCAF degree, all academic requirements must be completed before the student separates from the Air Force, retires, or is commissioned as an officer. In addition to its associate's degree program, CCAF offers the following:

7.1. CCAF Instructor Certification. The College offers the CCAF Instructor Certification to instructors teaching full time in a CCAF affiliated school. To qualify, instructors must complete a 3 semester hour Instructor Methodology course, a 12 semester hour Teaching Internship, have one year teaching experience from date of Teaching Internship completion, hold an associate or higher degree, complete at least 1,000 hours of documented practical experience teaching a CCAF course(s), and be recommended by their commander/commandant.

7.2. The Electronic Systems Technology (4VHP) program applies to this 1C8XX career field.

7.2.1. Degree Requirements: Individuals must hold the 5-skill level at the time of program completion.

	Semester hours
Technical Education	24
Leadership, Management, and Military Studies	6
Physical Education	4
General Education	15
Program Electives	15
	Total 64

7.2.2. 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 will be applied from Technical Core/Technical Elective subjects and courses.

7.2.3. Leadership, Management, and Military Studies (6 semester hours): Professional military education and/or civilian management courses. See CCAF General Catalog for application of civilian management courses.

7.2.4. Physical Education (4 semester hours): Satisfied upon completion of basic military training.

7.2.5. General Education (15 semester hours): Courses must meet the criteria for application of courses to the General Education requirement and be in agreement with the definitions of applicable General Education subjects/courses as outlined in the CCAF General Catalog.

7.2.6. General Education Mobile (GEM): GEM is a partnership between CCAF and civilian academic institutions to offer general education courses to meet CCAF A.A.S. degree requirements. Courses are offered via distance learning which reduces CCAF educational impact of deployments, PCS and family commitments.

7.2.7. Program Elective (15 semester hours): Satisfied with applicable Technical Education; Leadership, Management, and Military Studies; or General Education courses, including natural science courses meeting General Education requirement application criteria. Six semester hours of CCAF degree applicable technical credit otherwise not applicable to this program may be applied.

7.3. The Professional Manager Certification (PMC): The College offers a professional credential that formally recognizes an individual's advanced level of education and experience in leadership and management, as well as professional accomplishments. The program provides a structured professional development track that supplements Enlisted Professional Military Education (EPME) and Career Field Education and Training Plan (CFETP).

7.3.1. The PMC is primarily designed for Air Force SNCO's. However, any enlisted Airmen who meet all program requirements may be nominated and awarded the PMC. Once an individual retires, separates or is commissioned, they are no longer eligible for the PMC.

7.3.2. PMC Requirements:

7.3.2.1. Award of 7 skill-level (Craftsman) or higher.

7.3.2.2. Complete ALS or equivalent EPME (In-residence or correspondence).

7.3.2.3. Complete NCOA or equivalent EPME (In-residence or correspondence).

7.3.2.4. Complete SNCOA or equivalent EPME (In-residence or correspondence).

7.3.2.5. Complete 30 semester hours of leadership/management coursework.

7.3.2.5.1. At least 6 semester hours of leadership/management course work must be completed from an accredited college or university by testing credit (CLEP/DSST/Excelsior).

7.3.2.5.2. Civilian courses must emphasize the fundamentals of leadership and/or management of human resources. Examples: Principles of Management, Personnel Management, Human Resource Management, Principles of Supervision, and Organizational behavior.

7.3.2.6. A copy of the civilian college or university transcript reflecting completed leadership/management courses is required.

7.3.2.7. Credit by earned completion of EPME is applied toward the 30 semester hour requirement.

7.3.3. Awarded CCAF degree.

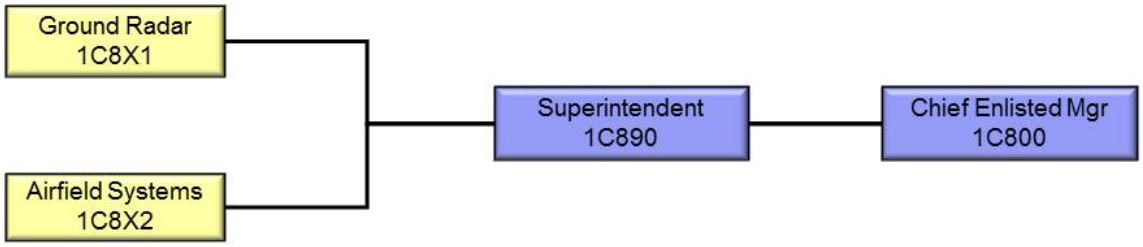
7.3.4. Recommended for certification by the unit commander or commandant.

7.4. 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.

7.5. See the current CCAF General Catalog for details regarding the Associates of Applied Science in Electronic Systems Technology. The catalog is available at your education office, or from http://www.au.af.mil/au/ccaf/.

7.6. Additional off-duty education is highly encouraged. Individuals desiring to become an AETC instructor should be actively pursuing an associate degree. A degreed faculty is necessary to maintain CCAF's accreditation through the Southern Association of Colleges and Schools.

8. Career Field Path. The following summarizes career progression and personnel allocations across the career ladder. 1C8X1 personnel maintain their individual AFSC identifiers through the rank of MSgt. Upon promotion to SMSgt, 1C8X1 and 1C8X2 merge to become a 1C890. Specific demographic information is available on the Web at http://wwa.afpc.randolph.af.mil/demographics/.



1C8X1, RADAR EDUCATION AND TRAINING PATH	
EDUCATION AND TRAINING REQUIREMENTS	**AVERAGE SEW ON TIME AND COMMENTS**
BASIC MILITARY TRAINING SCHOOL (BMTS)	
APPRENTICE TECHNICAL SCHOOL (3-SKILL LEVEL).....Mandatory	Amn..... 6 months
UPGRADE TO JOURNEYMAN (5-SKILL LEVEL) Minimum 12 months OJT training (9 months for retrainees). Complete 5-Level CDCs. .....Mandatory. Specific AFJQSs/AFQTPs for equipment at assigned location by duty position. .....Mandatory. Generic AFJQSs/AFQTPs for various unit level duties. .....Mandatory. AETC Supplemental training courses as determined by MAJCOM .....Optional. Community College of the Air Force Associates Degree .....Optional.	A1C ..... 16 months SrA ..... 3 years Earliest ..... 28 Months HYT ..... 8 years
AIRMAN LEADERSHIP SCHOOL (ALS) Attendance is limited to SSgt selectees or those attaining 48 months Total Active Federal Military Service (TAFMS) and who have not been selected for promotion to SSgt. Completion is mandatory before assuming the rank of SSgt. ANG/AFRC may complete by correspondence course. .....Mandator.y	TRAINER: Must meet trainer eligibility requirements as per AFI 36-2201.
UPGRADE TO CRAFTSMAN (7-SKILL LEVEL) Minimum rank of SSgt. Minimum12 months OJT training (6 months for retrainees). Completion of 7-level CDCs, if available. Must be 7-level to sew on TSgt.....Mandatory. Generic AFJQSs/AFQTPs for various unit level duties. .....Mandatory. AETC Supplemental training courses as determined by MAJCOM .....Optional. Community College of the Air Force Associates Degree .....Desired.	SSgt ..... 4.23 years Earliest ..... 3 years HYT ..... 15 years TSgt..... 10.54 years Earliest ..... 5 years HYT ..... 20 years CERTIFIER: Must meet certifier eligibility requirements as per AFI 36-2201.

1C8X1, RADAR EDUCATION AND TRAINING PATH	
EDUCATION AND TRAINING REQUIREMENTS	**AVERAGE SEW ON TIME AND COMMENTS**
NONCOMMISSIONED OFFICER ACADEMY (NCOA) Completion is mandatory before assuming the rank of MSgt. .....Mandatory. Active duty attendance is limited to TSgt, MSgt Selectee, or MSgt. ANG/AFRC TSgt or MSgt may attend in-residence may complete by correspondence course. Community College of the Air Force Associates Degree .....Highly Desired	MSgt..... 15.17 years Earliest ..... 8 years HYT ..... 24 years
USAF SENIOR NONCOMMISSIONED OFFICER ACADEMY (SNCOA) Attendance is limited to TSgt (correspondence course only), MSgt, SMSgt. Completion is mandatory before assuming the rank of SMSgt. .....Mandatory. SNCOA Correspondence Course .....Optional. ANG/AFRC may complete by correspondence course. ANG/AFRC MSgts may attend in-residence.....Mandatory.	SMSgt ..... 19.19 years Earliest ..... 11 years HYT ..... 26 years
UPGRADE TO SUPERINTENDENT (9-SKILL LEVEL) Awarded upon sew on of SMSgt.....Mandatory. AFJQSs/AFQTPs for various unit level duties. .....Mandatory.	
CHIEF MASTER SERGEANT	CMSgt ..... 23.08 years Earliest ..... 14 years HYT ..... 30 years

NOTE 1: Published sew-on times are Air Force averages. Refer to the Air Force Personnel Center's homepage to determine career field specific information: http://www.afpc.randolph.af.mil/promotions/index.asp.

NOTE 2: See Part II, Sections C and D for a list of AFJQSs/AFQTPs and AETC supplemental training.

NOTE 3: All core/duty position tasks must be completed prior to upgrade.

Section C - Skill Level Training Requirements

9. Purpose. The various skill levels in the career field are defined in terms of tasks and knowledge requirements for each skill level in the Ground Radar career field. They are stated in broad, general terms and establish the standards of performance. Core tasks, knowledge items, and skill requirements for this specialty are identified in the STS, COL, CDCs, AFJQSs/AFQTPs, etc. Completion of the mandatory 3-level skill awarding course, CDCs, and applicable AFJQSs/AFQTPs define the Air Force core tasks for this specialty.

10. Specialty Qualification Requirements.

10.1. Apprentice (3-Level) Training.

KNOWLEDGE	Knowledge is mandatory of: Electronic Principles and Digital Techniques, including Transistors and Solid-State Component Theory that applies to Ground Radar Systems; Maintenance Data Processing Systems; Wiring Diagrams, Circuit Diagrams, Schematic Diagrams, and Technical Orders; and Air Force Maintenance and Supply Procedures.
EDUCATION	Completion of high school is mandatory. Additional courses in Mathematics, Physics, or Information Technologies is desirable.
TRAINING	Completion of the Apprentice Ground Radar Specialist course, E3ABR1C831 00AA (PDS Code V77). (See Part II, Section B for Course Objective List).
EXPERIENCE	None required.
OTHER	For award and retention of AFSC 1C831, must maintain an Air Force Network License according to AFMAN 33-282, Computer Security (COMPUSEC). Normal color vision as defined in AFI 48-123, Medical Examination and Standards. The ability to obtain a government license according to AFI 24-301, Vehicle Operations. Eligibility for a Secret security clearance according to AFI 31-501, *Personnel Security Program Management*, is mandatory for award and retention of this skill level.
IMPLEMENTATION	Attendance at the Apprentice Ground Radar Specialist course is mandatory for award of the 3-skill level unless waived by the AFCFM.

10.2. Journeyman (5-Level) Training.

KNOWLEDGE	All 1C831 knowledge qualifications apply to the 1C851 requirements. Completion of the 1C851 Career Development Course.
TRAINING	No mandatory AETC training courses are required for upgrade.
EXPERIENCE	Qualification in and possession of AFSC 1C831. Experience Performing Testing, Calibrating, or Repairing Ground Radar Systems, Associated Communications and Identification Equipment. Completion of all STS core tasks. Completion of applicable AFJQSs/AFQTPs. Completion of all local tasks assigned for the duty position.
OTHER	For award and retention of AFSC 1C851, must maintain an Air Force Network License according to AFMAN 33-282, Computer Security (COMPUSEC). Eligibility for a Secret security clearance according to AFI 31-501, *Personnel Security Program Management*, is mandatory for award and retention of this skill level.
IMPLEMENTATION	Entry into formal journeyman upgrade training is accomplished once individuals are assigned to their first duty station. Qualification training is initiated anytime individuals are assigned duties for which they are not qualified. Use CDCs, CBTs, and AFJQSs/AFQTPs concurrently to obtain the necessary qualification for refresher and cross-utilization training.

10.3. Craftsman (7-Level) Training.

KNOWLEDGE	All 1C851 knowledge qualifications apply to the 1C871 requirements.
TRAINING	No mandatory AETC training courses are required for upgrade.
EXPERIENCE	Qualification in and possession of AFSC 1C851. Experience Performing or Supervising Functions such as Siting, Installing, Repairing, Overhauling, or Modifying Ground Radar Systems and Associated Communications and Identification Equipment. Completion of all STS core tasks. Completion of applicable AFJQSs/AFQTPs. Completion of all local tasks assigned for the duty position.
OTHER	For award and retention of AFSC 1C871, must maintain an Air Force Network License according to AFMAN 33-282, Computer Security (COMPUSEC). Eligibility for a Secret security clearance according to AFI 31-501, *Personnel Security Program Management*, is mandatory for award and retention of this skill level.
IMPLEMENTATION	Entry into OJT is initiated when individuals obtain the necessary rank and skill level. Qualification training is initiated anytime an individual is assigned duties for which they are not qualified. Use CDCs and AFJQSs/AFQTPs concurrently to obtain the necessary qualification for refresher and cross-utilization training.

10.4. Superintendent (9-Level) Training.

KNOWLEDGE	Techniques and Procedures of Systems Analysis and Design. Interpretation of Wiring and Logic Diagrams. Project Management. Software Methodology. System Operation and Maintenance. System and Equipment Capability, Capacity, and Logic. Performance Measurement, Security, and Resource Management
TRAINING	No mandatory AETC training courses are required for upgrade.
EXPERIENCE	Qualification in and possession of AFSC 1C87X. Managing or Directing Functions such as Installing, Maintaining, Repairing, or Modifying the Various Systems and Related Equipment of the Feeder Specialties.
OTHER	For award and retention of AFSC 1C890, must maintain an Air Force Network License according to AFMAN 33-282, Computer Security (COMPUSEC). Completion of and eligibility for Single Scope Background Investigation (SSBI) according to AFI 31-501, *Personnel Security Program Management* is mandatory for award and retention of this skill level.
IMPLEMENTATION	Entry into OJT is initiated when individuals are selected for the rank of SMSgt. Qualification training is initiated anytime individuals are assigned duties for which they are not qualified.

10.5. Training Sources.

10.5.1. AFSC specific training - 338th TRS, Keesler AFB, MS at https://etca.randolph.af.mil/.

10.5.2. CDCs 1C851 are available for upgrade purposes through the unit training manager or online at Air University. For individual qualification and cross-utilization training, CDCs are ordered through the unit training office.

10.5.3. AFJQSs/AFQTPs are Air Force publications and are mandatory for use by personnel in upgrade or qualification training. They are developed by the 81 TRSS/TSQ (Q-Flight), Keesler AFB, MS and may be downloaded from https://cs3.eis.af.mil/sites/20946/AFKN_Docs/Forms/AllItems.aspx. Procedures for requesting development of AFJQSs/AFQTPs are contained in AFI 33-154, *Air Force On-the-Job Training Products for Ground Radar Enlisted Specialty Training*. AFJQSs/AFQTPs are listed in Part II of this CFETP.

Section D - Resource Constraints

11. Purpose. This section identifies known resource constraints that preclude optimal/desired training from being developed or conducted, including information such as part numbers, national stock numbers, number of units required, cost, manpower, etc. Included are narrative explanations of each resource constraint and an impact statement describing what effect each constraint has on training. Finally, this section includes actions required, OPR and target completion date. Resource constraints will be, at a minimum, reviewed and updated annually.

12. Apprentice (3-Level) Training.

12.1. Constraints: Shortfall 1 TPS-75.

12.1.1. Impact. Hands on training capability limited to students assigned to units with the AN/TPS-75.

12.1.2. Resources Required. AN/TPS-75

12.1.3. Action Required. Continue to try to reacquire TPS-75 from Item Manager.

12.1.4. OPR/Target Completion Date. 338 TRS/TM/1 Dec 2014

13. Journeyman (5-Level) Training.

13.1. Constraints: N/A

13.1.1. Impact. N/A

13.1.2. Resources Required. N/A

13.1.3. Action Required. N/A

13.1.4. OPR/Target Completion Date. N/A

14. Craftsman (7-Level) Training.

14.1. Constraints: None.

14.1.1. Impact. N/A

14.1.2. Resources Required. N/A

14.1.3. Action Required. N/A

14.1.4. OPR/Target Completion Date. N/A

15. Superintendent (9-Level) Training.

15.1. Constraints: None.

15.1.1. Impact. N/A

15.1.2. Resources Required. N/A

15.1.3. Action Required. N/A

15.1.4. OPR/Target Completion Date. N/A

Section E - Transition Training Guide

There are currently no transition training requirements. This area is reserved.

PART II

Section A - Specialty Training Standard

1. Implementation. This STS will be used for technical training provided by AETC for the 3-level class beginning on a date not yet determined. The creation of 5-level CDC using the proficiency codes listed in column 4B is scheduled to be released on a date not yet determined.

2. Purpose. As prescribed in AFI 36-2201 this STS:

2.1. Lists in column 1 (Task, Knowledge, and Technical Reference) the most common tasks, knowledge, and technical references (TR) necessary for airman to perform duties in the 3-, 5-, and 7-skill level. Column 2 (Core Tasks) identifies by skill level, specialty-wide training requirements. NOTE: Core tasks are minimum task training requirements for upgrade.

2.2. Provides certification for OJT. Column 3 is used to record completion of tasks and knowledge training requirements. Use automated training management systems to document technician qualifications, if available. For initial certification or transcribing documentation complete the columns in accordance with AFI 36-2201.

2.3. Shows formal training and correspondence course requirements. Column 4 shows the proficiency to be demonstrated on the job by the graduate as a result of training on the task/knowledge and the career knowledge provided by the correspondence course. See the Air University Catalog maintained at https://cs3.eis.af.mil/sites/AE-ED-02-37/AFKN_Docs/Forms/AllItems.aspx?RootFolder=%2Fsites%2FAE%2DED%2D02%2D37%2FAFKN%5FDocs%2Fe%2DCDC%5FCDC%20Catalog for current CDC listings.

2.4. Qualitative Requirements. Attachment 1 contains the tasks, knowledge and proficiency levels referenced in paragraph 2. Columns are marked with a proficiency code to indicate subjects taught. An X in the proficiency code column indicates a lack of student man years and instructor resources. Trainees without prerequisites specified in Education and Training Course Announcement (ETCA) cannot be expected to meet proficiency levels indicated.

2.5. Becomes a job qualification standard (JQS) for on-the-job training when placed in AF Form 623, *Individual Training Record* folder and used according to AFI 36-2201.

2.6. Is a guide for development of promotion tests used in the Weighted Airman Promotion System (WAPS). Specialty Knowledge Tests (SKT) are developed at the Airmen Advancement Division by senior NCOs with extensive practical experience in their career fields. The tests sample knowledge of STS subject matter areas judged by test development team members as most appropriate for promotion to higher grades. Questions are based upon study references listed in the Enlisted Promotion References and Requirements Catalog (EPRRC). Individual responsibilities are listed in chapter 1 of AFI 36-2605, *Air Force Military Personnel Testing System*. WAPS is not applicable to the Air National Guard or Air Reserve Forces.

3. Recommendations. Comments and recommendations are invited concerning the quality of AETC training. A Training Feedback Hotline has been installed for the supervisors' convenience. For a quick response to concerns, call our Training Feedback Hotline at DSN 597-4566, fax us at DSN 597-3790, or e-mail us at 81trg-tget@us.af.mil. Reference this STS and identify the specific area of concern (paragraph, training standard element, etc.).

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

BURTON M. FIELD, Lieutenant General, USAF
DCS, Operations, Plans & Requirements

Attachments:
1. IT Fundamentals Course Training Standard (CTS)
2. Specialty Training Standard (STS) 1C8X1

PREFACE

NOTE 1: Dashed items in this CTS are not part of the original CTS created at the March 2009 IT Fundamentals conference however, they are the specific objectives taught in the IT Fundamentals course designed to meet the CTS requirements.

NOTE 2: Unless otherwise stated, students may be allowed two assists from the instructor and still successfully achieve the proper level of proficiency. An instructor assist is anytime an instructor must intercede to provide guidance to a student which leads to a satisfactory completion of the objective or to prevent the student from continuing in a manner that will lead to an unsatisfactory conclusion, safety violation, or damage to equipment.

NOTE 3: All 3-level tasks will be trained if a wartime surge is ordered.

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 help only 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)

Explanations

* 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)

** 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. This mark is used alone instead of a scale value to show that no proficiency training is provided in the course or CDC.

X This mark is used alone in course columns to show that training is required but not given due to limitations in resources.

NOTE: All tasks and knowledge items shown with a proficiency code are trained during wartime.

PROFICIENCY CODE

1. ELECTRONICS SUPPORT SUBJECTS	
1.1. Safety	B
1.2. First Aid	A
1.3. Personal and Family Countermeasures (CM)	A
1.4. Fire Extinguishers	A
2. BASIC COMPUTER FUNDAMENTALS	
2.1. Communications/Network Protocols	
2.1.1. Connection Oriented Communication	A
2.1.2. Connectionless Oriented Communication	A
2.1.3. International Standards Organization (ISO) Open Systems Interconnect (OSI) Model	A
2.1.4. TCP/IP	A
2.1.5. Department of Defense (DoD) Standards Protocol	A
2.1.6. IPV4/IPV6	A
2.1.7. Ports (IP)	A
2.2. Network Theory/Components	
2.2.1. Components	
2.2.1.1. Component Principles	B
2.2.1.2. Central Processing Unit (CPU)	A
2.2.1.3. Computer Memory	A
2.2.1.4. Input/output (I/O) Devices	A
2.2.1.5. Storage Devices	A
2.2.1.6. Peripherals (Printers, FAX, Scanners, etc)	A
2.2.2. Network Types	
2.2.2.1. Wired (LAN, WAN, MAN)	A
2.2.2.2. Wireless	A
2.2.2.3. Virtual Private Network (VPN)	A
2.2.2.4. Video Teleconference	A
2.2.2.5. Topologies (Star, Ring, Bus, Hybrid, etc)	A
2.3. Network Devices	
2.3.1. Modems	A
2.3.2. Converters	A
2.3.3. Gateways	A
2.3.4. Switches	A
2.3.5. Bridges/Routers	A
2.3.6. Encryption/COMSEC Devices (Data and Voice)	A
2.3.7. Communications Mediums	A
2.3.8. LAN Architecture	A
2.4. Software	
2.4.1. Operating Systems (UNIX, Windows, LINUX, etc)	A
2.4.2. Applications (Word, Excel, PowerPoint, SharePoint, etc)	A

2.4.3. Infectious and Malicious Software	A
3. NETWORK FAULT ISOLATION TECHNIQUES	
3.1. Network Error Detection	1a
3.2. Network Error Correction	1a
3.3. Network Flow Control	1a
3.4. Transmission Impairments	1a
3.5. Network Management Concepts and Responsibilities	B
4. RISK MANAGEMENT (RM) TR: AFIs 90-802, 91-202, 91-203, and 91-302	
4.1. RM	A
5. PUBLICATIONS AND DIRECTIVES TR: AFINDs 5, 8; AFI 33-Series	
5.1. Department of Defense (DoD)	X
5.2. Air Force	X
5.3. Commercial/Vendor Publications	X
5.4. Technical Orders (TO)	A
5.5. Standard Installation Practices Technical Order (SIPTO)	X
5.6. Enterprise Information Architecture (EIA)/ Telecommunications Industry Association (TIA)	A
5.7. Military Standard (MIL STD)	X
6. AIR AND SPACE EXPEDITIONARY FORCE (AEF)	
6.1. Equipment (e.g. LOGDET)	X
6.2. Personnel (e.g. MANFOR)	X
7. SAFETY PRECAUTIONS AND GUIDLINES	
7.1. AFI 91-203, *AF Consolidated Occupational Safety Instruction* and its importance	A
7.2. Electrostatic Discharge	A
7.3. Communications Systems Grounding, Bonding, and Shielding	A
8. FUNDAMENTALS OF ELECTRICITY	
8.1. Concepts of:	
8.1.1. Current	A
8.1.2. Voltage	A
8.1.3. Resistance	A
8.1.4. Conductance	A
8.1.5. Capacitance	A
8.1.6. Power	A
8.2. Identify Basic Terms and Terminology used in the Field of Electronics	A
8.3. Ohm's Law and its Application	B
8.4. Direct Current	
8.4.1. Theory	B
8.4.2. Applications	A
8.5. Alternating Current	
8.5.1. Theory	B
8.5.2. Applications	A
8.6. Identify and Interpret Basic Electrical Symbols and Drawings	B

9. COMPONENT AND DEVICE THEORY	
9.1. Resistors	A
9.2 Capacitors	A
9.3. Inductors	A
9.4. Transformers	A
9.5. Relays and Solenoids	A
9.6. Semiconductors	
9.6.1. Diodes	A
9.6.2. Transistors	A
9.6.3. Special Purpose Components	
9.6.3.1. Zener Diode	A
9.6.3.2. Light Emitting Diode (LED)	A
9.6.3.3. Liquid Crystal Display (LED)	A
9.6.3.4. Integrated Circuits	A
10. ELECTRONIC CIRCUITS	
10.1. Kirchoff's Law	A
10.2. Series Circuits	B
10.3. Parallel Circuits	B
10.4. Power Supply Circuits	
10.4.1. Theory (Rectifiers, Filters, and Voltage Regulators)	B
10.4.2. Troubleshoot	2b
10.5. Wave Generating Circuits	
10.5.1. Oscillators	B
10.5.2. Multivibrators	B
10.5.3. Waveshaping Circuits	B
10.6. Transistor Amplifier Circuits	B
10.7. Digital Circuits	
10.7.1. Theory	B
10.7.2. Applications	B
10.7.3. Boolean Algebra	B
10.7.4. Metric Notation	
10.7.4.1. Calculate Powers of Ten	B
10.7.4.2. Electrical Prefixes	B
11. BASIC COMMUNICATIONS THEORY	
11.1. Communication Mediums	
11.1.1. Transmissions Lines	B
11.1.2. Fiber optics	B
11.1.3. Data Bus	B
11.1.4. Antennas	B
11.1.5. Waveguides	A
11.2. Digital Communications	
11.2.1. Synchronous	A
11.2.2. Isochronous	A
11.2.3. Asynchronous	A
11.2.4. Signal Rate	A
11.2.5. Bit Count Integrity	A

11.2.6. Signal Formats	A
11.2.7. Multiplexing	
11.2.7.1. Multiplexers	A
11.2.7.2. Wave Division Multiplexing	A
11.2.7.3. Time Division Multiplexing	A
11.3. Transmitters	
11.3.1. Amplitude Modulation	B
11.3.2. Frequency Modulation	B
11.4. Receivers	
11.4.1. Amplitude Modulation	B
11.4.2. Frequency Modulation	B
11.5. Modulation Techniques	
11.5.1. Amplitude Modulation	B
11.5.2. Frequency Modulation	B
11.5.3. Phase Modulation	B
11.5.4. DAMA*	B
11.5.5. Frequency Hopping	A
11.5.6. Time - Division (CDMA and GSM)	A
11.6. AM Receiver Signals	
11.6.1. Measure Radio Frequency (RF)	1a
11.6.2. Measure Intermediate Frequency (IF)	1a
11.6.3. Measure Audio Frequency (AF)	1a
11.6.4. Measure Local Oscillator (LO) Output	1a
11.7. Electromagnetic Effects (EMP/EMI)	B
12. DIGITAL NUMBERING SYSTEMS	
12.1. Binary	A
12.2. Hexadecimal	A
12.3. Binary Coded Decimal	A
13. TYPES OF WIRING AND CABLE	
13.1. Assemble Solderless Connectors	
13.1.1. Crimped Connection	2b
13.1.2. Coaxial Connector	2b
13.1.3. Multipin Connector	2b
14. USE TEST EQUIPMENT	
14.1. Multimeters (Analog/Digital)	2b
14.2. Oscilloscope	2b
14.3. Signal/Function Generator	2b
14.4. Line Tester	2b
15. BASIC COMMUNICATIONS SYSTEMS	
15.1. Communications Systems Components (Block Diagrams)	
15.1.1. Wired Communications Systems	A
15.1.2. Wireless Communications Systems	A
15.1.3. Wireless-Wireline Systems Interface	B
15.2. Systems Troubleshooting Techniques	B

PREFACE

NOTE 1: Users are responsible for annotating technical references to identify current references pending STS revision. Locate current Air Force publications at:

DOD Issuances and OSD Administrative Instructions at http://www.dtic.mil/whs/directives/.
Air Force Publications at http://www.e-publishing.af.mil/.
AFSSIs at https://private.afnic.af.mil/ia/PolicyDocuments.cfm.
DISA Circulars and Instructions at https://www.disa.mil/about/policy-publication-information.
Technical Orders (TO) at https://www.my.af.mil/etims/ETIMS/index.jsp.
Online Reference Ware and CBTs:
https://usafprod.skillport.com/skillportfe/custom/login/usaf/seamlesslogin.action.

NOTE 2: Knowledge and/or performance tasks are defined in the AFJQS. AFJQS items set the standard for qualification and certification and are mandatory for use in conjunction with this STS when applicable to the duty position.

NOTE 3: All objectives are trained during wartime.

NOTE 4: Track and manage training for TSgts and below and MSgt/SMSgt retrainees using Training Business Area (TBA).

NOTE 5: When an AFJQS is loaded into TBA, AFJQS task numbering will vary from the STS. The numbering scheme is defined by your work center specific master training plan.

NOTE 6: Third person certification is not required for Ground Radar Specialist personnel.

NOTE 7: In the event of data network or computer system failure, courses are authorized to use alternative methods of instruction to fulfill this STS element.

NOTE 8: Unless otherwise stated in the objective, the student may be allowed two assists from the instructor and still successfully achieve the proper level of proficiency. An instructor assist is defined as anytime an instructor must intercede to provide guidance to a student which leads to a satisfactory completion of the objective or to prevent a student from continuing in a manner which will lead to an unsatisfactory conclusion, safety violation, or damage to the equipment. Successful students have performed the task to the satisfaction of the course; however, they may not be capable of meeting the field requirements for speed or accuracy.

NOTE 9: All equipment related objectives are performed by following procedures from technical orders, technical manuals, or student instructional material developed by the training facility.

NOTE 10: Senior NCO's in the 1C8XX AFSCs are not required to have an Individual Training Plan (ITP) with the following exceptions: personnel in upgrade training status or performing equipment maintenance as part of primary duties. Unit Commanders can require MSgt's with UTC tasks to have an ITP.

THIS BLOCK IS FOR IDENTIFICATION PURPOSES ONLY Personal Data – Privacy Act of 1974		
PRINTED NAME OF TRAINEE *(Last, First, Middle Initial)*	INITIALS *(Written)*	LAST 4 OF SSAN

PRINTED NAME OF TRAINER AND CERTIFYING OFFICIAL AND WRITTEN INITIALS	
N/I	N/I
N/I	N/I
N/I	N/I
N/I	N/I
N/I	N/I
N/I	N/I

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 help only 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)

Explanations

* 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)

** 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. This mark is used alone instead of a scale value to show that no proficiency training is provided in the course or CDC.

(-) This mark is used alone in Proficiency Codes Course columns to show that training is required but not given due to limitations in resources.

NOTE: All tasks and knowledge items shown with a proficiency code are trained during wartime.

(-) When this code is used in the Core & Wartime Tasks Column it indicates that the qualification is a local determination.

(5) When this code is used in the Core & Wartime Tasks Column it indicates the CFM has mandated this task as a core 5-level requirement. The training to satisfy this requirement is either provided through OJT, CBTs, CDCs, or a combination.

(7) When this code is used in the Core & Wartime Tasks Column it indicates the CFM has mandated this task as a core 7-level requirement. The training to satisfy this requirement is either provided through OJT, CBTs, CDCs, or a combination.

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
1. GROUND RADAR CAREER FIELD TR: AFECD; AFH 33-337; AFIs 10-401, 33-115 V (1), 2 & 3, 33-150, 36-2101;1C8X1 CFETP; T.O. 00-33A-1001-WA-1										
1.1. AFS Structure	5						A	A	-	-
1.2. Progression within Air Force Specialty Code 1C8X1	5						A	A	-	-
1.3. Read CFETP 1C8X1	5						-	-	-	-
1.4. Explain Duties of 1C8X1 AFSC	5						A	A		
2. SAFETY/RISK MANAGEMENT (RM) TR: AFIs 90-802, 91-202, 91-203, 91-302										
2.1. RM	5						-	-	-	-
2.2. Air Force Consolidated Occupational Safety Instructions for AFSC	5						A	A	-	-
2.3. Hazards of the AFSC	5						A	A	-	-
2.4. Practice Safety Precautions:										
2.4.1. Maintenance Actions	5						2b	-	-	-
2.4.2. Energized Equipment	5						2b	-	-	-
2.4.3. High Voltage Equipment	-						-	-	-	-
2.4.4. Radio Frequency (RF) Hazard Environments TR: AFI 91-203 chap 30.15T; TO 31Z-10-4; Command and Local Directives	-						-	-	-	-
2.4.5. Compressed Gas Cylinders TR: AFI 91-203 chap 40; TO 42B5-1-2; Command and Local Directives	-						-	-	-	-
2.4.6. Hazardous Materials TR: AFI 91-203 chap 22, 31, 33, 36, 40, & 43; TO 00-25-213	-						-	-	-	-
2.4.7. In Confined Spaces TR: 91-203 Chap 23	-						-	-	-	-
2.4.8. When Climbing TR: 91-203	-						-	-	-	-
2.5. Safety and Personal Protective Equipment TR: AFI 91-203 chap 14; TO 00-25-245, Command and Local Directives										
2.5.1. Use	5						-	-	-	-
2.5.2. Maintain	5						-	-	-	-
2.5.3. Inspect	5						-	-	-	-
2.6. Perform General Housekeeping	5						-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
2.7. Fire Protection Procedures TR: AFI 91-203 chap 6; Command and Local Directives										
2.7.1. Describe Classes of Extinguishers	-						-	-	-	-
2.7.2. Describe Fire Protection Procedures for Electronic Equipment	-						-	-	-	-
2.7.3. Describe Fire Protection Procedures for Critical Facilities	-						-	-	-	-
2.8. Work Center Safety Program TR: AFI 91-202, chaps 1, 2.2. thru 2.3, and 4; AFI 91-203 chap 1; Command and Local Directives										
2.8.1. Manage Work Center Program	-						-	-	-	-
2.8.2. Conduct Job Safety Analysis	-						-	-	-	-
2.8.3. Document AF Form 55	-						-	-	-	-
2.8.4. Conduct Inspections	-						-	-	-	-
3. UTILIZE PUBLICATIONS AND DIRECTIVES TR: AFI 33-Series; AF Records Distribution System; http://www.e-publishing.af.mil/										
3.1. Department of Defense (DOD) / Joint	-						-	A	-	-
3.2. Air Force	5						-	A	-	-
3.3. Allied Communications Publications (ACP)	-						-	A	-	-
3.4. Commercial/Vendor Publications	-						-	A	-	-
3.5. FAA Publications	-						-	A	-	-
3.6. Technical Orders (TO)										
3.6.1. Describe Technical Order System TR: AFI 63-101; TO 00-5-1-WA-1; TO 00-5-18-WA-1	5						A	A	-	-
3.6.2. Locate TO Numbers and Titles in each TO Index TR: TO 00-5-1-WA-1; TO 00-5-18-WA-1; https://www.my.af.mil/etims/ETIMS/index.jsp; Applicable TO index	-						-	-	-	-
3.6.3. Identify Time Compliance Technical Orders (TCTO) Procedures TR: AFCSM 21-568 (V2) https://www.my.af.mil/etims/ETIMS/index.jsp; AFI 33-150; TO 005-15-WA-1; and applicable TCTOs	-						-	A	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
3.6.4. Implement Time Compliance Technical Orders (TCTO) Procedures and Document Completion TR: AFCSM 21-568 (V2) https://www.my.af.mil/etims/ETIMS/index.jsp; AFI 33-150; TO 005-15-WA-1; and Applicable TCTOs	-						-	-	-	-
3.6.5. Prepare Local Work Cards, Checklists and Job Guides TR: TO 005-1-WA-1; and Command and Local Directives	-						-	-	-	-
3.6.6. Report Publication Errors and Form Deficiencies TR: AFI 33-360	5						-	-	-	-
3.6.7. Report Technical Order Improvements TR: TO 00-5-1-WA-1	5						-	-	-	-
3.7. Standard Installation Practices Technical Order (SIPTO)	-						-	-	-	-
3.8. Enterprise Information Architecture (EIA)/ Telecommunications Industry Association (TIA)	-						-	A	-	-
3.9. Military Standard (MIL STD)	-						-	A	-	-
3.10. Use Publications when Performing Work	5						2b	-	-	-
4. C4I SECURITY TR: ACP 122; AFIs 33-129, 33-138, 33-332; AFKAG-1&2; AFMAN 33-326; DOD 5200.1-R; TO 31S5-4-7205-8-1 PKI Fundamentals										
4.1. Operations Security (OPSEC) TR: AFI 10-701; AFPD 10-7										
4.1.1. Definition	5						-	A	-	-
4.1.2. Radar Systems Vulnerabilities	5						-	-	-	-
4.2. Information Security (INFOSEC) TR: AFI 31-401; AFPDs 31-4 and 33-2										
4.2.1. Definition	-						-	A	-	-
4.2.2. Classification Process	-						-	-	-	-
4.2.3. Declassification Process	-						-	-	-	-
4.2.4. Information Safeguards										
4.2.4.1. Privacy Act (PA)	-						-	A	-	-
4.2.4.2. For Official Use Only (FOUO)	-						-	A	-	-
4.2.4.3. Sensitive Unclassified	-						-	A	-	-
4.2.4.4. Classified	-						-	A	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
4.3. Communications Security (COMSEC) TR: AFIs 31-401, 33-201V (2); AFPDs 31-4 and 33-2										
4.3.1. Definition	5						-	A	-	-
4.3.2. Radar Systems Vulnerabilities	-						-	-	-	-
4.4. Emission Security (EMSEC) TR: AFPD 33-2 and AFSSI 7700										
4.4.1. Definition	5						-	A	-	-
4.4.2. Radar Systems Vulnerabilities	5						-	A	-	-
4.5. Computer Security (COMPUSEC) TR: AFIs 33-200; AFPD 33-2; AFMAN 33-282										
4.5.1. Definition	5						-	A	-	-
4.5.2. Radar Systems Vulnerabilities	5						-	B	-	-
4.6. Physical Security TR: AFI 31-101; AFPD 31-1										
4.6.1. Definition	5						-	A	-	-
4.6.2. Secure Area Access Management	-						-	B	-	-
4.6.3. Facility Security Requirements	5						-	B	-	-
4.6.4. Identify Violations Procedures	5						-	-	-	-
4.6.5. Report Violations Procedures	5						-	-	-	-
4.6.6. Classified Material Control										
4.6.6.1. Storage	5						-	B	-	-
4.6.6.2. Transport	5						-	B	-	-
4.6.6.3. Handling	5						-	B	-	-
4.6.6.4. Destruction	-						-	-	-	-
4.6.6.5. Classified Waste	-						-	-	-	-
4.6.6.6. Marking	-						-	-	-	-
4.7. Information Assurance TR: AFI 33-200 and 33-210										
4.7.1. Definition	5						-	A	-	-
4.7.2. Certification and Accreditation Process	-						-	-	-	-
4.8. Information Conditions (INFOCON) TR: AFI 10-710	5						-	B	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
5. MANAGEMENT OF PROCESSES TR: AFIs 36-2201, 63-501, 63-131, 64-102; AFPD 36-5, 64-1; Federal Acquisition Regulation (FAR) Part 39; OMB Circular A-130; TOs 00-33A-1001-WA-1 and 00-33D-3003-WA-1										
5.1. Management Policies										
5.1.1. Equipment Readiness	-						-	-	-	-
5.1.2. Staffing and Utilization	7						-	-	-	-
5.1.3. Training										
5.1.3.1. Document Training	5						-	-	-	-
5.1.3.2. Evaluate Newly Assigned Personnel and Identify Individual Training Requirements TR: AFI 36-2201; Applicable CFETP; Unit Training Manual	5						-	-	-	-
5.1.3.3. Conduct On-the-Job Training (OJT) TR: AFI 36-2201; and Local Directives	5						-	-	-	-
5.1.3.4. Evaluate Quality of OJT and Provide Trainee Feedback TR: AFI 36-2201	5						-	-	-	-
5.1.3.5. Understand Master Training Plan Requirements	7						-	-	-	-
5.1.4. Quality Assurance (QA)										
5.1.4.1. Perform Self-Inspection	5						-	-	-	-
5.1.4.2. Evaluate Equipment	7						-	-	-	-
5.1.4.3. Document Results	5						-	-	-	-
5.1.4.4. Describe the QA Function	-						-	-	-	-
5.1.5. Automated Information Systems (AIS)										
5.1.5.1. Integrated Maintenance Data System (IMDS)	5						-	-	-	-
5.1.5.2. Training Business Area (TBA)	5						-	-	-	-
5.1.6. Logistics Support										
5.1.6.1. Submit Price Challenges TR: AFI 23-101	-						-	-	-	-
5.1.6.2. Report Item and Packaging Discrepancies TR: AFJMAN 23-215	7						-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
5.1.6.3. Report Uniform Source, Maintenance and Recoverability Code and Air Force Expendability, Recoverability, Reparability Category Code Discrepancies TR: AFJI 21-106; TOs 00-20-3, chap 1; 00-25-195-WA-1	-						-	-	-	-
5.1.6.4. Submit Deficiency Reports TR: TO 00-35D-54-WA-1, chap 3	-						-	-	-	-
5.1.6.5. Research and Identify Part and Stock Numbers TR: Applicable Equipment TOs, Federal Logistics (FEDLOG) Program	5						-	-	-	-
5.1.6.6. Maintain Supply Listings and Reports (D04, D18, M30, D23, or Equivalent IMDS TR: AFI 23-101	7						-	-	-	-
5.1.6.7. Maintain Bench Stock TR: AFMAN 23-122, chap 5; and Local Directives	-						-	-	-	-
5.1.6.8. Maintain Supply Point Stock TR: AFMAN 23-122, chap 5, and TO 00-20-3-WA-1, chap 3										
5.1.6.9. Request And Validate Adjusted Stock Levels (Special Levels) TR: AFMAN 23-122, chap 2	-						-	-	-	-
5.1.6.10. Describe Procedures for Recovering and Turning in Precious Metals TR: AFI 23-101, Sec 6C; and Local Directives	-						-	-	-	-
5.1.6.11. Manage Repair Cycle TR: AFI 23-101, Sec 4C; AFMAN 23-122, Sec 4C; TO 00-20-3-WA-1, chaps 2 and 3, and Table 2-1	7						-	-	-	-
5.1.6.12. Initiate Not Repairable This Station (NRTS) Actions TR: TO 00-20-3-WA-1, chaps 3 and 6, and Table 1-1	5						-	-	-	-
5.1.6.13. Initiate Contract Repair (AF Form 9) TR: AFI 64-102; AFI 23-101, Command and Local Directives	-						-	-	-	-
5.1.6.14. Maintain Custodian Authorization/Custody Receipt Listing (CA/CRL) Equipment Accounts TR: AFMAN 23-122 , Sec 5D; and Local Directives	-						-	-	-	-
5.1.7. Work Center Management TR: AFI 21-103										
5.1.7.1. Report Status	-						-	-	-	-
5.1.7.2. Document Actions	-						-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
5.1.7.3. Develop Work Schedules	7						-	-	-	-
5.1.8. Modification Management TR: AFI 63-131										
5.1.8.1. Control Configuration	-						-	-	-	-
5.1.8.2. Initiate Modification Proposals	-						-	-	-	-
5.1.9. Communications Systems Installation Records (CSIRs)	-						-	-	-	-
5.1.9.1. CIPS CVC Tool	-						-	-	-	-
5.1.9.2. Utilize GCCS Dashboard	7						-	-	-	-
5.1.10. Types of Contracts										
5.1.10.1. Time and Material	-						-	-	-	-
5.1.10.2. Firm Fixed Price	-						-	-	-	-
5.1.10.3. Sole Source	-						-	-	-	-
5.1.10.4. Performance Based	-						-	-	-	-
5.1.10.5. Indefinite Delivery Indefinite Quantity	-						-	-	-	-
5.1.10.6. Blanket Purchase Agreement (e.g. AFWAY, PCOE)	-						-	-	-	-
5.1.11. Responsibilities										
5.1.11.1. Quality Assurance Program Coordinator	-						-	-	-	-
5.1.11.2. Functional Director/Commander	-						-	-	-	-
5.1.11.3. Quality Assurance Personnel	-						-	-	-	-
5.1.11.4. Unit Contract Monitor	-						-	-	-	-
5.2. Functional Management TR: AFECD; AFIs 33-101, 36-2201, 36-2845, 38-101; AFMAN 37-104; AFQTP 1CXXX-225E; 1C8X1 CFETP										
5.2.1. Responsibilities										
5.2.1.1. AF Career Field Manager	5						-	A	-	-
5.2.1.2. MAJCOM Functional Manager	5						-	A	-	-
5.2.1.3. Base Functional Manager	5						-	A	-	-
5.2.2. Resource Management										
5.2.2.1. Manpower Products	7						-	-	-	-
5.2.2.2. Manpower Studies	-						-	-	-	-
5.2.2.3. Describe Authorization /Organizational Change Request Process	7						-	-	-	-
5.2.2.4. Manpower Standards	-						-	-	-	-
5.2.2.5. Allocating Personnel	7						-	-	-	-

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		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
5.2.3. Workshops										
5.2.3.1. Describe the Purpose of Utilization and Training Workshop (U&TW)	5						-	A	-	-
5.2.3.2. Describe the Purpose of Training Advisory Groups	5						-	A	-	-
5.2.3.3. Describe the Purpose of Occupational Survey	5							A	-	-
5.2.3.4. Describe the Purpose of Specialty Training Requirements Team (STRT)	5						-	A		
6. EXPEDITIONARY CONCEPTS TR: AFDD 4-0; AFIs 10-401, 10-403, 21-109; AFMAN 23-110										
6.1. Describe Joint Task Force (JTF) Organizational Structure:										
6.1.1. Unified/Combatant Commands (COCOM)	-						-	-	-	-
6.1.2. Air Force Component Commander (AFCC)	-						-	-	-	-
6.1.3. Joint Force Air Component Commander (JFACC)	-						-	-	-	-
6.1.4. Commander Air Force Forces (COMAFFOR)	-						-	-	-	-
6.2. Describe the Concepts of Aerospace Expeditionary Force (AEF) employment:										
6.2.1. AEF-Tempo Banding	5						-	A	-	-
6.2.2. Enabler Forces	5						-	A	-	-
6.2.3. Deployment Planning and Execution	-						-	-	-	-
6.3. Deployment Process										
6.3.1. Defined	-						-	-	-	-
6.3.2. Develop:										
6.3.2.1. Designed Operational Capability (DOC)	7						-	-	-	-
6.3.2.2. AEF UTCs:										
6.3.2.2.1. Unit Type Code (UTC)	5						-	A	-	-
6.3.2.2.2. Equipment (e.g. LOGDET)	7						-	A	-	-
6.3.2.2.3. Personnel (e.g. MANFOR)	7						-	A	-	-
6.4. Posturing	7						-	-	-	-
6.5. Sourcing	7						-	-	-	-
6.6. Readiness Status Reporting:										
6.6.1. Status of Resources and Training (SORTS)	7						-	-	-	-
6.6.2. AEF UTC Reporting Tool (ART)	7						-	-	-	-

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		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
6.7. Understand Force Module Communications Support Concept:										
6.7.1. Open the Air Base	7						-	-	-	-
6.7.2. Command and Control	7						-	-	-	-
6.7.3. Establish the Air Base	7						-	-	-	-
6.7.4. Generate the Mission	7						-	-	-	-
6.7.5. Operate the Air Base	7						-	-	-	-
6.7.6. Robust the Air Base	7						-	-	-	-
6.8. Deployment Procedures:										
6.8.1. Develop Load Plan	-						-	-	-	-
6.8.2. Explain Pallet Build-Up Procedures	-						-	-	-	-
6.8.3. Explain Hazardous Cargo Preparation	-						-	-	-	-
6.8.4. Prepare Documentation	-						-	-	-	-
6.8.5. Determine Site Selection Requirements	-						-	-	-	-
6.8.6. Determine Site Preparation Requirements	-						-	-	-	-
6.8.7. Determine Site Configuration Requirements	-						-	-	-	-
6.8.8. Determine Requirements For Constructing Deployment Site Utility Grids	-						-	-	-	-
7. DEPLOYABLE MISSIONS TR: AFPAM 10-100, MAJCOM and Local Directives										
7.1. Contingency Response Groups	-						-	A	-	-
7.2. Deployable Air Traffic Control Systems (DATCALS)	-						-	A	-	-
7.3. Engineering & Installation	-						-	A	-	-
7.4. Deployable Comm Support	-						-	-	-	-
7.5. C4ISR Platforms:										
7.5.1. Air Operations Centers	-						-	A	-	-
7.5.2. Ground Theater Air Control Systems (Air Control Squadrons)	-						-	A	-	-
7.5.3. Air Support Operations Centers	-						-	A	-	-
7.5.4. Remote Piloted Aircraft (RPA)	-						-	A	-	-
8. ORGANIZATIONAL STRUCTURE TR: AFPD 13-3; AFI 38-101 and 33-115 V (1)										
8.1. Operations Support Squadron	5						-	A	-	-

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		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
8.2. Air Traffic Control Squadrons	5						-	A	-	-
8.3. Combat Air Operations Squadron (CAOS)	5						-	A	-	-
8.4. Air Control Squadron (ACS)	5						-	A	-	-
8.5. Electronic Warfare Centers	5						-	A	-	-
8.6. Combat Communications Squadrons	-						-	-	-	-
8.7. Radar Evaluation Squadron (RADES)	-						-	-	-	-
8.8. Air Force Flight Standards Agency (AFFSA)	-						-	-	-	-
8.9. Air Force Weather Agency (AFWA)	-						-	-	-	-
8.10. Weather Systems Support Cadre (WSSC)	-						-	-	-	-
8.11. Contingency Readiness Group (CRG)	-						-	-	-	-
8.12. Engineering and Installation Squadron (E&I)	-						-	-	-	-
8.13. Range Squadron (RANS)	-						-	-	-	-
9. BASIC COMPUTER FUNDAMENTALS TR: https://www.my.af.mil (under AF e-Learning site)										
9.1. Communications and Network Protocols:										
9.1.1. Connection Oriented Communication	-						-	B	-	-
9.1.2. Connectionless Oriented Communication	-						-	B	-	-
9.1.3. International Standards Organization (ISO) Open Systems Interconnect (OSI) Model	-						-	B	-	-
9.1.4. TCP/IP	-						-	B	-	-
9.1.5. Department of Defense (DoD) Standard Protocols	-						-	A	-	-
9.1.6. IPv4/IPV6	-						-	B	-	-
9.1.7. Ports (IP)	-						-	A	-	-
9.2. Network Theory/Components:										
9.2.1. Components:										
9.2.1.1. Principles	-						-	B	-	-
9.2.1.2. Central Processing Unit (CPU)	-						-	A	-	-
9.2.1.3. Computer Memory	-						-	A	-	-
9.2.1.4. Input/Output (I/O) Devices	-						-	A	-	-
9.2.1.5. Storage Devices	-						-	A	-	-
9.2.1.6. Peripherals (Printers, Fax, Scanners, etc.)	-						-	A	-	-

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		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
9.2.2. Network Types:										
9.2.2.1. Wired (e.g. LAN, WAN, MAN)	-						-	A	-	-
9.2.2.2. Wireless	-						-	A	-	-
9.2.2.3. Topologies (e.g. Star, Ring, Bus, Hybrid)	-						-	A	-	-
9.3. Network Devices:										
9.3.1. Modems	-						-	A	-	-
9.3.2. Switches	-						-	A	-	-
9.3.3. Multiplexers	-						-	A	-	-
9.3.4. Bridges/Routers	-						-	A	-	-
9.3.5. Encryption Devices	-						-	A	-	-
9.4. Communications Mediums	-						-	A	-	-
9.5. LAN Architecture	-						-	A	-	-
9.6. Software										
9.6.1. Operating Systems (e.g. UNIX, Windows, LINUX)	-						-	A	-	-
9.6.2. Applications (e.g. Word, Excel, PowerPoint)	-						-	A	-	-
9.6.3. Infectious and Malicious Software	-						-	B	-	-
10. COUNTER-CHEMICAL, BIOLOGICAL, RADIOLOGICAL and NUCLEAR TR: AFPAM 10-100 and 10-2501										
10.1. Describe Threats:										
10.1.1. Chemical	-						-	-	-	-
10.1.2. Biological	-						-	-	-	-
10.1.3. Nuclear	-						-	-	-	-
10.1.4. Radiological	-						-	-	-	-
10.2. Warning Systems, Signals and Reporting Procedures:										
10.2.1. Joint and Coalition	-						-	-	-	-
10.2.2. Air Force	-						-	-	-	-
10.2.3. Respond to Alarm Conditions:										
10.2.3.1. Identify and Prioritize Mission/Service Restoration	-						-	-	-	-
10.2.3.2. Post-Attack Personnel Accountability	-						-	-	-	-
10.2.3.3. Post-Attack Reconnaissance	-						-	-	-	-
10.2.3.4. Identify and Mark CBRNE to include Unexploded Ordinance	-						-	-	-	-
10.2.3.5. Report Suspicious Activities	-						-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
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		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
10.3. Mission Oriented Protective Postures:										
10.3.1. Describe	-						-	-	-	-
10.3.2. Implement	-						-	-	-	-
10.4. Individual Protective Equipment / Personal Protective Equipment (IPE/PPE):										
10.4.1 Requirements and Limitations	-						-	-	-	-
10.4.2. Joint Service Lightweight Integrated Suit Technology (JLIST)										
10.4.2.1. Inspect and Maintain	-						-	-	-	-
10.4.2.2. Wear	-						-	-	-	-
10.4.2.3. Perform Critical Mission Tasks	-						-	-	-	-
10.4.2.4. Execute Work-Rest Cycles and Hydration Standards	-						-	-	-	-
10.4.2.5. Perform Self-Aid and Buddy Care	-						-	-	-	-
10.4.2.6. Perform Contaminated Personnel Movement	-						-	-	-	-
10.4.2.7. Perform Decontamination Procedures	-						-	-	-	-
11. AIR FORCE ONLINE TRAINING (Note 1) TR: https://usafprod.skillport.com/skillportfe/custom/login/usaf/seamlesslogin.action										
11.1. 1C8XX Common Fundamentals Training Curriculum:										
11.1.1. 5-Level Training	5						-	-	-	-
11.1.2. 7-Level Training	7						-	-	-	-
11.2. Ground Radar Systems 1C8X1 Curriculum:										
11.2.1. Fundamentals	-						-	-	-	-
12. TEST EQUIPMENT TR: TO 33K-1-100, Applicable Test Equipment Technical Orders										
12.1. Identify Principles, Capabilities, Limitations and Perform Equipment Maintenance using the Following Test Equipment:										
12.1.1. Oscilloscope	5						2b	A	-	-
12.1.2. Multimeter	5						2b	A	-	-
12.1.3. Optical Time Domain Reflectometer	-						-	-	-	-
12.1.4. Time Domain Reflectometer	-						-	-	-	-

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		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
12.1.5. Bit Error Rate Test Set	-						-	-	-	-
12.1.6. Frequency Counter	-						2b	A	-	-
12.1.7. Network/Protocol Analyzer	-						2b	A	-	-
12.1.8. Spectrum Analyzer	5						2b	A	-	-
12.1.9. Power Meter										
12.1.9.1. Hewlett-Packard HP432A Power Meter	-						2b	A	-	-
12.1.9.2. Boonton 4500B RF Peak Power Analyzer	-						2b	-	-	-
12.1.9.3. Giga-tronics 8652A Universal Power Meter	-						2b	-	-	-
12.1.10. RF Signal Generator	5						2b	A	-	-
12.1.11. Insulation Test Set	-						-	-	-	-
12.1.12. Megaohmeter	-						-	-	-	-
12.1.13. Built-In Test Equipment	-						-	-	-	-
12.1.14. Breakout Box	-						-	-	-	-
12.1.15. Communications System Analyzer	-						-	-	-	-
12.1.16. Sweep Generator	-						-	-	-	-
12.1.17. Function Generator	-						-	-	-	-
12.1.18. RMS Voltmeter	-						-	-	-	-
12.1.19. Distortion Analyzer	-						-	-	-	-
12.1.20. Wattmeter	-						-	A	-	-
12.1.21. Dummy Load	5						-	A	-	-
12.1.22. Audio Oscillator	-						-	-	-	-
12.1.23. Infrared Tester	-						-	-	-	-
12.1.24. Earth Ground Tester	-						-	A	-	-
12.1.25. Frequency Generator	-						-	-	-	-
12.1.26. Noise Figure Meter	-						-	A	-	-
12.1.27. Video Signal Processor Test Set, AN/TPM-32	-						2b	A	-	-
12.1.28. IFF/SIF Radar Test Set, TPM-25	-						-	-	-	-
12.1.29. Radar Test Set, AN/UPM-145	-						2b	A	-	-
12.1.30. IFF/SIF Radar Test Set, AN/UPM-155	-						2b	A	-	-
12.1.31. Monopulse Beacon Test Set w/Laptop	-						2b	A	-	-
12.1.32. NARDA Survey Meter 8712	-						-	-	-	-
12.1.33. NARDA Isotropic Electronic Probe 8712D	-						-	-	-	-
12.1.34. Minolta Color Analyzer - CA-100	-						-	-	-	-

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		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
12.1.35. Minolta CS-100A Chroma-Meter	-						-	-	-	-
12.1.36. Sony Monitor Remote Controller RM-10	-						-	-	-	-
12.1.37. Barco Keypad Controller	-						2b	-	-	-
13. SPECIALIZED TOOLS TR: Applicable Technical Publications										
13.1. Amphenol Tool	-						-	-	-	-
13.2. Tone Generator	-						-	-	-	-
13.3. Inductive Amplifier	-						-	-	-	-
13.4. LAN Tester	-						-	-	-	-
13.5. Light Source	-						-	-	-	-
13.6. Transit	-						-	-	-	-
13.7. Fusion Splicer	-						-	-	-	-
13.8. Fiber Optic Source and Meter	-						-	-	-	-
14. STANDARD PRACTICES TR: TOs 00-25-234-WA-1, 31-10-7, 31-10-11, 31-10-13, 31-10-24-WA-1, 31-1-141-1-WA-1 V (1), and 31W3-10-20; AFI 32-1065										
14.1. State Facts Related to the Following Practices:										
14.1.1. Installation	-						-	-	-	-
14.1.2. Configuration	-						-	-	-	-
14.1.3. Interconnection	-						-	-	-	-
14.1.4. Inspection	7						-	-	-	-
14.2. Marking and Identifying Underground Utilities	-						-	-	-	-
14.3. EMSEC Suppression Techniques	-						-	-	-	-
14.4. Cable Labeling and Installation Documentation	-						-	-	-	-
14.5. Wire Color-Coding Standards	-						-	B	-	-
14.6. Fiber Optics Installation Concepts	-						-	A	-	-
14.7. Explain Landline Concepts:										
14.7.1. Copper Cables	-						-	-	-	-
14.7.2. Coaxial Cables	-						-	-	-	-
14.7.3. Fiber Optic Cable	-						-	-	-	-
14.7.4. Interfacing Considerations (e.g. TRI-TAC, Pin-Outs, Signal Format)	-						-	-	-	-
14.8. Concepts of:										

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		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
14.8.1. Grounding	5						A	B	-	-
14.8.2. Bonding	5						A	B	-	-
14.8.3. Shielding	5						A	B	-	-
14.8.4. Lightning Protection	5						A	B	-	-
14.9. Electrostatic Discharge TR: AFQTP1CXXX-202A Electrostatic Discharge Handbook; TO 00-25-234-WA-1										
14.9.1. Principles	5						B	B	-	-
14.9.2. Concepts	5						-	B	-	-
14.9.3. Handling, Packaging and Storing	5						-	-	-	-
14.10. Equipment Grounding and Lightning Protection										
14.10.1. Install	-						-	-	-	-
14.10.2. Remove	-						-	-	-	-
14.10.3. Perform Inspection and Maintenance	5						-	-	-	-
14.11 Equipment Familiarization										
14.11.1 Locate Elements										
14.11.1.1 Alphanumerics	-						-	-	-	-
14.11.1.2 Visual Inspection	-						-	-	-	-
14.11.2. Basic Troubleshooting Techniques	5						-	-	-	-
15. COMMUNICATIONS PRINCIPLES TR: TO 31-1-141 Series										
15.1. Amplitude Modulation (AM)	-						-	A	-	-
15.2. Frequency Modulation (FM)	-						-	A	-	-
15.3. Phase Modulation (PM)	-						-	A	-	-
15.4. Pulse Code Modulation (PCM)	-						-	A	-	-
15.5. Bandwidth	-						-	A	-	-
15.6. Light Wave Communications	-						-	A	-	-
15.7. Asynchronous and Synchronous Communication Modes	-						-	A	-	-
15.8. Error Detection and Correction	-						-	A	-	-
16. Electrical Power Systems TR: Commercial Manuals										
16.1. Switched Electrical Power Systems	-						A	B	-	-
16.2. Uninterruptible Power Supplies (UPS)	-						A	B	-	-
16.3. Batteries	-						-	A	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
16.4. Rectifiers	-						-	-	-	-
16.5. Inverters	-						-	-	-	-
16.6. Generators	-						-	A	-	-
17. BASIC ELECTRONIC PRINCIPLES TR: TOs 31-1-141 thru 31-1-141-14										
17.1. Operating Characteristics:										
17.1.1. Silicon Controlled Rectifier (SCR)	-						A	-	-	-
17.1.2. High Power Tubes	-						A	-	-	-
17.1.3. Amplifiers	-						A	-	-	-
17.1.4. Limiter Circuits	-						A	-	-	-
17.1.5. Clamper Circuits	-						A	-	-	-
17.1.6. Pulse Modulated Transmitters	-						A	-	-	-
17.1.7. Pulse Modulated Receivers	-						A	-	-	-
18. UNIX OPERATING SYSTEM TR: Applicable Commercial Manuals										
18.1. Characteristics	-						A	A	-	-
18.2. Commands:										
18.2.1. Operating	-						-	-	-	-
18.2.2. File System Structure	-						-	-	-	-
18.2.3. VI Editor	-						-	-	-	-
18.2.4. Remote System	-						-	-	-	-
18.2.5. System Monitoring	-						-	-	-	-
18.3. UNIX System Administration										
18.3.1. System Administration	-						-	-	-	-
18.3.2. File System Administration	-						-	-	-	-
18.3.3. System User Account Administration	-						-	-	-	-
19. RADAR FUNDAMENTALS TR: TO 31-1-141-9-WA-1										
19.1. Typical Radar Systems										
19.1.1. Roles in Operational Theater	-						A	-	-	-
19.1.2. Leading Particulars	-						A	A	-	-
19.1.3. Principles	-						B	B		
19.1.4. Frequency Characteristics	-						A	B		
19.2. Principles of Major Radar Assemblies and Subassemblies										

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
19.2.1. Transmitters	-						A	A	-	-
19.2.2. Antennas	-						A	A	-	-
19.2.3. Receivers	-						A	A	-	-
19.2.4. Processors	-						A	A	-	-
19.2.5. Indicators	-						A	A	-	-
19.2.6. Waveguide and RF Devices	-						A	-	-	-
19.2.7. Remoting Circuits	-						A	-	-	-
19.2.8. Performance Monitors/Built-In-Test Equipment (BITE)	-						A	-	-	-
19.3. State Facts Relating to Advanced Radar Principles:										
19.3.1. Antenna Types	-						-	A	-	-
19.3.2. Radiation Patterns and Properties	-						-	A	-	-
19.3.3. Propagation Anomalies	-						-	A	-	-
20. RADAR FLIGHT SAFETY TR: AFMAN 11-225										
20.1. Purpose of Flight Checks	7						A	-	-	-
20.2. Types of Flight Inspections	7						A	-	-	-
20.3. Inspection Intervals	7						A	-	-	-
20.4. Facility Certification:										
20.4.1. Initial	-						A	-	-	-
20.4.2. Recurring	-						A	-	-	-
21. AN/MPN-14K, LANDING CONTROL CENTRAL TR: TO 31P5-2MPN14-22										
21.1. Capabilities and Limitations	-						A	-	-	-
21.2. Remove and Replace Components	-						-	-	-	-
22. AN/TPN-19, LANDING CONTROL CENTRAL TR: TO 31P5-2TPN19-2, 31P5-2TPN24-2 and 31P5-2TPN25-2										
22.1. Capabilities and Limitations	-						A	A	-	-
22.2. Theory of Operation	-						-	A	-	-
23. AN/GPN-20, AIRPORT SURVEILLANCE RADAR TR: TO 31P5-2GPN20-2, and 31P5-2GPN21-2										
23.1. Capabilities and Limitations	-						A	A	-	-
23.2. Theory of Operation	-						A	B	-	-
23.3. Verify Operation										
23.3.1. Transmitter RF Power Out Performance Test	-						2b	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
23.3.2. Transmitter Frequency Performance Test	-						2b	-	-	-
23.3.3. Automatic Frequency Control (AFC) Performance Test	-						2b	-	-	-
23.3.4. Voltage Standing Wave Ratio (VSWR) Performance Check	-						2b	-	-	-
23.3.5. Turn-On and Turn-Off	-						-	-	-	-
23.4. Perform Alignments										
23.4.1. Locked COHO Alignment	-						2b	-	-	-
23.4.2. Video Gain and Balance Alignment							2b	-	-	-
23.5. Isolate Malfunctions	-						-	-	-	-
24. AN/TPX-42, SECONDARY SURVEILLANCE RADAR (SSR) TR: TOs 31P4-2TPX-42-2, 31P4-2TPX-42-22, 31P4-2T-12, 31P4-2T-22, 31P4-2T-32, 31P4-2T-42, 31P4-2T-52, 31P4-2T-62, 31P4-2T-72, 31P4-2T-82, 31P4-2T-92 and 31P4- 2T-112										
24.1. Capabilities and Limitations	-						A	A	-	-
24.2. Theory of Operation	-						A	B	-	-
24.3. Verify Operation										
24.3.1. System Diagnostic Test	-						2b	-	-	-
24.3.2. Transmitter Power Output Check	-						2b	-	-	-
24.4. Perform Alignments										
24.4.1. Adjustment of Low Power Out and Low Power Monitor	-						2b	-	-	-
24.4.2. BST Delay Adjustment	-						2b	-	-	-
24.4.3. Range Error Circuit Adjustment	-						2b	-	-	-
24.4.4. Video Line Amplifier Line Compensation Adjustment	-						2b	-	-	-
24.4.5. Receiver Video Pulse Amplitude, Width and Level Adjustment	-						2b	-	-	-
24.4.6. Input Video Threshold and Bracket Video Amplitude Adjustment	-						2b	-	-	-
24.5. Isolate Malfunctions	-						2b	-	-	-
25. PROGRAMMABLE INDICATOR DATA PROCESSOR (PIDP) II TR: TO 31P4-2TPX42-52										
25.1. Capabilities and Limitations	-						A	-	-	-
25.2. Theory of Operation	-						A	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
25.3. OD-153 Indicator TR: TOs 31P4-2T-122 and 31P4-2TPX42-52										
25.3.1. Capabilities and Limitations	-						A	-	-	-
25.3.2. Theory of Operation	-						A	B	-	-
25.3.3. Verify Operation										
25.3.3.1. Starting Procedure	-						2b	-	-	-
25.3.3.2. Indicator Control Operating Procedure	-						2b	-	-	-
25.3.3.3. Position Entry Module (PEM) Operating Procedure	-						2b	-	-	-
25.3.4. Perform Alignments										
25.3.4.1. Align Video Circuits	-						2b	-	-	-
25.3.4.2. Align Deflection Circuits	-						2b	-	-	-
25.3.5. Isolate Malfunctions	-						2b	-	-	-
26. AN/GPN-30, DIGITAL AIRPORT SURVEILLANCE RADAR (DASR) SYSTEM TR: 6310.30A Maintenance Handbook										
26.1. Capabilities and Limitations	-						A	A	-	-
26.2. Theory of Operation	-						A	B	-	-
26.3. System Power-On and Power-Off	-						b	-	-	-
26.4. Verify Operation										
26.4.1. Point of Control Configuration (Take Control)	-						2b	-	-	-
26.4.2. Termination of Test (Release Control)	-						2b	-	-	-
26.4.3. Measuring PSR's Transmitter Performance Parameters Using the Operator's Maintenance Terminal (OMT)	-						2b	-	-	-
26.4.4. PSR Receiver Performance Parameters Using the OMT	-						2b	-	-	-
26.4.5. PSR Receiver End to End Test for Noise/Level, and Phase Stability Using the Monitor and Control OMT	-						2b	-	-	-
26.4.6. PSR Transmitter Frequency	-						2b	-	-	-
26.4.7. PSR Transmitter Output Power Measurement	-						2b	-	-	-
26.4.8. PSR Transmitter Power Supplies	-						2b	-	-	-
26.4.9. PSR Transmitter Radio Frequency (RF) Drivers and Amplifiers	-						2b	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
26.4.10. Verification of PSR Receivers Sensitivity Minimum Discernable Signal (MDS) Certification Parameters, and Calibration of Operator's OMT for MDS	-						2b	-	-	-
26.4.11. Measuring PSR's Receiver Exciter and Surveillance Data Processor (REX/SDP) Units A and B's A11A1 and A11A2 Power Supply Voltages	-						2b	-	-	-
26.4.12. Measuring PSR's Transmitter Pulse Width and Bandwidth Using External Test Equipment	-						2b	-	-	-
26.4.13. PSR Short Pulse Sensitivity Time Control (STC) Verification	-						2b	-	-	-
26.4.14. PSR Probability of Detection (PD) for Permanent Echoes (PE)	-						2b	-	-	-
26.4.15. Verify Key System Parameters	-						-	-	-	-
26.4.16. Voltage Standing Wave Ratio (VSWR)	-						-	-	-	-
26.4.17. Feeder Cable Phasing	-						-	-	-	-
26.4.18. Feeder Cable Insertion Loss	-						-	-	-	-
26.5. Perform Alignments										
26.5.1. Selected Encoder Alignment	-						2b	-	-	-
26.5.2. Standby Encoder Alignment	-						2b	-	-	-
27. MONOPULSE SECONDARY SURVEILLANCE RADAR (MSSR) TR: 6310.30A Maintenance Handbook										
27.1. Capabilities and Limitations	-						A	A	-	-
27.2. Theory of Operation	-						A	B	-	-
27.3. Verify Operation										
27.3.1. MSSR Transmitter and Receiver Performance Parameters Using the OMT	-						2b	-	-	-
27.3.2. MSSR Digital System Sensitivity (DSS)	-						2b	-	-	-
27.3.3. MSSR Transmitter Frequency	-						2b	-	-	-
27.3.4. MSSR Interrogator Forward and Reverse Power and Pulse Width and Spacing Measurements	-						2b	-	-	-
27.3.5. MSSR Interrogator Power Supply Voltage Verification	-						2b	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
27.3.6. MSSR Receiver Minimum Receiver Sensitivity Verification	-						2b	-	-	-
27.3.7. MSSR Receiver Synthetic Target Calibration and Verification	-						2b	-	-	-
27.3.8. MSSR Pulse Repetition Frequency (PRF) Verification	-						2b	-	-	-
27.3.9. MSSR Probability of Detection (PD) for SSR Position Adjustable Range Reference Orientation Transponder (PARROT)	-						2b	-	-	-
27.3.10. Antenna Pattern Measurement (APM) Procedure	-						2b	-	-	-
27.3.11. MSSR Remote Site Monitor (MRSM) Reply Verification	-						2b	-	-	-
27.4. Perform Alignments										
27.4.1. Calibration of MSSR CMS TX Monitor Screen and OMT Radar Certification Parameters Screen for MSSR TX Forward Output Power	-						2b	-	-	-
27.4.2. Calibration of MSSR CMS TX Monitor Screen and OMT Radar Certification Parameters Screen for MSSR TX Reverse Output Power	-						2b	-	-	-
27.5. Isolate Malfunctions	-						-	-	-	-
28. AN/FSQ-204, STANDARD TERMINAL AUTOMATION REPLACEMENT SYSTEM (STARS) TR: Interactive Equipment Technical Manuals (IETMs)										
28.1. Capabilities and Limitations	-						A	A	-	-
28.2. Theory of Operation	-						A	B	-	-
28.3. Equipment Familiarization										
28.3.1. Locate Equipment	-						-	-	-	-
28.3.2. Locate Indicators	-						-	-	-	-
28.3.3. Locate Interconnections	-						-	-	-	-
28.3.4. Operate Terminal Control Workstation / Tower Display Workstation (TCW/TDW)	-						-	-	-	-
28.3.5. STARS Maintenance Administration	-						-	-	-	-
28.4. Verify Operation										
28.4.1. Startup/Shutdown	-						-	-	-	-
28.4.2. Terminal Control Workstation (TCW) Operation										
28.4.2.1. Verify Test Target Display	-						2b	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
28.4.2.2. Consolidate Airspace	-						2b	-	-	-
28.4.2.3. Track Aircraft	-						2b	-	-	-
28.4.2.4. Backup Data Processing System Verification	-						2b	-	-	-
28.4.2.5. Open Monitor Control Position (MCP) at TCW	-						2b	-	-	-
28.4.3. Monitor Control Workstation (MCW) Operation										
28.4.3.1. Assume Control Authorization/System Log In	-						2b	-	-	-
28.4.3.2. Perform Network Universal Input/Output (NUNIO) Offline and Online Procedures	-						2b	-	-	-
28.4.3.3. Perform Resource Verification Test	-						2b	-	-	-
28.4.3.4. Conduct Performance Verification Procedure	-						2b	-	-	-
28.4.3.5. Perform Warm Start/Cold Start Procedures	-						2b	-	-	-
28.4.3.6. Open Position Adjustable Range Reference Orientation Transponder/ Permanent Echo (PARROT/PE) Report	-						2b	-	-	-
28.4.4. Site Support Subsystem (SSS) Operation										
28.4.4.1. Log In Using Common Desktop Environment	-						2b	-	-	-
28.4.4.2. Ping Processor	-						2b	-	-	-
28.4.4.3. Display Current Directory Path	-						2b	-	-	-
28.4.4.4. Processor Remote Log In	-						2b	-	-	-
28.4.4.5. Access Tools Menu	-						2b	-	-	-
28.5. Perform Alignments										
28.5.1. BARCO Keypad Geometry Alignment	-						2b	-	-	-
28.5.2. BARCO Keypad Color Alignment	-						2b	-	-	-
28.6. Isolate Malfunctions										
28.6.1. Run On-Line/Off-Line Diagnostics	-						2b	-	-	-
28.6.2. Run NUNIO Off-Line Diagnostics	-						2b	-	-	-
28.6.3. Run Interface Configuration Test	-						2b	-	-	-
28.7. Remove and Replace Components										
28.7.1. Local Tower Local Area Network (LAN) Switch	-						2b	-	-	-
28.7.2. General Purpose Workstation (GPW)	-						2b	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
29. AN/GPN-22, PRECISION APPROACH RADAR (PAR) TR: TO 31P5-2GPN-22-2, 31P5-2GPN22-2C										
29.1. Capabilities and Limitations	-						A	-	-	-
29.2. Theory of Operation	-						A	-	-	-
29.3. Verify Operation										
29.3.1. Perform Turn-On and Turn-Off Procedures	-						-	-	-	-
29.3.2. Antenna Beam Position Control Unit (ABPCU) Proper System Operation Test	-						2b	-	-	-
29.3.3. Antenna Beam Position Control (ABPC) Phase Shifter Failure Poll Performance Test Standards	-						2b	-	-	-
29.3.4. Verify Advanced Modular Transmitter (AMT) Assessment (SPA) Performance Test Standards	-						-	-	-	-
29.3.5. Minimum Discernable Signal (MDS)	-						-	-	-	-
29.3.6. Transmitter Power Output and Pulse Characteristics	-						2b	-	-	-
29.3.7. Split Pulse and Chirp Frequencies Check	-						2b	-	-	-
29.3.8. Radar Set Minimum Discernable Signal (MDS) Performance Test	-						2b	-	-	-
29.4. Perform Alignments										
29.4.1. Grid Drive and Filaments Alignment	-						2b	-	-	-
29.4.2. Grid Modulator Pulse Initial Alignment	-						2b	-	-	-
29.4.3. RF Gate Pulse Initial Alignment	-						2b	-	-	-
29.4.4. RF Pulse Final Alignment	-						2b	-	-	-
29.4.5. Grid Modulator Pulse Final Alignment	-						2b	-	-	-
29.4.6. Stabilized Master Oscillator (STAMO) RF Drive to Pulse Power Amplifier (PPA) Alignment	-						2b	-	-	-
29.4.7. PAR Performance False Alarm Rate Adjustment	-						2b	-	-	-
29.4.8. Azimuth Zero Bias Alignment	-						2b	-	-	-
29.4.9. Elevation Zero Bias Alignment	-						2b	-	-	-
29.4.10. Align Remoting and Control Circuits:										
29.4.10.1. Video/Multitrigger Combiner	-						-	-	-	-
29.4.10.2. AM Modulator	-						-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
29.4.10.3. Three (3)-Channel AM Modulator	-						-	-	-	-
29.4.10.4. Dual Transmit Distribution Amplifier	-						-	-	-	-
29.4.10.5. AM Demodulator	-						-	-	-	-
29.4.10.6. Three (3)-Channel AM Demodulator	-						-	-	-	-
29.4.10.7. Video Multitrigger Separator	-						-	-	-	-
29.5. Isolate Malfunctions	-						-	-	-	-
30. AN/TPS-75, AIRCRAFT CONTROL AND WARNING RADAR SYSTEM TR: TOs 31P3-2TPS75-2-1, 31P3-2TPS75-2-2, 31P3-2TPS75-6WC-1, 31P5-2TPS75-9, 31P1-2UYQ27-22, 31P1-2TYQ23-1 and 31P1-2UPA59-1-1										
30.1. Capabilities and Limitations	-						A	A	-	-
30.2. Theory of Operation	-						A	B	-	-
30.3. Verify Operation										
30.3.1. System Turn-on and Turn-off Procedures	-						2b	-	-	-
30.3.2. Verify System Operation w/Preventive Maintenance Inspections (PMIs)										
30.3.2.1. Transmitter Performance Check (Daily)	-						2b	-	-	-
30.3.2.2. Radar/SIF System Test Performance Routine (Daily)	-						2b	-	-	-
30.3.2.3. I-F Receiver Performance Routine (Daily)	-						2b	-	-	-
30.3.2.4. Height System Performance Routine (Daily)	-						2b	-	-	-
30.3.2.5. Weather/ECM Performance Routine (Daily)	-						2b	-	-	-
30.3.2.6. Clutter Mapping Performance Routine (Daily)	-						2b	-	-	-
30.3.3. I-F Receiver Performance Test	-						2b	-	-	-
30.3.4. AN/UYQ-27 Display Console 7-Day Inspection	-						2b	-	-	-
30.4. Perform Alignments										
30.4.1. Multi-Voltage Power Supply Alignment	-						2b	-	-	-
30.4.2. Frequency Generator (Synthesizer) Power Output Adjustment	-						2b	-	-	-
30.4.3. Driver Adjustment	-						2b	-	-	-
30.4.4. Final Power Amplifier Adjustment	-						2b	-	-	-
30.4.5. I-F Receiver Alignment	-						2b	-	-	-
30.5. Isolate Malfunctions	-						2b	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE & WARTIME TASKS	3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/INFORMATION PROVIDED			
		A	B	C	D	E	3 SKILL LEVEL	5 SKILL LEVEL	7 SKILL LEVEL	9 SKILL LEVEL
		START DATE	STOP DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFIER INITIALS	Course	CDC	OJT	OJT
31. AN/UPX-37, DIGITAL INTERROGATOR TR: TO 31P4-2UPX37-1										
31.1. Capabilities and Limitations	-						A	A	-	-
31.2. Theory of Operation	-						A	B	-	-
31.3. Verify Operation	-						-	-	-	-
31.4. Perform Alignments	-						-	-	-	-
31.5. Isolate Malfunctions	-						-	-	-	-
32. WEATHER RADAR SYSTEMS.										
32.1. WSR-88D, Next Generation Radar (NEXRAD) TR: TO 31P1-4-108-1										
32.1.1. Capabilities and Limitations	-						A	-	-	-
32.1.2. Theory of Operation	-						A	-	-	-
32.2. Portable Doppler Radar (PDR) TR: Applicable Technical Manuals and Commercial Publications							-	-	-	-
33. AIR FORCE JOB QUALIFICATION STANDARDS APPLICABLE TO 1C8XX AFSCs TR: AFI 33-150; AFI 33-154, MPTO 00-33A-1001, CFETP 1C8X1										
33.1. AFJQS1C8XX-200TBA Training Business Area (TBA)	5						-	-	-	-
33.2. AFJQS1C8XX-201C Corrosion Prevention and Control	5						-	-	-	-
33.3. AFQTP1C8XX-202A Electrostatic Discharge Handbook	5						-	-	-	-

Section B - Course Objective List

4. Measurement. Each objective is indicated as follows: W indicates task or subject knowledge, which is measured using a written test, PC indicates required task performance which is measured with a performance progress check and PC/W indicates separate measurement of both knowledge and performance elements using a written test and a progress check.

5. Standard. The standard is 70% on written examinations. Standards for performance measurement are indicated in the objective and delineated on the individual progress checklist. Instructor assistance is provided as needed during the progress check and students may be required to repeat all or part 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. The following list of support materials is not all-inclusive; however, it covers the most frequently referenced areas. The most current products can be found at the 81st TRSS/TSQ web page and are available for download from the web site at https://cs3.eis.af.mil/sites/20946/AFKN_Docs/Forms/AllItems.aspx. Procedures for requesting product development are found in AFI 33-154.

7.1. Generic AFJQSs/AFQTPs applicable to **AFSC 1C8X1**:

Publication No.	Pseudo File	Publication Title
AFJQS1C8X1-202XB	N/A	WSR-88D NEXRAD Radar Product Generation
AFJQS1C8X1-202XD	N/A	WSR-88D NEXRAD Open Radar Data Acquisition Group (ORDA)
AFJQS1C8X1-202XE	N/A	WSR-88D Next Generation Radar Transmitter System
AFJQS1C8X1-203A	N/A	AN/GPA-134 Video Map Generator System
AFJQS1C8X1-203B	N/A	AN/GPN-30, Digital Airport Surveillance Radar
AFJQS1C8X1-203C	N/A	AN/FSQ-204, Standard Terminal Automation Replacement System
AFJQS1C8X1-203LA	N/A	AN/GPN-22 System Level Maintenance
AFJQS1C8X1-203LB	N/A	AN/TPX-42 Interrogator Set
AFJQS1C8X1-203NB	N/A	AN/GPN-20 Transmitter System
AFJQS1C8X1-203NC	N/A	AN/GPN-20 Receiver System
AFJQS1C8X1-203ND	N/A	AN/GPN-20 Processor System
AFJQS1C8X1-203NE	N/A	AN/GPN-20 Antenna and Auxiliary Equipment
AFJQS1C8X1-203NF	N/A	Air Traffic Control (ATC) Indicators
AFJQS1C8X1-203S	N/A	Digital Bright Radar Indicator Tower Equipment
AFJQS1C8X1-207A	N/A	AN/MST-T1A MUTES
AFJQS1C8X1-207D	N/A	AN/VPQ-1 Tactical Radar Threat Generator
AFJQS1C8X1-211G	N/A	AN/MPN-14K Landing Control Central
AFJQS1C8X1-211P	N/A	AN/TPS-75 Mobile Radar Set

Publication No.	Pseudo File	Publication Title
AFJQS1C8X1-211PD	N/A	AN/UYQ-27 Situation Display Console
AFJQS1C8X1-211PG	N/A	AN/UPA-59 Decoder Group
AFJQS1C8X1-211PH	N/A	AN/UPX-37 Digital Interrogator
AFJQS1C8X1-211Q	N/A	AN/TPN-19 Landing Control Central

7.2. Generic AFJQSs/AFQTPs applicable to **AFSC 1C8XX**:

Publication No.	Pseudo File	Publication Title
AFJQS1C8XX-200F	N/A	Engineering Installation (EI) Team Chief
AFJQS1C8XX-201P	N/A	Work Center Test Equipment Management
AFJQS1C8XX-201X	N/A	Engineering Installation (EI) Quality Assurance
AFQTP1C8XX-202MA	N/A	Project Management Handbook
AFQTP1C8XX-200S	N/A	Basic/ Advance Soldering
AFQTP1C8XX-213R	N/A	Support Agreements and Administrative Contract Management

Section C - Support Materials

8. The following list of support materials is not all-inclusive; however, it covers the most frequently referenced areas. The most current products can be found at the 81st TRSS/TSQ web page and are available for download from the web site at https://cs3.eis.af.mil/sites/20946/AFKN_Docs/Forms/AllItems.aspx. Procedures for requesting product development are found in AFI 33-154.

Section D - Training Course Index

9. Purpose. This section of the CFETP identifies training courses available for continuation/ supplemental training. For information on all formal courses, refer to the Air Force Education and Training Course Announcements (ETCA) database at https://etca.randolph.af.mil/

10. Air Force In-Residence Courses.

Course Number	Course Title	Location
E3AZR1C851 03DA	Digital Airport Surveillance Radar (DASR) Maintenance	Keesler
E3AZR1C851 03SA	Standard Terminal Automation Replacement System (STARS) Maintenance	Keesler
E5ASG1C851 00AA	Airport Surveillance Radar (ASR)-9 SCIP (FAA 40391)	Oklahoma City
E5ASG1C8X1 00AA	Air Route Surveillance Radar (ARSR)-4 Hardware (FAA 40408)	Oklahoma City
E5ASG1C8X1 00BA	Mode S Sensor Maintenance (FAA 40398)	Oklahoma City
E3AZR1C8XX 00DA	High reliability soldering and connections	Keesler
J8AZR3D157 0F5A	Fiber Optic Cable Installation, Splicing And Maintenance	Sheppard

11. Air University Courses.

For a current listing of Air University courses go to http://www.au.af.mil/au/afiadl/.

12. Exportable Courses.

For a current list of the available CBT courses refer to
https://www.my.af.mil/faf/FAF/fafHome.jsp (Under AF e-Learning)

13. National Weather Service course

E5AZG1C851 01NA	NEXRAD	Kansas City

Section E - MAJCOM Unique Requirements

14. The following MAJCOM provided courses are available to support Ground Radar Systems training. They are open to all active, reserve, and guard military and civilians.

Course Title	MAJCOM	Unit	Location	POC
TPS75CHOT-AN/TPS-75 Long Range Radar - (CHOT)	ACC/A6CS	726 ACS	Luke	Mr. Steve Smith