DEPARTMENT OF THE AIR FORCE
Headquarters US Air Force
Washington, DC 20330-1030

CFETP 2A1X4
Parts I and II
June 1997

AFSC 2A1X4

AIRBORNE SURVEILLANCE RADAR SYSTEMS

CAREER FIELD EDUCATION

AND TRAINING PLAN

CAREER FIELD EDUCATION AND TRAINING PLAN
AIRBORNE SURVEILLANCE RADAR SYSTEMS
AFSC 2A1X4

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Supersedes: CFETP 2A1X4 (455X4), Apr 94 Certified by: HQ USAF/ILMM (CMSgt L. Funk)
OPR: 336th TRS/TTKN (Mr. McCarthy) Number of Printed Pages: 62

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AIRBORNE SURVEILLANCE RADAR SYSTEMS
AFSC 2A1X4
CAREER FIELD EDUCATION AND TRAINING PLAN

PART I

PREFACE

1. A highly trained and motivated enlisted work force is the Air Force's key resource in meeting challenges of the future. This Career Field Education and Training Plan (CFETP) provides management a comprehensive education and training document that identifies life-cycle education/training requirements, training support resources, and minimum core task requirements for the Airborne Surveillance Radar Maintenance Specialty. The CFETP will provide personnel a clear career path to success and instills rigor in all aspects of career field training. **Note**: Civilians occupying associated positions will use Part II to support duty position qualification training.

2. The CFETP consists of two parts; both parts of the plan are used by supervisors to plan, manage, and control training within the career field.
2.1. Part I provides information necessary for overall management of the specialty. **Section A** explains how everyone will use the plan. **Section B** identifies career field progression information, duties and responsibilities, training strategies, and career field path. **Section C** associates each level with specialty qualifications (knowledge, education, training, and other). **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, technical references to support training, Air Education and Training Command (AETC) conducted training, wartime course/core task and correspondence course requirements. **Section B** contains the course objective list/training standards supervisors will use to determine if airmen satisfied training requirements. **Section C** identifies available support materials. An example is Qualification Training Packages (QTPs) which may be developed to support proficiency training. These packages are indexed in AFIND 8, Numerical Index of Specialized Educational Training Publications. **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.

3. Using guidance provided in the CFETP will ensure individuals in the Airborne Surveillance Radar Maintenance Specialty receive effective and efficient training at the appropriate point in their career. This plan will enable us to train today's work force for tomorrow's jobs. At unit level, supervisors and trainers will use Part II to identify, plan, and conduct training commensurate with the overall goals of this plan.

ABBREVIATIONS/TERMS EXPLAINED

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

Air Force Job Qualification Standard (AFJQS). A comprehensive task list which describes a particular job type or duty position. They are used by supervisors to document task qualifications. The tasks on AFJQS are common to all persons serving in the described duty position.

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

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

Core Task. A task Air Force Career Field Managers (AFCFMs) identify as a minimum qualification requirement within an Air Force specialty, regardless of duty position. Core tasks may be specified for a particular skill level or in general across the AFSC. These tasks exemplify the essence of the career field - the foundation. Core tasks identified with an */R are optional for AFRES and ANG.

Course Objective List (COL). A publication, derived from initial and advanced skills course training standards, identifying the tasks and knowledge requirements, and respective standards provided to achieve a 3-, 5-, or 7-skill level in this career field. Supervisors use the COL to assist in conducting graduate evaluations in accordance with AFI 36-2201, *Developing, Managing and Conducting Military Training Programs.*

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

Field Technical Training (Type 4). Special or regular on-site training conducted by a field training detachment (FTD) or by a mobile training team.

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 the knowledge, skills, and attitudes essential for successful job performance.

Initial Skills Training. A formal resident course which results in award of the entry level.

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

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

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

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

Radar System. Includes AWACS/JSTARS radar and the interrogator system.

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

Skills Training. A formal course which results in the award of a skill level.

Specialty Training. A mix of formal training (technical school) and informal training (on-the-job) to qualify and upgrade airmen in the award of a skill level.

Specialty Training Package and COMSEC Qualification Training Package. A composite of lesson plans, test material, instructions, policy, doctrine, and procedures necessary to conduct training. These packages are prepared by AETC, approved by National Security Agency (NSA), and administered by qualified communications security (COMSEC) maintenance personnel.

Specialty Training Standard (STS). An Air Force publication that describes skills and knowledge that airman in a particular Air Force specialty need on the job. It further serves as a contract between the Air Education and Training Command and the user to show the overall training requirements for an Air Force specialty code that the formal schools teach.

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

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

Training Impact Decision System (TIDES). A computer-based decision support technology designed to assist Air Force career field managers in making critical judgments relevant to what training should be provided personnel within career fields, when training should be provided (at what career points), and where training should be conducted (training setting).

Upgrade Training (UGT). Mandatory training which leads to attainment of higher level of proficiency.

Utilization and Training Workshop (U&TW). A forum of MAJCOM Air Force Specialty Code (AFSC) functional managers, Subject Matter Experts (SMEs), and AETC training personnel that determines career ladder training requirements.

SECTION A - GENERAL INFORMATION

1. Purpose. This CFETP provides information necessary for Air Force Career Field Managers (AFCFM), MAJCOM Functional Managers (MFMs), commanders, training managers, supervisors and trainers to plan, develop, manage, and conduct an effective career field training program. This plan outlines the training that individuals in AFSC 2A1X4 should receive to develop and progress throughout their career. This plan identifies initial skills, upgrade, qualification, advanced, and proficiency training. Initial skills training is the AFS specific training an individual receives upon entry into the Air Force or upon retraining into this specialty for award of the 3-skill level. Normally, this training is conducted by AETC at one of the technical training centers. Upgrade training identifies the mandatory courses, task qualification requirements, and correspondence course completion requirements for award of the 3-, 5-, 7-, 9-skill levels. 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/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 are:

1.1. Serves as a management tool to plan, manage, conduct, and evaluate a career field training program. Also, it is used to help supervisors identify training 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/training throughout each phase of an individuals career.

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

1.4. Identifies major resource constraints which impact full implementation of the desired career field training process.

2. Uses. The plan will be used by MFMs and supervisors at all levels to ensure comprehensive and cohesive training programs are available for each individual in the specialty.

2.1. AETC training personnel will develop/revise formal resident, non-resident, field and exportable training based on requirements established by the users and documented in Part II of

the CFETP. They will also work with the AFCFM to develop acquisition strategies for obtaining resources needed to provide the identified training.

2.2. MFMs will ensure their training programs complement the CFETP mandatory initial, upgrade, and proficiency requirements. Identified requirements can be satisfied by OJT, resident training, contract training, or exportable courses. MAJCOM-developed training to support this AFSC must be identified for inclusion into plan.

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

3. Coordination and Approval. The AFCFM is the approval authority. MAJCOM representatives and AETC training personnel will identify and coordinate career field training requirements. The AETC training manager for AFSC 2A1X4 will initiate an annual review of this document by AETC and MFMs to ensure currency and accuracy. Using the list of courses in Part II, they will eliminate duplicate training. Applicable inputs will be routed to 336 TRS/TTKN, 825 Hercules St, Suite 212 Keesler AFB, MS 39534-2037.

SECTION B - CAREER PROGRESSION AND INFORMATION

4. Specialty Description.

4.1. Specialty Summary. Inspects, modifies, and maintains airborne surveillance radar and interrogator systems. Related DoD Occupational Subgroup: 104.

4.2. Duties and Responsibilities.

4.2.1. Advises on problems of fault detection and isolation, maintenance, and modification of surveillance radar systems and interrogator systems. Analyzes equipment operating characteristics to determine sources of malfunctions. Identifies maintenance problem areas, and recommends corrective action. Performs production functions. Coordinates maintenance plans to meet operational commitments. Supervises and assists in aircraft launching and recovery. Reviews maintenance data collection summaries to determine trends and production effectiveness. Debriefs flight personnel.

4.2.2. Inspects and performs surveillance radar systems and interrogator systems maintenance. Inspects and tests radar and interrogator systems to locate defects such as cracked or deteriorated wiring, loose mountings, and defective connections. Modifies equipment according to time compliance technical orders and other directives. Isolates malfunctioning radar equipment using built-in and manual fault isolation testing and diagnostic routines. Checks components for technical order compliance. Verifies equipment performance and modifications.

4.2.3. Maintains ground test stations, support equipment (SE), and maintenance records. Operates and maintains surveillance radar transmitter and radar computer test stations; radar and interrogator systems SE; and posts entries on maintenance forms.

5. Skill/Career Progression. Adequate training and timely progression from the apprentice to the superintendent skill level play an important role in the Air Force's ability to accomplish its mission. It is essential that everyone involved in training do their part to plan, manage, conduct, evaluate, and cultivate an effective training program. The guidance provided in this part of the CFETP will ensure each individual receives viable training at appropriate points in their career.

The following narrative and the AFSC 2A1X4 Enlisted Career Path Chart identify the career skill progression.

5.1. Apprentice (3) Level. Upon completion of initial skills training, a trainee will work with a trainer to enhance their knowledge and skills. They will utilize the Career Development Course, Task Qualification Training, and other exportable courses to progress in the career field. Once task certified, a trainee may perform the task unsupervised.

5.2. Journeyman (5) Level. Once upgraded to the 5-skill level, a journeyman will enter into continuation training to broaden their experience base. In addition to normal flightline or in-shop duties, 5-levels may be assigned job positions such as quality assurance, dispatch, and various staff positions. Individuals will attend the Airman Leadership School (ALS) after having 48 months in the Air Force. SrA that have obtained their 5-level and completed the trainer course will be considered for appointment as unit trainers. Individuals will use their CDCs to prepare for testing under the Weighted Airman Promotion System (WAPS). They should also consider continuing their education toward a Community College of the Air Force (CCAF) degree.

5.3. Craftsman (7) Level. A craftsman can expect to fill various supervisory and management positions such as shift leader, element chief, production supervisor, and task certifier. They will also be assigned to work in staff positions. Seven-levels should take courses or obtain added knowledge on management of resources and personnel, and attend the 7-level resident course. Continued academic education through CCAF and higher degree programs is encouraged. In addition, when promoted to TSgt, individuals will attend the Noncommissioned Officer Academy.

5.4. Superintendent (9) Level. A 9-level can be expected to fill positions such as flight chief, production supervisor, and various staff NCOIC jobs, requiring an appropriate blend of technical and management skills. Additional training in the areas of budget, manpower, resources and personnel management should be pursued through continuing education. Individuals promoted to SMSgt will attend the Senior Noncommissioned Officer Academy. Additional higher education and completion of courses outside of their career AFSC are also recommended.

6. Training Decisions. The CFETP was developed using a building block approach (simple to complex) to encompass the entire spectrum of training requirements for the Airborne Surveillance Radar System career field. The spectrum includes a strategy for when, where, and how to meet these training requirements. The strategy must be apparent and affordable to reduce duplication of training and eliminate a disjointed approach to training. The following decisions were made at the 2A1X4 Career Field Utilization and Training Workshop held at Robins AFB, 23 and 24 January 96.

6.1. Initial Skills Training. A decision was made to revise both the current E-3 AWACS 3-level course and the proposed E-8C JSTARS 3-level trailer course. Major changes included modification of subject knowledge training levels and eliminating task knowledge only elements that are an integral part of On-the-Job-Training (OJT).

6.2. Five Level Upgrade Training Requirements. The 5-level CDC requirements were reaccomplished to update and modify training. The scope and depth of the current 5-level CDC material was determined to be too advanced for the newly assigned 3-level. This in-depth training was determined to be more applicable to 7-level upgrade training. The 5-level CDC is divided into three courses: A, B, and C. Course A covers common electronic principles, maintenance procedures, and radar theory. Course B covers the AWACS radar system and

Course C covers the JSTARS surveillance system. Completion of all three is required for 5-level up-grade. Supplemental and FTD courses were reviewed and required changes were identified.

6.3. Seven Level Upgrade Training Requirements. The 7-level in-residence course requirements were realigned to provide advanced workcenter management training. This was a major change from providing advanced systems knowledge training. A decision was made to create a 7-level CDC to incorporate in-depth subject knowledge training deemed too in-depth for the 5-level CDC.

6.4. Proficiency Training. Any additional knowledge and skill training requirements which were not taught through initial skills or upgrade training were assigned to continuation training. The purpose of the continuation training program is to provide additional advanced training exceeding the minimum upgrade training requirements with emphasis on present and future duty positions. MAJCOMs must develop a continuation training program to ensure individuals in the Airborne Surveillance Radar Systems specialty receive the necessary training at the appropriate point in their career. The training program will identify both mandatory and optional training requirements.

7. Community College of the Air Force. Enrollment in CCAF occurs upon completion of basic military training. CCAF provides the opportunity to obtain an Associates in Applied Sciences degree. The Avionics Systems Technology (4VHS) program applies to AFSC 2A1X4. In addition to its associates degree program, CCAF offers the following:

7.1 Occupational Instructor Certification. Upon completion of instructor qualification training, consisting of the instructor methods course and supervised practice teaching, CCAF instructors who possess an associates degree or higher may be nominated by their school commander/commandant for certification as an occupational instructor.

7.2. Trade Skill Certification. When a CCAF student separates or retires, a trade skill certification is awarded for the primary occupational specialty. The college uses a competency based assessment process for trade skill certification at one of four proficiency levels: Apprentice, Journeyman, Craftsman/Supervisor, or Master Craftsman/Manager. The Department of Transportation (DOT) code for a 2A154 is 8232819119 and the civilian title is a Radio Electrician. The DOT codes for a 2A174 are 828281010, 823131018, and 828161010 and the civilian titles are Supervisor Avionics Shop or Supervisor Electronics System Maintenance. All are transcribed on the CCAF transcript.

7.3. Degree Requirements. All airmen are automatically entered into the CCAF program. Prior to completing an associates degree, the 5-level must be awarded and the following requirements must be met:

	Semester Hours
Technical Education	24
Leadership, Management, and Military Studies	6
Physical Education	4
General Education	15
Program Elective Technical Education; Leadership, Management, and Military Studies; or General Education	15
Total	64

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

Technical Core/Technical Elective subjects/courses. Requests to substitute subjects/courses must be approved in advance by the Technical Branch, refer to the CCAF catalog for Application of Courses to the Technical Education area.

Technical Core

Subjects/Courses	Semester Hours
Avionics Systems Theory/Maintenance	24
CCAF Internship	16

Technical Electives

Subjects/Courses	Maximum Semester Hours
Advanced Electronics	12
AF Enlisted Professional Military Education	12
Algebra-Based Physics	4
Basic Electronics Theory/Applications	12
CAD/CAM or Technical Drawing/Drafting	3
Communication Systems Theory/Maintenance	12
Computer Science	6
Digital Techniques	6
Electronic Engineering Materials and Processes	3
Electronic Systems Theory/Maintenance	12
FCC General Radiotelephone Operator's License	9
High-Reliability Soldering	3
Industrial Safety	3
Metrology	6
Microprocessor Electronic Theory	6
Quality Assurance	3

7.3.2. Leadership, Management, and Military Studies (6 Semester Hours): Professional military education and/or civilian management courses.

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

7.3.4. General Education (15 Semester Hours): Applicable courses must meet the criteria for application of courses to the General Education Requirements (GER) and be in agreement with the definitions of applicable General Education subjects/courses as provided in the CCAF General Catalog.

Subjects/Courses	Semester Hours
Oral Communication (Speech)	3

Written communication (English Composition) 3

Mathematics 3
Intermediate algebra or a college-level mathematics course is required. If an acceptable mathematics course is applied as a Technical or Program Elective, a natural science course meeting GER application criteria may be applied as a GER.

Social Science 3
Anthropology, Archeology, Economics, Geography, Government,
History, Political Science, Psychology or Sociology.

Humanities 3
Fine Arts (History, Criticism, and Appreciation),
Foreign Language, Literature, Philosophy, Religion.

7.3.5. Program Elective (15 Semester Hours): Satisfied with applicable Technical Education; Leadership, Management, and Military Studies; or General Education subjects/courses, including natural science courses meeting GER application criteria. Six semester hours of CCAF degree applicable technical credit otherwise not applicable to this program may be applied. See the CCAF General Catalog for details regarding the Associates of Applied Science for this specialty.

7.4. Additional off-duty education is a personal choice that is encouraged for all. Individuals desiring to become an Air Education and Training Command Instructor should be actively pursuing an associates degree. A degreed faculty is necessary to maintain accreditation through the Southern Association of Colleges and Schools.

8. Career Field Path. This information is presented so that members can see the scope and types of missions supported by the Airborne Surveillance Radar specialty. There is only one Chief Enlisted Manager Code, 2A000, for Avionics Systems AFSC grouping. This AFSC combines with AFSCs 2A1X1, 2A1X2, 2A1X3, and 2A1X7 at the nine level as AFSC 2A190. Information presented below is based on a "snap shot" in time and may have changed.

8.1. Manpower Table.

	CMSgt	SMSgt	MSgt	TSgt	SSgt	SrA	A1C	Total
Base Level	52	52	25	31	67	59	39	325
MAJCOM Staff	8	7	1	0	0	0	0	16
HQ USAF Staff	0	0	0	0	0	0	0	0
FOA/DRU	5	9	0	0	0	0	0	14
Joint	2	1	1	1	3	0	0	8
Other	0	1	0	0	2	0	0	3
Sub-Totals	67	70	27	32	72	59	39	366

8.2. Enlisted Career Path.

EDUCATION AND TRAINING REQUIREMENTS	GRADE REQUIREMENTS			
	RANK	AVERAGE SEW-ON	EARLIEST SEW-ON	HIGH YEAR OF TENURE (HYT)
BASIC MILITARY TRAINING SCHOOL				
APPRENTICE TECHNICAL SCHOOL (3-SKILL LEVEL)	Amn A1C	6 months 16 months		
UPGRADE TO JOURNEYMAN (5-SKILL LEVEL) *- Complete 3 months duty position/apprentice experience **before** beginning journeyman training.* *- Minimum 15 months on-the-job training.* *- Complete appropriate CDC if/when available.* *- Must complete 18 months in training (3 month apprenticeship plus 15 months OJT) for award of 5 level.*	A1C SrA	16 months 3 years	28 months	10 Years
AIRMAN LEADERSHIP SCHOOL (ALS) *- Must be a SrA with 48 months time in service or be a SSgt Selectee.* *- Resident graduation is a prerequisite for SSgt sew-on (Active Duty Only).*	**TRAINER** *- - Qualified and certified to perform the task to be trained.* *- - Have attended the formal trainers' course and appointed in writing by Commander.*			
UPGRADE TO CRAFTSMAN (7-SKILL LEVEL) *- Minimum rank of SSgt.* *- 18 months OJT.* *- Complete appropriate CDC if/when available.* *- Advanced Technical School.*	SSgt	7.5 years	3 years	20 Years
	CERTIFIER *- Possess at least a 5-skill level SSgt; and qualified and certified to perform the task being certified.* *- Attend formal certifier course and appointed in writing by Commander.* *- Be a person other than the trainer.*			
NONCOMMISSIONED OFFICER ACADEMY (NCOA) *- Must be a TSgt or TSgt Selectee.* *- Resident graduation is a prerequisite for MSgt sew-on (Active Duty Only).*	TSgt	12.5 years	5 years	20 Years
	MSgt	16 years	8 years	24 Years
USAF SENIOR NCO ACADEMY (SNCOA) *- Must be a SMSgt, SMSgt Selectee, or .Top 10% of MSgt not selected for SMSgt* *- Resident graduation is a prerequisite for CMSgt sew-on (Active Duty Only).*	SMSgt	19.2 years	11 years	26 Years
UPGRADE TO SUPERINTENDENT (9-SKILL LEVEL) *- Minimum rank of SMSgt.* *- Must be a resident graduate of SNCOA (Active Duty Only).*				
	CMSgt	21.5 years	14 years	30 Years

SECTION C - SKILL LEVEL TRAINING REQUIREMENTS

9. Purpose. Skill level training requirements in this career field are defined in terms of tasks and knowledge requirements. This section outlines the specialty qualification requirements for each skill level in broad, general terms and establishes the mandatory requirements for entry, award and retention of each skill level. The specific task and knowledge training requirements are identified in the STS in Part II, Sections A and B of this CFETP.

10. Specialty Qualification:

10.1. Apprentice Level Training:

10.1.1. Specialty Qualification. To perform duties at the apprentice level, an individual must be able to understand basic system theory of operation and be able to perform certain tasks under close supervision until task certification.

10.1.1.1. Knowledge. Knowledge is mandatory of: electronic and computer fundamentals, solid state devices, numbering systems, and principles of radio frequency transmission and reception applied to AWACS, JSTARS, and interrogator systems; concepts and application of maintenance directives; wiring, logic, and schematic diagrams; digital data processing; pulse doppler radar theory; nuclear hardness integrity maintenance; and Air Force supply procedures. To perform duties at the 3-skill level, an individual must be able to understand basic system theory of operation and be able to perform certain organizational and intermediate maintenance tasks under close supervision until task certified. A 3-level must be able to use technical data, common hand tools, and special test equipment. In addition, apprentices must be able to remove and replace system LRUs, perform operational checks, troubleshoot system faults, correct system malfunctions, perform fault isolation test (FIT) and built in test (BIT), and document maintenance actions in the automated data system.

10.1.1.2. Education. For entry into this specialty, completion of high school with courses in physics and mathematics is desirable.

10.1.1.3. Training. For award of AFSC 2A134, completion of a basic AWACS or JSTARS radar maintenance course is mandatory.

10.1.1.4. Experience. None.

10.1.1.5. Other. The following are mandatory as indicated:

10.1.1.5.1 For entry into this specialty, normal color vision as defined in AFMAN 48-123 (formerly AFR 160-43).

10.1.1.5.2 For award and retention of AFSCs 2A134/54/74/90 or 2A000, eligibility for a Secret security clearance according to AFI 31-501 (formerly AFR 205-32).

10.1.2. Training Sources/Resources. The initial skills courses at Keesler AFB, MS provide the "hands-on" training and knowledge required by the 2A1X4 STS. Fundamental electronics is provided through course E3AQR30020-010, Common Electronic Training Program (CETP). Equipment related tasks and knowledge are taught in course E3ABR2A134 000, Apprentice Airborne Surveillance Radar Specialty for the E-3. Trailer course E3ABR2A134 100 will be developed to provide JSTARS (E-8) specific equipment tasks and knowledge training.

10.1.3. Implementation. Upon graduation from Basic Military Training, airman are assigned to the training wing for completion of courses E3AQR30020 010, and E3ABR2A134 000 or E3ABR2A134 100. Completion of these courses will result in award of the 3-skill level.

10.2. Journeyman Level Training:

10.2.1 Specialty Qualification. In addition to the 3-level qualifications, an individual must posses knowledge and skills necessary to analyze performance and isolate basic malfunctions of radar special test equipment and aircraft components.

10.2.1.1. Knowledge. Knowledge is mandatory of: electronic and computer fundamentals, solid state devices, numbering systems, and principles of radio frequency transmission and reception applied to AWACS, JSTARS, and interrogator systems; concepts and application of maintenance directives; wiring, logic, and schematic diagrams; digital data processing; pulse Doppler radar theory; nuclear hardness integrity maintenance; and Air Force supply procedures. In addition to the 3-level qualifications, an individual must possess the knowledge and skills necessary to maintain the radar equipment. A 5-level must be task qualified on analyzing and correcting system malfunctions, system performance testing, and inspection procedures. They must also know how to handle, label, and dispose of hazardous material and waste according to environmental standards.

10.2.1.2. Education. For entry into this specialty, completion of high school is desirable with courses in physics and mathematics is desirable.

10.2.1.3. Training. Qualification in and possession of AFSC 2A134.

10.2.1.4. Experience. The following experience is mandatory for award of AFSC 2A154. Qualification in and possession of AFSC 2A134. Also, experience installing, repairing, testing, or modifying surveillance radar and interrogator systems using electronic test equipment.

10.2.1.5. Other. The following are mandatory as indicated:

10.2.1.5.1. For entry into this specialty, normal color vision as defined in AFMAN 48-123.

10.2.1.5.2. For award and retention of AFSCs 2A134/54/74/90 or 2A000, eligibility for a Secret security clearance according to AFI 31-501 (formerly AFR 205-32).

10.2.2. Training Sources/Resources. Supervisors will use the 2A154 CDC and STS core tasks. The CDC provides in-depth knowledge designed to support the enlisted specialty training.

10.2.3. Implementation. Upgrade to the 5-level requires completion of the 2A154 CDC, certification on all Air Force core tasks, and promotion to E-4.

10.3. Craftsman Level Training:

10.3.1 Specialty Qualification. In addition to the 5-level qualifications, an individual must possess advanced electronics skills and knowledge necessary to analyze performance and isolate complex malfunctions of radar special test equipment and aircraft components.

10.3.1.1. Knowledge. Knowledge is mandatory of: electronic and computer fundamentals, solid state devices, numbering systems, and principles of radio frequency transmission and reception applied to AWACS, JSTARS, and interrogator systems; concepts and application of maintenance directives; wiring, logic, and schematic diagrams; digital data processing; pulse Doppler radar theory; nuclear hardness integrity maintenance; and Air Force supply procedures. In addition to the 5-level qualifications, a 7-level must be able to supervise and train personnel to maintain avionics systems. They must be able to plan, schedule, and organize maintenance to ensure effective utilization of available resources. Qualification is required on advanced repair, inspection, troubleshooting, and diagnostic techniques. Historical documentation analysis is also required for all 7-levels.

10.3.1.2. Education. For entry into this specialty, completion of high school with courses in physics and mathematics is desirable.

10.3.1.3. Training. Qualification in and possession of AFSC 2A154.

10.3.1.4. Experience. The following experience is mandatory for award of AFSC 2A174. Qualification in and possession of AFSC 2A154. Also, experience performing and supervising functions such as manual testing, installing, repairing, or modifying radar and interrogator systems using test equipment.

10.3.1.5. Other. The following are mandatory as indicated:

10.3.1.5.1. For entry into this specialty, normal color vision as defined in AFMAN 48-123.

10.3.1.5.2. For award and retention of AFSCs 2A134/54/74/90 or 2A000, eligibility for a Secret security clearance according to AFI 31-501 (formerly AFR 205-32).

10.3.2. Training Sources/Resources. Seven level upgrade training will be conducted by certified trainers using core tasks, the AFSC 2A174 7-level CDC, and formal 7-level in-residence courses. The 7-level in-residence course was designed to provide the common management skills required of a supervisor in this AFSC. In addition, local units/MAJCOMs may designate specific courses.

10.3.3. Implementation. Qualified trainers will be assigned to train 5-levels on 7-level core tasks and enroll them in 7-level CDCs and MAJCOM QTPs. Prior to attending the resident 7-level course, SSgts must complete all Air Force core tasks, 7-level CDCs, Airman Leadership School, and have a minimum of 18 months OJT as a SSgt. After graduation from the resident 7-level course, the trainee will be awarded the 7-level.

10.4. Superintendent Level Training:

10.4.1 Specialty Qualification. In addition to 7-level qualifications, individuals must possess advanced skills and knowledge of concepts and principles in the management of aircraft avionics systems.

10.4.1.1. Knowledge. Knowledge is mandatory of: avionics and electronic computers, data processing systems, and radar and inertial electronic principles; electronic and mechanical principles applying to guidance and control and power and motion transmission; infrared; lasers; cryogenics; low light level television and optical systems; altitude stabilization theory, astro compasses, data flow analysis, torquing amplifiers, accelerometers, and servo mechanisms; testing, measuring, and reference standard devices; digital processes, computer logic, and microelectronics of integrated circuits; supply procedures, personnel management, and administrative techniques; concepts and application of maintenance directives; and interpreting schematic, logic, and wiring diagrams, blueprints, and technical orders. To perform duties at the 9 skill level, an individual must possess advanced skills and knowledge of concepts and principles of radar systems and be qualified to efficiently manage and direct aerospace repairs to include: planning and organizing resources, evaluating maintenance, interpreting and resolving technical problems, analyzing system/component failures, evaluating inspection results, and determining optimum management procedures and requirements. The 9-level needs to be an effective leader; must be able to forecast, budget, and manage funding and other assigned resources; and must be knowledgeable of all environmental standards and ensure adherence to the proper handling and disposal of hazardous materials and waste.

10.4.1.2. Education. For entry into this specialty, completion of high school with courses in physics and mathematics is desirable.

10.4.1.3. Training. Qualification in and possession of AFSC 2A171/72/73/74 or 2A177.

10.4.1.4. Experience. For award of AFSC 2A190, qualification in and possession of AFSC 2A171/72/73/74/ or 2A177 is mandatory. Also, experience is mandatory managing or directing functions such as communication systems, avionics sensors, radar, or navigation.

10.4.1.5. Other. The following are mandatory as indicated:
10.4.1.5.1. For entry into this specialty, normal color vision as defined in AFMAN 48-123.
10.4.1.5.2. For award and retention of AFSCs 2A134/54/74/90 or 2A000, eligibility for a Secret security clearance according to AFI 31-501.
10.4.2. Training Sources/Resources. The Senior NCO Academy, MAJCOM courses, and unit OJT will be used for 9-level upgrade training.
10.4.3 Implementation. Individuals will complete MAJCOM required training, unit OJT, and be promoted to SMSgt for award of the 9-level. Individuals will attend the Senior NCO Academy after they are selected for promotion to SMSgt.

SECTION D - RESOURCE CONSTRAINTS

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

12. Apprentice Level Training Constraints.
12.1. Constraints. JSTARS Prime Mission Equipment (PME) trainer not available at Keesler AFB. ECD: NOV 97.
12.1.1. Impact. The Keesler JSTARS apprentice course cannot begin until 60 days after PME trainer acceptance testing is completed, estimated Nov. 97 acceptance of PME trainer. In the interim the students will continue to attend the AWACS apprentice course and the 373 TRS Det 6 will provide JSTARS training at Robins AFB.
12.1.2. Resources Required. JSTARS PME trainer currently under contract.
12.1.3. Action Required. 336th TRS/TTKN will monitor progress. ECD: NOV 97.
12.2. Constraints. Availability of current and comprehensive technical Data to drive curriculum development. JSTARS course will be baselined to available preliminary technical orders.
12.2.1. Impact. Training received may not match expected training required.
12.2.2. Resources Required. Current and valid technical orders in sufficient quantity to support 40 students and 8 instructors simultaneously.
12.2.3. Action Required. ESC/JS-1G will monitor the T.O. development and ensure Keesler receives the most current information. ECD: TBD.
12.3. Constraints. The JSTARS Integrated Maintenance Information System (JIMIS) is still under development, and hasn't been delivered to the Air Force.
12.3.1. Impact Cannot implement the JIMIS training requirements within the CFETP
12.3.2. Resources Required. Delivery of operational JIMIS system, adequate technical data, and sufficient numbers of work stations to facilitate curriculum development and classroom/laboratory training.
12.3.3. Action Required. Ensure work station requirements have been addressed by Electronic Systems Center (ESC). OPR: ESC/JS-1G ECD: TBD

13. Five Level Training Constraints.
13.1. Constraints. The JSTARS Integrated Maintenance Information System (JIMIS) is still under development, and hasn't been delivered to the Air Force.
13.1.1. Impact Cannot implement the JIMIS training requirements within the CFETP
13.1.2. Resources Required. Delivery of an operational JIMIS system, adequate technical data, and sufficient numbers of work stations to conduct Career Development Course research.
13.1.3. Action Required. Ensure work station requirements have been addressed by Electronic Systems Center (ESC). OPR: ESC/JS-1G ECD: TBD

14. Seven-Level Training Constraints.
14.1. Constraints. The JSTARS Integrated Maintenance Information System (JIMIS) is still under development, and hasn't been delivered to the Air Force.
14.1.1. Impact Cannot implement the JIMIS training requirements within the CFETP
14.1.2. Resources Required. Delivery of an operational JIMIS system, adequate technical data, and sufficient numbers of work stations to conduct Career Development Course research.
14.1.3. Action Required. Ensure work station requirements have been addressed by Electronic Systems Center (ESC). OPR: ESC/JS-1G ECD: TBD

SECTION E - TRANSITIONAL TRAINING GUIDE

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

PART II

SECTION A - SPECIALTY TRAINING STANDARD

1. Implementation.

1.1. The AWACS specific STS elements will be used for technical training provided by AETC for classes beginning 16 May 97 and graduating 20 Nov 97.
1.2. Technical training of the JSTARS specific STS elements will be provided by AETC beginning sixty days after delivery and acceptance of the JSTARS trainer. Estimated delivery date for the JSTARS trainer is 30 September 1997.

2. Purpose. As prescribed in AFI 36-2201, this STS:
2.1. Lists in the column 1 of attachments 2 and 3 (*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 2A and 2B (*Core Tasks*) identifies, by asterisk (*), specialty-wide training requirements. Core tasks identified with an */R are optional for AFRC and ANG.
2.2. Provides **certification for OJT**. Column 3 (A, B, C, D, and E) is used to record completion of tasks and knowledge training requirements. Use automated training management systems to document technician qualifications, if available. Task certification must show a certification/completed date. Certification on all shop/flightline core tasks applicable to at least one MDS aircraft assigned must be completed for skill level upgrade. Core tasks which are not applicable to base assigned aircraft or equipment are not required for upgrade (units are not exempt if equipment is assigned within another unit on base).
2.3. Shows **formal training** requirements. Column 4 (A1 and C1) shows the proficiency to be demonstrated on the job by the graduate as a result of training on the task/knowledge provided by the Training Center for courses E3ABR2A134 000/E3ABR2A134 100 and E3ACR2A17X 000 respectively, as described in AFCAT 36-2223. When two codes are used in columns 4A1 and 4C1, the first code is the established requirement for resident training on the task/knowledge, and the second code indicates the level of training provided in the course due to equipment shortages or other resource constraints.
2.3.1. Shows **correspondence course** requirements. Column 4 (B2 and C2) indicates the career knowledge provided by the 5- and 7-level CDCs. See ECI/AFSC/CDC listing maintained by the unit training manager for current CDC listings.
2.4. Qualitative Requirements. Attachment 1 contains the proficiency code key used to indicate the level of training and knowledge provided by resident training and career development courses.
2.5. Becomes a **job qualification standard (JQS)** for on-the-job training when placed in AF Form 623, On-the-Job Training Record, and used according to AFI 36-2201. When used as a JQS, the following requirements apply:
2.5.1. Documentation. Document and certify completion of training. Identify duty position requirements by circling the subparagraph number or letter next to the task statement. Automated records, utilizing Core Automated Management System (CAMS) or Integrated Maintenance Data System (IMDS), reflecting this STS may be used and are highly encouraged. Use of attachments

one, two and three (1-3) (or automated records) is mandatory; use of attachment four (4) is optional based upon duty position requirements. As a minimum, complete the following columns in Part 2 of the CFETP: Training Completed, Trainee Initials, Trainer Initials, Certifier Initials (if applicable).

2.5.1.1. Converting from Old Document to CFETP. There are no approved AFJQSs for this AFSC; therefore, conversion of all training records to this CFETP STS are mandatory. Use this CFETP STS (or automated STS) to identify and certify all past and current qualifications. For those tasks previously certified and required in the current duty position, evaluate current qualifications and, when verified, recertify using current date as completion date and enter certifier's and trainee's initials. For previous certification on tasks not required in the current duty position, carry forward *only* the previous completion date. If and when these tasks become a duty position requirement, recertify with current date, and certifier's and trainee's initials.

2.5.1.2. Documenting Career Knowledge. When a CDC is not available: the supervisor identifies STS training references that the trainee requires for career knowledge and ensures, as a minimum, that trainees cover the mandatory items in AFI 36-2108. For two-time CDC course exam failures: supervisors identify all STS items corresponding to the areas covered by the CDC. The trainee completes a study of STS references, undergoes evaluation by the task certifier, and receives certification on the STS. ***NOTE:*** Career Knowledge must be documented prior to submitting a CDC waiver.

2.5.1.3. Decertification and Recertification. When an airman is found to be unqualified on a task previously certified for his or her position, the supervisor lines through the previous certification or deletes previous certification when using automated system. Appropriate remarks are entered on the AF Form 623A, **On-The-Job Training Record Continuation Sheet**, as to the reason for decertification. The individual is recertified (if required) either by erasing the old entries and writing in the new or by using correction fluid (if the entries were made in ink) over the previously certified entry.

2.5.2. Training Standard. Tasks are trained and qualified to the go/no go level. Go means the individual can perform the task without assistance and meet local demands for accuracy, timeliness, and correct use of procedures.

2.6. Is a guide for development of promotion tests used in the Weighted Airman Promotion System (WAPS). Specialty Knowledge Tests (SKTs) are developed at the USAF Occupational Measurement Squadron 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 WAPS catalog. Individual responsibilities are in chapter 14 of AFI 36-2606, *Reenlistment in the United States Air Force.* WAPS is not applicable to the Air National Guard or Air Force Reserve.

2.7. The Common Electronics Principles Course E3AQR30020 010, is a prerequisite for the qualitative requirements shown in attachment 1. Attachment 3 indicates the level of training provided for each task/knowledge.

3. Recommendations. Report unsatisfactory performance of individual course graduates, using AF Form 1284 as prescribed in AFI 36-2202. Report inadequacies and suggested corrections to this STS through MAJCOM functional managers to 81 TRG/CCVT, 825 Hercules St, Ste 101, Keesler AFB MS 39534-2037, referencing specific paragraphs. A customer service information

line has been installed for the supervisor's convenience to identify graduates who may have received insufficient training on task/knowledge items listed in this training standard. For a quick response to problems, call our customer service information line, Defense Switching Network (DSN) 597-4566, anytime day or night.

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

WILLIAM P. HALLIN, Lieutenant General, USAF
DCS/Installations and Logistics

4 Attachments

1. Proficiency Code Key (Mandatory)
2. Common 2AX Avionics STS (Mandatory)
3. Airborne Surveillance Radar Systems STS (Mandatory)
4. Electronic Fundamentals/Applications STS (Optional)

THIS BLOCK IS FOR IDENTIFICATION PURPOSES ONLY		
NAME OF TRAINEE		
PRINTED NAME (*Last, First, Middle Initial*)	INITIALS *(Written)*	SSAN

PRINTED NAME OF TRAINING/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***
N/I	***N/I***
N/I	***N/I***

QUALITATIVE REQUIREMENTS

PROFICIENCY CODE KEY		
	SCALE VALUE	**DEFINITION: The individual**
TASK PERFORMANCE LEVELS	1	**IS EXTREMELY LIMITED.** (Can do simple parts of the task. Needs to be told or shown how to do most of the task.)
	2	**IS PARTIALLY PROFICIENT.** (Can do most parts of the task. Needs only help on hardest parts. **)**
	3	**IS COMPETENT.** (Can do all parts of the task. Needs only a spot check of completed work.)
	4	**IS HIGHLY PROFICIENT.** (Can do the complete task quickly and accurately. Can tell or show others how to do the task.)
*TASK KNOWLEDGE LEVELS	a	**KNOWS NOMENCLATURE.** (Can name parts, tools, and simple facts about the task.)
	b	**KNOWS PROCEDURES.** (Can determine step by step procedures for doing the task.)
	c	**KNOWS OPERATING PRINCIPLES.** (Can identify why and when the task must be done and why each step is needed.)
	d	**KNOWS ADVANCED THEORY.** (Can predict, isolate, and resolve problems about the task.)
**SUBJECT KNOWLEDGE LEVELS	A	**KNOWS FACTS.** (Can identify basic facts and terms about the subject.)
	B	**KNOWS PRINCIPLES.** (Can identify relationship of basic facts and state general principles about the subject.)
	C	**KNOWS ANALYSIS.** (Can analyze facts and principles and draw conclusions about the subject.)
	D	**KNOWS EVALUATION.** (Can evaluate conditions and make proper decisions about the subject.)

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.

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
NOTE 1: This attachment identifies common 2AX Avionics standardized requirements for the 3-level and 7-level courses.												
NOTE 2: Items in column 1 marked with an asterisk (*) are the task/knowledge items that are trained in resident wartime courses.												
NOTE 3: Asterisks in column 2A and 2B indicate minimum mandatory requirements for upgrade to the applicable skill level. Items identified with an */R are optional for AFRES and ANG.												
NOTE 4: Where AFI 21-101 technical reference are quoted, applicable MAJCOM/Multi-command regulations also apply.												
A2.1. CAREER LADDER PROGRESSION TR: AFI 36-2108												
A2.1.1. Progression in career ladder 2A1X4								A	-	-	-	-
A2.1.2. Duties of AFSC 2A1X4								A	-	-	-	-
*A2.2. SECURITY TR: DoDR 5200.1-R/AFI 31-401, 21-109, AFSSI 4100, 5100												
A2.2.1. Communications Security (COMSEC) TR: AFI 21-109, 33-211 Vol 1												
A2.2.1.1. Security violations								A	-	-	-	-
A2.2.1.2. MAJCOM/Field Operating Agency (FOA) Critical Information (Cis)								A	-	-	-	-
A2.2.1.3. Observe security precautions								A	-	-	-	-
A2.2.1.4. Classify information								-	-	-	-	-
A2.2.2. Specific OPSEC vulnerabilities of AFSC 2A1X4 TR: AFI 10-1101								A	-	B	-	-
A2.2.3. Physical security TR: AFI 31-101 Vol 1												
A2.2.3.1. Safeguard classified equipment								-	-	-	-	-
A2.2.3.2. Safeguard classified information								-	-	-	-	-
A2.2.4. Use system security guides TR: Applicable weapons system security guides								-	-	-	-	-
A2.2.5. Information warfare TR: TBD								-	-	-	-	-
*A2.3. AF OCCUPATIONAL SAFETY AND HEALTH (AFOSH) PROGRAM TR: AFOSH Standards 127-100, AFI 91-2, 91-66, 91-301												
A2.3.1. Hazards associated with AFSC 2A1X4												
A2.3.1.1. Gases								A	-	B	-	-
A2.3.1.2. Radio frequency								A	-	B	-	-
A2.3.1.3. High voltage								A	-	B	-	-
A2.3.1.4. Cleaning agents								A	-	B	-	-
A2.3.1.5. Hazardous materials												
A2.3.1.5.1. Types of hazardous materials fluids used in AGE								A	-	B	-	-
A2.3.1.5.2. Handling procedures								A	-	B		-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A2.3.1.5.3. Storage and labeling								A	-	B	-	-
A2.3.1.5.4. Proper disposal								A	-	B	-	-
A2.3.1.5.5. Determine proper disposal procedures								-	-	-	3c	-
A2.3.1.5.6. Material Safety Data Sheet (MSDS)								A	-	B	-	-
A2.3.1.5.7. Review material Safety Data Sheet (MSDS)								-	-	-	3c	-
A2.3.2. AFOSH standards associated with AFSC 2A1X4								A	-	-	-	-
A2.3.3. Maintain clean work area								2b	-	-	-	-
A2.3.4. Maintain safe work area TR: TO 31-1-141-1								A	-	B	-	-
A2.3.5. Flightline safety								A	-	B	-	-
A2.3.6. Use precautions when handling electronic equipment TR: TO 31-1-141-1	*							2b	-	B	-	-
A2.3.7. Portable fire extinguishers TR: TO 31-1-141-1								A	-	-	-	-
A2.3.8. Environmental impacts associated with the job								A	-	-	-	-
A2.4. SUPERVISION												
A2.4.1. Orient new personnel TR: AFI 36-2108, AFI 36-2202								-	-	-	-	-
A2.4.2. Assign personnel to duty positions TR: AFI 21-101, ACCI 21-166								-	-	-	-	-
A2.4.3. Coordinate maintenance with other sections or agencies TR: AFI 21-101, ACCI 21-166								-	-	-	-	-
A2.4.4. Establish TR: AFI 21-101, ACCI 21-166												
A2.4.4.1. Work priorities								-	-	-	3c	-
A2.4.4.2. Work methods								-	-	-	3c	-
A2.4.4.3. Performance standards								-	-	-	3c	-
A2.4.4.4. Requirements								-	-	-	3c	-
A2.4.5. Evaluate work performance of subordinates TR: AFI 36-2108, AFP 36-2241								-	-	-	-	-
A2.4.6. Write performance reports TR: AFI 36-2403, 36-2907								-	-	-	-	-
A2.4.7. Interpret policies, directives, or procedures for subordinates TR: AFP 36-2241								-	-	-	3c	-
A2.4.8. Counsel subordinates on military related problems								-	-	-	-	-
A2.4.9. Prepare												

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A2.4.9.1. Awards recommendations TR: AFIs 36-2803, 36-2805								-	-	-	-	-
A2.4.9.2. Personnel action requests TR: AFM 30-130								-	-	-	-	-
A2.4.9.3. Correspondence TR: AFH 37-137, AFP 36-2241								-	-	-	-	-
A2.4.9.4. Leave schedules TR: AFI 36-3003								-	-	-	-	-
A2.4.10 Implement												
A2.4.10.1. Safety programs TR: AFIs 91-204, 91-207, 91-301								-	-	-	-	-
A2.4.10.2. Security programs TR: AFIs 31-401, 31-501, 71-101V1 AFSSI 5100								-	-	-	3c	-
A2.4.11. Direct												
A2.4.11.1. Flightline maintenance activities TR: AFI 21-101, ACCI 21-166								-	-	-	3c	-
A2.4.11.2. Shop maintenance activities TR: AFI 21-101, ACCI 21-166								-	-	-	3c	-
A2.4.11.3. Equipment monitoring programs TR: AFI 21-101, ACCI 21-166								-	-	-	-	-
A2.4.11.4. Training program TR: AFI 36-2202								-	-	-	3c	-
A2.4.12. Evaluate use of TR: AFI 21-101, ACCI 21-166												
A2.4.12.1. Workspace								-	-	-	-	-
A2.4.12.2. Equipment								-	-	-	-	-
A2.4.12.3. Supplies								-	-	-	-	-
A2.5. TRAINING TR: AFI 36-2202												
A2.5.1. Plan training								-	-	-	3c	-
A2.5.2. Conduct training								-	-	-	3c	-
A2.5.3. Evaluate trainees on their progress								-	-	-	3c	-
A2.5.4. Maintain training records								-	-	-	3c	-
A2.6. OPERATIONS AND LOGISTICS MANAGEMENT												
A2.6.1. Basic functions within the operations complex TR: AFIs 11-401, 11-206; ACCI 21-166								A	-	B	-	-
A2.6.2. Analyze basic functions within the operations complex								-	-	-	3c	-
A2.6.3. Basic functions within the logistics complex TR: ACCI 21-166								A	-	B	-	-
A2.6.4. Analyze basic functions within the logistics complex								-	-	-	3c	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A2.6.5. Maintenance Data Collection System TR: ACCI 21-166								A	-	B	-	-
A2.6.6. Use Maintenance Data Collection System products								-	-	-	3c	-
A2.6.7. Processing and controlling of material								A	-	B	-	-
A2.6.7.1. Determine authorizations								-	-	-	3c	-
A2.6.7.2. Review and correct supply documents								-	-	-	3c	-
A2.6.7.3. Determine equipment status								-	-	-	3c	-
A2.6.7.4. Request adjusted stock level								-	-	-	3c	-
A2.6.8. Management of training TR: AFI 21-101, ACCI 21-166								A	-	B	-	-
A2.6.9. Depot Level Repairable (DLR) assets TR: AFM 67-1, Vol. 2, Part 13								A	-	B	-	-
A2.6.10. Control Depot Level Repairable (DLR) assets								-	-	-	3c	-
A2.7. MAINTENANCE AND INSPECTION												
A2.7.1. Maintenance systems TR: AFI 21-109, ACCI 21-166								A	-	B	-	-
A2.7.2. Use maintenance systems								-	-	-	3c	-
A2.7.3. Inspection systems TR: TO 00-20 Series, 1E-3A-6, 1E-8C-6												
A2.7.3.1. Use inspection systems								-	-	-	3c	-
A2.7.3.2. Preflight								A	-	B	-	-
A2.7.3.3. Phase								A	-	B	-	-
A2.7.3.4. Special								A	-	B	-	-
A2.7.4. Collect Maintenance Data TR: TO 00-20 Series, ACCI 21-166												
A2.7.4.1. Document on-equipment maintenance	*							2b	-	-	-	-
A2.7.4.2. Evaluate on-equipment maintenance data								-	-	-	3c	-
A2.7.4.3. Document off-equipment maintenance	*							2b	-	-	-	-
A2.7.4.4. Evaluate off-equipment maintenance data								-	-	-	3c	-
A2.7.5. Material Deficiency Report TR: TO 00-35D-54								A	-	B	-	-
A2.7.6. Initiate Material Deficiency Reports TR: TO 00-35D-54								-	-	-	3c	-
A2.7.7. Core Automated Maintenance Systems (CAMS) TR: AFM 66-279, TO 00-20 Series												
A2.7.7.1. Core Automated Maintenance Systems (CAMS) operation	*							-	-	B	-	B
A2.7.7.2. Use Core Automated Maintenance System (CAMS)	*							2b	-	-	-	-
A2.7.7.3. Use standard base supply system (SBSS) interface								-	-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A2.8. Use aircraft forms								-	-	-	3c	-
A2.9. AF Gold								-	-	-	-	-
A2.10. PUBLICATIONS												
A2.10.1. Air Force technical order system TR: AFPD 21-3, TOs 00-5-1, 00-5-15								A	-	B	-	-
A2.10.2. Use technical orders when maintaining avionics equipment TR: TO 00-5-1	*							2b	-	B	-	-
A2.10.3. Standard publications to obtain information pertinent to maintenance TR: AFINDs 2, 9, 10, AFI Subject Series 10, 21, 36, and 91								A		B		
A2.10.4. Maintain reference libraries TR: AFI 37-160V7, TO 00-5-1								-	-	-	-	-
A2.10.5. Technical Order Deficiency Reporting System TR: TO 00-5-1								-	-	-	-	-

SUMMARY OF CHANGES

Major changes include the creation of attachment 2, Common 2AX Avionics STS, common elements in the Aero-Space Manned Vehicle AFS, 2A1X4. Attachment 3, Airborne Surveillance Radar Systems STS, will cover the elements specific to the AWACS/JSTARS career field, 2A1X4 AFSC. The Electronic Fundamentals/Applications elements will be identified in attachment 4.

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.1. Technical Order Deficiency Reporting TR: TO 00-5-1												
A3.1.1. Airborne Warning and Control System (AWACS)								A	-	B	-	-
A3.1.2. Joint Surveillance Target Attack Radar System (Joint-STARS)								A	-	B	-	-
A3.2. Use JSTARS Integrated Maintenance Information System (JIMIS) TR: TBD								@A #2b/A	-	A	-	-
*A3.3. RADAR THEORY TR: TO 31-1-141 Series, 1E-3A-43-2-93 Series, 1E-8C-99 Series, 1E-8C-2 Series												
A3.3.1. Frequency Generation												
A3.3.1.1. Operating Frequencies								A	-	B	-	-
A3.3.1.2. Local Oscillator Frequencies								A	-	B	-	-
A3.3.1.3. Intermediate Frequencies								A	-	B	-	-
A3.3.2. Amplification/Transmitters												
A3.3.2.1. Pulsing								A	-	B	-	-
A3.3.2.2. Continuous Wave (CW)								A	-	B	-	-
A3.3.2.3. Pulse Repetition Time/ Pulse Repetition Frequency								A	-	B	-	-
A3.3.3. Antenna and Steering Control								A	-	B	-	-
A3.3.4. Receiver Processing												
A3.3.4.1. IF Mixing								A	-	B	-	-
A3.3.4.2. Analog to Digital Conversions								A	-	B	-	-
A3.3.4.3. Clutter Processing								A	-	B	-	-
A3.3.4.4. Pulse Compression/Expansion								A	-	B	-	-
A3.3.5. Doppler Processing								A	-	B	-	-
A3.3.6. System Timing and Synchronization								A	-	B	-	-
A3.3.7. Command and Control								A	-	B	-	-

NOTE 1: Items in column 1 marked with an asterisk (*) are the task/knowledge items that are trained in resident wartime courses.

NOTE 2: Asterisks in column 2A and 2B indicate minimum mandatory requirements for upgrade to the applicable skill level. Items identified with an */R are optional for AFRES and ANG.

NOTE 3: Where AFI 21-101 technical reference are quoted, applicable MAJCOM/Multi-command regulations also apply.

NOTE 4: Proficiency codes in column 4A(1) preceded by a "@" symbol indicate the task/knowledge is taught only in the AWACS trailer course E3ABR2A134 000. Codes preceded by a "#" symbol indicate the task/knowledge is taught only in the JSTARS trailer course E3ABR2A134 100. Tasks/knowledge without either symbol indicate they are taught in blocks of instruction common to both courses.

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
*A3.4. SYSTEMS FUNCTIONAL ANALYSIS INCLUDING PURPOSE, OPERATION, SIGNAL PATHS, SIGNAL DISTRIBUTION AND MISSION TIE-IN												
A3.4.1. Aircraft support systems												
A3.4.1.1. Power requirements												
A3.4.1.1.1. E-3 TR: TO 1E-3A-2-1-1								A	-	-	-	-
A3.4.1.1.2. E-8 TR: 1E-8C-2-05JG-00-3								A	-	-	-	-
A3.4.1.2. Cooling systems												
A3.4.1.2.1. E-3 TR: TOs 1E-3A-43-2-93-1-2, 1E-3A-43-2-93-3-15								A	-	-	-	-
A3.4.1.2.2. E-8 TR: TO 1E-8C-2-05JG-00-4								A	-	-	-	-
A3.4.2. Airborne Warning and Control System (AWACS)												
A3.4.2.1. AWACS Surveillance System TR: TO 1E-3A-43-2-93-3-15								A	-	A	-	B
A3.4.2.2. Radar Control and Maintenance Panel (RCMP) TR: TO 1E-3A-43-2-93-3-6								@A	-	A	-	B
A3.4.2.3. System fault analysis (DATA COMM) TR: TO 1E-3A-43-2-93-3-5								@A	-	A	-	B
A3.4.2.4. Radar Data Correlator (RDC) TR: TOs 1E-3A-43-2-93-1-5, 1E-3A-43-2-93-3-4								@A	-	A	-	B
A3.4.2.5. Stable Local Oscillator (STALO) TR: TO 1E-3A-43-2-93-3-7								@A	-	A	-	B
A3.4.2.6. Synchronizer TR: TO 1E-3A-43-2-93-3-8								@A	-	A	-	B
A3.4.2.7. Transmitter group TR: TO 1E-3A-43-2-93-3-13								@A	-	A	-	B
A3.4.2.8. Antenna group TR: TO 1E-3A-43-2-93-3-12								@A	-	A	-	B
A3.4.2.9. Analog receiver TR: TO 1E-3A-43-2-93-3-9								@A	-	A	-	B
A3.4.2.10. Digital Doppler Processor (DDP) TR: TO 1E-3A-43-2-93-1-3-11								@A	-	A	-	B
A3.4.2.11. Doppler Range Resolver (DRR) TR: TOs 1E-3A-43-2-93-1-5 1E-3A-43-2-93-3-4								@A	-	A	-	B
A3.4.2.12. Environmental Control Subsystems TR: TOs 1E-3A-43-1-1, 1E-3A-43-2-93-3, 1E-3A-43-2-93-3-12, 1E-3A-43-2-93-3-13								@A	-	A	-	B

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.4.2.13. Maritime Surveillance Capability(MSC) Receiver TR: TO 1E-3A-43-2-93-3-10								@A	-	A	-	B
A3.4.2.14. Digital Land Mass Blanker (DLMB) TR: TO 1E-3A-43-2-93-3-14								@A	-	A	-	B
A3.4.3. Interrogator System TR: TO 1E-3A-43-2-93-2												
A3.4.3.1. Interrogation Friend or Foe								A	-	A	-	B
A3.4.3.2. Antenna group								@A	-	A	-	B
A3.4.3.3. E17 Cabin Components												
A3.4.3.3.1. RTDP								@A	-	A	-	B
A3.4.3.3.2. RT								@A	-	A	-	B
A3.4.3.3.3. Power supplies								@A	-	A	-	B
A3.4.3.3.4. RF Transmission Switch								@A	-	A	-	B
A3.4.3.3.5. OBTM&M								@A	-	A	-	B
A3.4.4. Joint Surveillance Target Attack Radar System (JSTARS) Surveillance System TR: TO 1E-8C-2-99GS-00-1												
A3.4.4.1. JSTARS Surveillance System								A	-	A	-	B
A3.4.4.2. Data Processing Subsystem												
A3.4.4.2.1. VAX Computer												
A3.4.4.2.1.1. System Monitor and Control (SM&C)								#A	-	A	-	B
A3.4.4.2.1.2. General Purpose Computer (GPC)								#A	-	A	-	B
A3.4.4.2.1.3. Central Data Processor (CDP)								#A	-	A	-	B
A3.4.4.2.1.4. Radar Data Processor (RDP)								#A	-	A	-	B
A3.4.4.2.2. Expansion Chassis												
A3.4.4.2.2.1. System Monitor and Control								#A	-	A	-	B
A3.4.4.2.2.2. General Purpose Computer								#A	-	A	-	B
A3.4.4.2.3. Data Interfaces (LANs and Buses)								#A	-	A	-	B
A3.4.4.2.4. Versatile Media Mass Memory (VM3) RemovableTransportable Memory Module (RTMM)								#A	-	A	-	B
A3.4.4.2.5. Power Interlock Control Junction Box (PIC JB)								#A	-	A	-	B
A3.4.4.2.6. System Test Panel Junction Box (STP JB)								#A	-	A	-	B
A3.4.4.2.7. System Monitor and Control Junction Box (SM&C JB)								#A	-	A	-	B
A3.4.4.2.8. Serial Data Switching Unit Junction Box (SDSU JB)								#A	-	A	-	B
A3.4.4.2.9. Prime Mission Equipment (PME) Control Panel								#A	-	A	-	B
A3.4.4.3. Data Display Subsystem												

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.4.4.3.1. Advanced Digital Display Processor (ADDP)								#A	-	A	-	B
A3.4.4.3.2. Display Unit								#A	-	A	-	B
A3.4.4.3.3. Operator Work Station Embedded Disk (OED)								#A	-	A	-	B
A3.4.4.3.4. Data Entry Device								#A	-	A	-	B
A3.4.4.4. Data Recording Subsystem												
A3.4.4.4.1. Printer								#A	-	A	-	B
A3.4.4.4.2. Printer Interface								#A	-	A	-	B
A3.4.4.5. Radar Subsystem												
A3.4.4.5.1. Radar Control Unit (RCU)								#A	-	A	-	B
A3.4.4.5.2. Receiver Analog to Digital Converter (ADC)								#A	-	A	-	B
A3.4.4.5.3. Exciter (XCTR)								#A	-	A	-	B
A3.4.4.5.4. Transmitters (XMTR)								#A	-	A	-	B
A3.4.4.5.5. High Power Combiner (HPC)								#A	-	A	-	B
A3.4.4.5.6. Antenna group								#A	-	A	-	B
A3.4.4.5.7. Signal Pre-processor (SPP)								#A	-	A	-	B
A3.4.4.5.8. Pulse Compression Unit (PCU)								#A	-	A	-	B
A3.4.4.5.9. Programmable Signal Processor (PSP)								#A	-	A	-	B
A3.4.4.5.10. Inertial Measurement Group (IMG)								#A	-	A	-	B
A3.4.4.5.11. Antenna Servo Electronics (ASE)								#A	-	A	-	B
A3.4.4.5.12. Environmental Control System								#A	-	A	-	B
A3.4.4.6. Theory of Operation												
A3.4.4.6.1. Built in Test												
A3.4.4.6.1.1. Operational Readiness Test (ORT)								#A	-	A	-	B
A3.4.4.6.1.2. On-line Testing								#A	-	A	-	B
A3.4.4.6.2. Diagnostic Test								#A	-	A	-	B
A3.4.4.6.3. Software Programs								#A	-	A	-	B
*A3.5. SUPPORT EQUIPMENT TR: APPLICABLE 31 & 33 Series TOs												
A3.5.1. General Purpose Support Equipment												
A3.5.1.1. Principles of support equipment												
A3.5.1.1.1. Purpose								A	-	-	-	-
A3.5.1.1.2. Characteristics								A	-	-	-	-
A3.5.1.2. Common test equipment												
A3.5.1.2.1. milliohmeters								@A	-	B	-	-
A3.5.1.2.2. Power meters												
A3.5.1.2.2.1. Perform measurements								@2b	-	B	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.5.1.2.2.2. Perform calculations								@2b	-	B	-	-
A3.5.1.2.3. Decade resister box								-	-	-	-	-
A3.5.1.2.4. Mega ohm meter								-	-	B	-	-
A3.5.1.2.5. Sweep Oscillator								-	-	-	-	-
A3.5.1.2.6. X-Y Recorder								-	-	-	-	-
A3.5.1.2.7. Network Analyzer								-	-	-	-	-
A3.5.1.2.8. 1553 Bus Analyzer								-	-	-	-	-
A3.5.1.2.9. Use Frequency Counter								@2b	-	B	-	-
A3.5.1.2.10. Use Reflectometer								2b	-	B	-	-
A3.5.2. Airborne Warning and Control Systems (AWACS)												
A3.5.2.1. Support equipment TR: 1E-3A-43-2-93 Series TOs												
A3.5.2.1.1. Digital Data Control monitor (FFT TEST SET) TR: TO 33D7-86-15-1								@A	-	A	-	B
A3.5.2.1.2. Radar digital computer test set (PMCU) TR: TO 33D7-3-179-1								@A	-	A	-	B
A3.5.2.1.3. Analog Receiver Test Set (RIB) TR: TO 33D7-17-60-1								-	-	-	-	-
A3.5.2.1.4. Multiplex Data Display (MDD) TR: TO 33D7-44-227-1								-	-	-	-	-
A3.5.2.1.5. Radar Test Set AN/UPM-155 TR: TOs 33A1-3-426-3, 12P4-1A-122								@A	-	A	-	B
A3.5.2.1.6. Radar Test Set AN/APM-401 TR: TO 33D7-36-35-1								@A	-	A	-	B
A3.5.2.1.7. Antenna Control Drive Test Set AN/APM-402 TR: TO 33D7-47-55-1								@A	-	A	-	B
A3.5.2.1.8. High-speed line printer TR: TO 31S5-4-660-1								-	-	-	-	A
A3.5.2.1.9. Memory Chip(PROM) Programmer TR: TOs 1E-3A-43-2-93-1-20, 1E-3A-43-2-93-3-2								@A	-	A	-	-
A3.5.2.1.10. SF-6 Ground Cart TR: TO 1E-3A-43-2-93-3								@A	-	-	-	-
A3.5.2.1.11. FC-77 Servicing Cart TR: TO 1E-3A-43-2-93-3								@A	-	-	-	-
A3.5.2.1.12. Nitrogen Cart TR: TOs 12P2-APY 1-2-1, 35D3-6-33-13								@A	-	-	-	-
A3.5.2.1.13. Vacuum Pump TR: TO 1E-3A-43-2-93-3								@A	-	-	-	-
A3.5.2.1.14. Air Pressure Warning Alarm System SDU-34 TR: TO 1E-3A-2-1-1								@A	-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.5.2.1.15. Ion Pump Power Supplies TR: TOs 1E-3A-43-2-93-3, 1E-3A-43-2-93-3-13								@A	-	-	-	B
A3.5.2.1.16. Monorail Assembly TR: TO 1E-3A-43-2-93-3								@A	-	-	-	-
A3.5.2.1.17. Ground Power TR: TO 1E-3A-2-1-1												
A3.5.2.1.17.1. MEPS								-	-	-	-	-
A3.5.2.1.17.2. INET								-	-	-	-	-
A3.5.2.1.18. Environmental Systems TR: TO 1E-3A-2-1-1												
A3.5.2.1.18.1. Air Conditioning Equipment (ACE) Cart								-	-	-	-	-
A3.5.2.1.18.2. Liquid Cooling System (LCS) Cart								-	-	-	-	-
A3.5.2.1.19. FC-77 Top-Off Bottle TR: TO 1E-3A-43-2-93-3								-	-	-	-	-
A3.5.3. Joint Surveillance Target Attack Radar System (JSTARS) Surveillance System												
A3.5.3.1. Use Special purpose support equipment TR: TOs 1E-8C-2-99JG-70-1, 1E-8C-2-99JG-70-2,1E-8C-2-99JG-00-1 1E-8C-2-99JG-00-2 and 35D5-4-11-1												
A3.5.3.1.1. Antenna Handling Unit								-	-	-	-	-
A3.5.3.1.2. Antenna Lifting Beam								-	-	-	-	-
A3.5.3.1.3. Antenna Stanchion								-	-	-	-	-
A3.5.3.1.4. Antenna Array Cover Set								-	-	-	-	-
A3.5.3.1.5. Line Replaceable Unit (LRU) handling Dolly								-	-	-	-	-
A3.5.3.1.6. Monorail and Handling Sling								#2b	-	-	-	-
A3.5.3.1.7. Nitrogen cart								-	-	-	-	-
A3.5.3.1.8. Air Conditioning Equipment (ACE) cart								-	-	-	-	-
A3.5.3.1.9. Trielectron								-	-	-	-	-
A3.5.3.2. Accomplish routine maintenance on support equipment TR: TO 35D5-4-11-1								-	-	-	-	-
*A3.6. PREVENTIVE MAINTENANCE TR: TOs 00-20- Series, 1-1-691												
A3.6.1. Corrosion Inspection								A	-	B	-	-
A3.6.2. Corrosion Treatment								A	-	B	-	-
A3.6.3. Equipment Cleaning								A	-	B	-	-
A3.6.4. Equipment Lubrication								A	-	B	-	-
*A3.7. COMMON O/I MAINTENANCE TR: TOs 00-25-234, 12P2-2APY1-2-1 and Applicable 31, 33 and 110 Series TOs												

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES		2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
		A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
		5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.7.1.	Safety Wire Components	*							2b	-	-	-	-
A3.7.2.	Multiconductor cables												
A3.7.2.1.	Repair								-	-	-	-	-
A3.7.2.2.	Replace								-	-	-	-	-
A3.7.2.3.	Fabricate								-	-	-	-	-
A3.7.3.	Coaxial cables												
A3.7.3.1.	Repair								-	-	B	-	-
A3.7.3.2.	Replace								-	-	-	-	-
A3.7.3.3.	Fabricate								-	-	-	-	-
A3.7.4.	Handtools												
A3.7.4.1.	Inspect for serviceability	*							2b	-	-	-	-
A3.7.4.2.	Use handtools	*							2b	-	-	-	-
A3.7.4.3.	Perform inventory	*							2b	-	-	-	-
A3.7.5.	Wiring diagrams								A	-	A	-	B
A3.7.6.	Wire list								-	-	A	-	B
A3.7.7.	Airborne Warning and Control System (AWACS) TR: TOs 00-25-234, 12P2-2APY1-2-1, 1E-3A-2-110-93-1, 1E-3A-43-2-110-93-2, 1E-3A-43-2-110-93-3 and Applicable 31 and 33 Series TOs												
A3.7.7.1.	Service SF-6 bottle								-	-	-	-	-
A3.7.7.2.	Perform Wire Wrapping								-	-	B	-	-
A3.7.7.3.	Replace Pickle Forks								-	-	B	-	-
A3.7.7.4.	Isolate faults by												
A3.7.7.4.1.	Using Visual checks	*							@2b	-	B	-	-
A3.7.7.4.2.	Comparing test results with TO	*							@2b	-	B	-	-
A3.7.7.4.3.	Performing Symptoms analysis using TO diagrams	*							@1b	-	B	-	-
A3.7.7.4.4.	Tracing Signals	*							@1b	-	B	-	-
A3.7.7.4.5.	Performing Component substitution	*							@b	-	B	-	-
A3.7.7.4.6.	Performing Continuity Checks	*							@2b	-	B	-	-
A3.7.8.	Joint Surveillance Target Attack Radar System (JSTARS) Surveillance System A3.7.8.1. Isolate malfunctions using TR: TO 1E-8C-2-99JG-00-1												

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.7.8.1.1. System software												
A3.7.8.1.1.1. Built-in Test												
A3.7.8.1.1.1.1. Conduct/Perform Operational Readiness Test (ORT)												
A3.7.8.1.1.1.2. Conduct/Perform On-line Testing	*							#2b	-	B	-	-
A3.7.8.1.1.2. Conduct Diagnostic Testing	*							#2b	-	B	-	-
A3.7.8.1.2. System diagrams												
A3.7.8.1.2.1. Use Block	*							#2b	-	B	-	-
A3.7.8.1.2.2. Use Schematics TR: 1E-8C-2-99SD-00-1	*							#2b	-	B	-	-
A3.7.8.1.2.3. Wiring TR: TO 1E-8C-2-99WD-00-1								#A	-	B	-	-
A3.7.8.1.3. Perform Visual checks	*							#2b	-	B	-	-
A3.7.8.1.4. Compare Test Results with TO TR: TOs 1E-8C-2-99SD-00-1 1E-8C-2-99-JG Series								#2b	-	B	-	-
A3.7.8.1.5. Perform Symptoms Analysis Using TO Diagrams TR: TO 1E-8C-2-99GS-00-1-1								#1b	-	B	-	-
A3.7.8.1.6. Signal Tracing								-	-	B	-	-
A3.7.8.1.7. Perform Component Substitution TR: TO 1E-8C-2-99-JG Series								#2b	-	B	-	-
A3.7.8.1.8. Perform Continuity checks								#2b	-	B	-	-
*A3.8. ORGANIZATIONAL MAINTENANCE												
A3.8.1. Airborne Warning and Control Systems (AWACS) TR: AFI 21-101, Applicable CAT 00 & 1 TOs, AFOSH 127-66, ACCI 21-166												
A3.8.1.1. Replace aircraft wiring harnesses												
A3.8.1.1.1. AN/APY-1 or APY-2 Radar Set								-	-	-	-	-
A3.8.1.1.2. AN/APX-103 Interrogator System								-	-	-	-	-
A3.8.1.2. Malfunctions Isolation to associated aircraft system TR: TOs 1E-3A-43-2-93-1-2, 1E-3A-43-2-93-1-30, 1E-3A-43-2-93-3-3, 1E-3A-43-2-93-3-15								@A	-	A	-	B
A3.8.1.3. Enter and Exit TR: TO 1E-3A-43-2-93-3												
A3.8.1.3.1. Forward/AFT lower lobe								-	-	-	-	-
A3.8.1.3.2. Antenna Pedestal								-	-	-	-	-
A3.8.1.3.3. Rotodome interior panels								-	-	-	-	-
A3.8.2. Joint Surveillance Target Attack Radar System (JSTARS) Surveillance System TR: TOs 1E-8C-2-99JG-00-1 1E-8C-2-99FI-00-1												

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES		2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
		A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
		5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.8.2.1.	Replace aircraft wiring harnesses												
A3.8.2.1.1.	Data Processing Subsystem								-	-	-	-	-
A3.8.2.1.2.	Data Display Subsystem								-	-	-	-	-
A3.8.2.1.3.	Radar Subsystem								-	-	-	-	-
A3.8.2.2.	Failure Isolation to associated aircraft systems								#A	-	A	-	B
A3.8.2.3.	Enter and exit forward lower lobe								-	-	-	-	-
A3.8.2.4.	Access and Secure Surveillance Radar Antenna								-	-	-	-	-
*A3.9.	MAINTAIN INSTALLED EQUIPMENT												
A3.9.1.	Airborne Warning and Control System (AWACS)												
A3.9.1.1.	Operate the surveillance radar TR: TOs 1E-3A-43-2-93-1-2, 1E-3A-43-2-93-1-20, 1E-3A-43-2-93-3-2 1E-3A-43-2-93-3-15												
A3.9.1.1.1.	Turn on	*							@2b	-	B	-	-
A3.9.1.1.2.	Verify performance	*							@2b	-	B	-	-
A3.9.1.1.3.	Reconfigure	*							@2b	-	B	-	-
A3.9.1.1.4.	Mask continuously monitored parameters	*							@2b	-	B	-	-
A3.9.1.1.5.	Interpret messages	*							@2b	-	B	-	-
A3.9.1.1.6.	Inhibit automatic tests	*							@2b	-	B	-	-
A3.9.1.1.7.	Turn off												
A3.9.1.1.7.1.	Normal	*							@2b	-	B	-	-
A3.9.1.1.7.2.	Emergency	*							@b	-	B	-	-
A3.9.1.2.	Radar transmitter ground radiation TR: TOs 1E-3A-43-2-93-1-20, 1E-3A-43-2-93-3-2								@A	-	A	-	B
A3.9.1.3.	Surveillance radar test targets across the interface TR: TOs 1E-3A-43-2-93-1-20, 1E-3A-43-2-93-3-2								@A	-	B	-	-
A3.9.1.4.	Harmonize radar transmitter TR: TOs 1E-3A-43-2-93-1-20, 1E-3A-43-2-93-3-2												
A3.9.1.4.1.	Solenoid current		*						@b	-	B	-	-
A3.9.1.4.2.	Beam voltage	*							@2b	-	B	-	-
A3.9.1.4.3.	Collector current	*							@2b	-	B	-	-
A3.9.1.4.4.	KPA burn-in		*						@b	-	B	-	-
A3.9.1.4.5.	Transmitter harmonization	*							@2b	-	B	-	-
A3.9.1.4.6.	Average power		*						@b	-	B	-	-
A3.9.1.4.7.	Reflected power monitor calibration		*						@b	-	B	-	-
A3.9.1.4.8.	Transmitter peak power	*							@b	-	B	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.9.1.5. Manual Calibration TR: TOs 1E-3A-43-2-93-1-20, 1E-3A-43-2-93-3-2												
A3.9.1.5.1. Noise source diode								-	-	A	-	B
A3.9.1.5.2. Analog to digital offset								@A	-	B	-	-
A3.9.1.5.3. BIT target generator								@A	-	B	-	-
A3.9.1.5.4. Transmit angle control								-	-	A	-	-
A3.9.1.5.5. BTG Target 2 Oscillator Center Frequency								-	-	A	-	-
A3.9.1.5.6. Spectrum Generator 60 MHz Switched Target 1								-	-	A	-	-
A3.9.1.5.7. Clutter VCXO frequency								-	-	B	-	-
A3.9.1.5.8. BTH negative TO								-	-	-	-	-
A3.9.1.5.9. BTH IF AGC noise level								-	-	-	-	-
A3.9.1.6. Radar Special Test TR: TOs 1E-3A-43-2-93-1-20, 1E-3A-43-2-93-3-2												
A3.9.1.6.1. Initiate/Perform Radar Test	*							@2b	-	B	-	-
A3.9.1.6.2. Radar Capability Assessment (RCA)								@A	-	B	-	-
A3.9.1.6.3. Perform Individual special tests	*							@2b	-	B	-	-
A3.9.1.7. Initiate Radar Fault Isolation Test (FIT) TR: TOs 1E-3A-43-2-93-1-20, 1E-3A-43-2-93-3-2												
A3.9.1.7.1. RDC	*							@1b	-	B	-	-
A3.9.1.7.2. Unit level	*							@2b	-	B	-	-
A3.9.1.7.3. System	*							@2b	-	B	-	-
A3.9.1.8. Perform Manual fault analysis												
A3.9.1.8.1. Radar System TR: 1E-3A-43-2-93 Series TOs												
A3.9.1.8.1.1. RDC		*						@1b	-	A	-	B
A3.9.1.8.1.2. Data Comm		*						@1b	-	A	-	B
A3.9.1.8.1.3. RCMP		*						@1b	-	A	-	B
A3.9.1.8.1.4. STALO	*							@1b	-	A	-	B
A3.9.1.8.1.5. Synchronizer		*						@1b	-	A	-	B
A3.9.1.8.1.6. Analog receiver		*						@1b	-	A	-	B
A3.9.1.8.1.7. DDP		*						@1b	-	A	-	B
A3.9.1.8.1.8. Rotodome		*						@1b	-	A	-	B
A3.9.1.8.1.9. Transmitter	*							@1b	-	A	-	B
A3.9.1.8.1.10 System		*						@1b	-	A	-	B
A3.9.1.8.1.11 MSC receiver								@1b	-	A	-	B

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.9.1.8.1.12 DLMB								@1b	-	A	-	B
A3.9.1.8.2. Interrogator System TR: TO 1E-3A-43-2-93-2												
A3.9.1.8.2.1. Steering								@A	-	B	-	-
A3.9.1.8.2.2. RF								@A	-	B	-	-
A3.9.1.8.2.3. OBTM&M								@A	-	B	-	-
A3.9.1.9. Operate interrogator system TR: TO 1E-3A-43-2-93-2												
A3.9.1.9.1. Turn on	*							@b	-	B	-	-
A3.9.1.9.2. Check operation	*							@b	-	B	-	-
A3.9.1.9.3. Turn off	*							@b	-	B	-	-
A3.9.2. JSTARS Surveillance System												
A3.9.2.1. Operate Surveillance System TR: TO 1E-8C-2-99JG-00-1												
A3.9.2.1.1. Execute power turn on procedures	*							#2b	-	B	-	-
A3.9.2.1.2. Initialize System												
A3.9.2.1.2.1. Data Processing Subsystem	*							#2b	-	B	-	-
A3.9.2.1.2.2. Data Display Subsystem	*							#2b	-	B	-	-
A3.9.2.1.2.3. Radar Subsystem	*							#2b	-	B	-	-
A3.9.2.1.3. Monitor & Control System Operation	*							#2b	-	B	-	-
A3.9.2.1.4. Configure Equipment for operational use	*							#2b	-	B	-	-
A3.9.2.2. Initiate Surveillance System Diagnostic Test and interpret results TR: TOs 1E-8C-2-99JG-00-1, 1E-8C-2-99FI-00-1, 1E-8C-2-99FR-00-1												
A3.9.2.2.1. Data Processing Subsystem	*							#2b	-	B	-	-
A3.9.2.2.2. Data Display Subsystem	*							#2b	-	B	-	-
A3.9.2.2.3. Radar Subsystem												
A3.9.2.2.3.1. RSG	*							#2b	-	B	-	-
A3.9.2.2.3.2. RSE	*							#2b	-	B	-	-
A3.9.2.2.3.3. RCU	*							#2b	-	B	-	-
A3.9.2.2.3.4. PSP	*							#2b	-	B	-	-
A3.9.2.3. Initiate Surveillance System Operational Readiness Test and interpret results TR: TOs 1E-8C-2-99JG-00-1,1E-8C-2-99FI-00-1, 1E-8C-2-99FR-00-1												
A3.9.2.3.1. Data Processing Subsystem	*							#2b	-	B	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.9.2.3.2. Data Display Subsystem	*							#2b	-	B	-	-
A3.9.2.3.3. Radar Subsystem	*							#2b	-	B	-	-
A3.9.2.4. Interpret On-line test results TR: TOs 1E-8C-2-99JG-00-1, 1E-8C-2-99FI-00-1, 1E-8C-2-99FR-00-1												
A3.9.2.4.1. Data Processing Subsystem	*							#2b	-	B	-	-
A3.9.2.4.2. Data Display Subsystem	*							#2b	-	B	-	-
A3.9.2.4.3. Radar Subsystem	*							#2b	-	B	-	-
A3.9.2.5. Perform Ground Radiation Procedures								-	-	-	-	-
A3.9.2.6. Align Display units								-	-	-	-	-
A3.9.2.7. Terminate PME System operation								#2b	-	B	-	-
*A3.10. PERFORM POWER-OFF MAINTENANCE												
A3.10.1. Airborne Warning and Control Systems (AWACS) TR: TO 1E-3A-43-2-93-3												
A3.10.1.1. Replace AFT Lower Compartment Line Replaceable Units												
A3.10.1.1.1. Power distribution unit								-	-	-	-	-
A3.10.1.1.2. Protection and control unit								-	-	-	-	-
A3.10.1.1.3. Low voltage auxiliary unit								-	-	-	-	-
A3.10.1.1.4. EMI filter								-	-	-	-	-
A3.10.1.1.5. High voltage transformer								-	-	-	-	-
A3.10.1.1.6. High voltage filter								-	-	-	-	-
A3.10.1.1.7. High voltage regulator								-	-	-	-	-
A3.10.1.1.8. High voltage auxiliary unit								-	-	-	-	-
A3.10.1.1.9. KPA solenoid								-	-	-	-	-
A3.10.1.1.10. Solenoid power supply								-	-	-	-	-
A3.10.1.1.11. Floating deck pulser								-	-	-	-	-
A3.10.1.1.12. Driver								-	-	-	-	-
A3.10.1.1.13. RF sample unit								-	-	-	-	-
A3.10.1.1.14. Microwave assembly								-	-	-	-	-
A3.10.1.1.15. Transmit angle control								-	-	-	-	-
A3.10.1.1.16. Ground deck pulser								-	-	-	-	-
A3.10.1.1.17. Pre-driver								-	-	-	-	-
A3.10.1.1.18. Level set attenuator								-	-	-	-	-
A3.10.1.1.19. Ion pump power supply								-	-	-	-	-
A3.10.1.1.20. SF-6 supply system								-	-	-	-	-
A3.10.1.1.21. Radar liquid coolant system								-	-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.10.1.2. Replace mission crew compartment line replaceable units												
A3.10.1.2.1. Radar analog enclosure												
A3.10.1.2.1.1. Analog receiver								-	-	-	-	-
A3.10.1.2.1.2. STALO group								-	-	-	-	-
A3.10.1.2.1.3. Synchronizer								-	-	-	-	-
A3.10.1.2.2. Radar digital enclosure												
A3.10.1.2.2.1. Radar Data Correlator	*							-	-	B	-	-
A3.10.1.2.2.2. Digital Data Processor								-	-	-	-	-
A3.10.1.2.3. Maritime enclosure								-	-	-	-	-
A3.10.1.2.4. Radar Control and Maintenance Panel (RCMP)								-	-	-	-	-
A3.10.1.2.5. Dehydrator								-	-	-	-	-
A3.10.1.2.6. High power microwave assembly								-	-	-	-	-
A3.10.1.3. Replace antenna pedestal line replaceable units TR: TO 1E-3A-43-2-93-3												
A3.10.1.3.1. RF manifold								-	-	-	-	-
A3.10.1.3.2. Phase shifter driver unit								-	-	-	-	-
A3.10.1.3.3. Microwave receiver								-	-	-	-	-
A3.10.1.3.4. Phase shifter control unit								-	-	-	-	-
A3.10.1.3.5. Thermal stabilization unit								-	-	-	-	-
A3.10.1.3.6. Rotary joint								-	-	-	-	-
A3.10.1.3.7. Waveguide								-	-	B	-	-
A3.10.1.4. Replace Interrogator Systems LRUs TR: TO 1E-3A-43-2-93-2												
A3.10.1.4.1. Receiver Transmitter								-	-	-	-	-
A3.10.1.4.2. Radar target data processor								-	-	-	-	-
A3.10.1.4.3. Power supply								-	-	-	-	-
A3.10.1.4.4. Interrogator Computer								-	-	-	-	-
A3.10.1.4.5. Antenna group												
A3.10.1.4.5.1. Control								-	-	-	-	-
A3.10.1.4.5.2. Drive								-	-	-	-	-
A3.10.1.4.5.3. Power divider								-	-	-	-	-
A3.10.1.4.6. Transmission line switch								-	-	-	-	-
A3.10.1.5. Service SF-6 system TR: TO 1E-3A-43-2-93-3								-	-	-	-	-
A3.10.1.6. Service antenna pedestal environmental systems TR: TO 1E-3A-43-2-93-3								-	-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.10.2. JSTARS Surveillance System TR: TOs 1E-8C-2-99JG-10-1, 1E-8C-2-99JG-10-2, 1E-8C-2-99JG-20-1, 1E-8C-2-99JG-20-2, 1E-8C-2-99JG-30-1, and 1E-8C-2-99JG-70-Series TOs												
A3.10.2.1. Replace Data Processing Subsystem Line replaceable units/Shop replaceable units(LRU/SRU)												
A3.10.2.1.1. Operation and Control Subsystem								#1b	-	-	-	-
A3.10.2.1.2. Prime Mission Equipment Control Panel								-	-	-	-	-
A3.10.2.1.3. Versatile Media Mass Memory								-	-	-	-	-
A3.10.2.1.4. System Junction Boxes								#1b	-	-	-	-
A3.10.2.1.5. Removable Transportable Memory Module								#1b	-	-	-	-
A3.10.2.2. Replace Data Display Subsystem LRU/SRU												
A3.10.2.2.1. Display Unit								-	-	-	-	-
A3.10.2.2.2. Advanced Digital Data Processor								-	-	-	-	-
A3.10.2.2.3. Replace Data Entry Device								#1b	-	-	-	-
A3.10.2.2.4. Local Area Network Transceiver								-	-	-	-	-
A3.10.2.2.5. Replace Operator Work Station Embedded Disk								#1b	-	-	-	-
A3.10.2.2.6. Data Couplers								-	-	-	-	-
A3.10.2.3. Replace Radar Subsystem LRU/SRU												
A3.10.2.3.1. Antenna Group								-	-	-	-	-
A3.10.2.3.2. Receiver Processor Group								#1b	-	-	-	-
A3.10.2.3.3. Transmitters								#1b	-	-	-	-
A3.10.2.3.4. Exciter								-	-	-	-	-
A3.10.2.3.5. High Power Combiner								-	-	-	-	-
A3.10.2.3.6. Radar Control Unit								#1b	-	-	-	-
A3.10.2.3.7. Inertial Measurement Group								-	-	-	-	-
A3.11. INTERMEDIATE MAINTENANCE												
A3.11.1. Bench check interrogator LRU TR: TOs 1E-3A-43-2-93-2, 12P4-2A-122												
A3.11.1.1. Receiver-Transmitter								-	-	-	-	-
A3.11.1.2. ISLS SW								-	-	-	-	-
A3.11.1.3. Low Voltage Power Supply (LVPS)								-	-	-	-	-
A3.11.1.4. Video processor								-	-	-	-	-
A3.11.1.5. Antenna control								-	-	-	-	-
A3.11.1.6. Antenna drive								-	-	-	-	-
A3.11.1.7. Power dividers								-	-	-	-	-
A3.11.1.8. RF detector								-	-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.11.1.9. Transmission line switch								-	-	-	-	-
A3.11.2. Repair Interrogator LRUs TR: TOs 12P4-2A-122-1, -122, -183												
A3.11.2.1. Receiver-Transmitter								-	-	-	-	-
A3.11.2.2. Antenna control								-	-	-	-	-
A3.11.2.3. Antenna drive								-	-	-	-	-
A3.11.2.4. ISLS switch								-	-	-	-	-
A3.11.2.5. Low voltage power supply								-	-	-	-	-
A3.11.2.6. Transmitter plate								-	-	-	-	-
A3.11.3. Special Support Equipment												
A3.11.3.1. Principles of operation												
A3.11.3.1.1. Digital data control (FFT) TR: TO 33D7-86-15-1								-	-	-	-	-
A3.11.3.1.2. Radar digital computer Test set (PMCU) TR: TO 33D7-3-179-1								-	-	-	-	-
A3.11.3.1.3. Spectrum Analyzer TR: TOs 33D7-10-147-1, 33D7-10-154-1								-	-	-	-	-
A3.11.3.1.4. Analog receiver test set(RIB) TR: TO 33D7-17-60-1								-	-	-	-	-
A3.11.3.1.5. Multiplexer Data Display (MDD) TR: TO 33D7-44-227-1								-	-	-	-	-
A3.11.3.1.6. Radar test set AN/APM-401 TR: TOs 33D7-36-35-1, 33D7-36-35-1-1								-	-	-	-	-
A3.11.3.1.7. PROM Programmer TR: TBD								-	-	-	-	-
A3.11.3.1.8. Antenna control drive test AN/APM402 TR: TOs 33D7-47-55-1, 1E-3A-43-2-93-2								-	-	-	-	-
A3.11.3.2. Isolate malfunctions												
A3.11.3.2.1. Digital data control (FFT) TR: TO 33D7-86-15-1								-	-	-	-	-
A3.11.3.2.2. Radar digital computer test set (PMCU) TR: TO 33D7-3-179-1								-	-	-	-	-
A3.11.3.2.3. Spectrum analyzer TR: TOs 33D7-10-147-1, 33D7-10-154-1								-	-	-	-	-
A3.11.3.2.4. Analog receiver test set (RIB) TR: TO 33D7-17-60-1								-	-	-	-	-
A3.11.3.2.5. Multiplexer Data Display (MDD) TR: TO 33D7-44-227-1								-	-	-	-	-
A3.11.3.2.6. Radar test set AN/APM-401 TR: TO 33D7-36-35-1, 33D7-36-35-1-1								-	-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A3.11.3.2.7. PROM Programmer TR: TBD								-	-	-	-	-
A3.11.3.2.8. Antenna control drive test set AN/APM402 TR: TOs 33D7-47-55-1, 1E-3A-43-2-93-2								-	-	-	-	-
A3.11.4. Build up Klystron and Solenoid Assembly TR: TO 12P2-2APY1-2-1								-	A	-	-	-

SUMMARY OF CHANGES

Major changes included addition of training on Hazardous Materials, Environmental impacts associated with the job, Aircraft Support Systems, and Memory Chip Programmers. JSTARS (E-8) specific tasks/knowledge were added to support the fielding of the E-8. Three-level training consists of two AFSC awarding courses. All students will receive training in common areas and the specific course to support their first assignment. Five-level CDC requirements were revised and expanded to include JSTARS. Seven-level CDC and in-residence course requirements were added. Core tasks were identified that required certification before upgrade to the 5- and 7-level can be awarded.

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
ELECTRONIC FUNDAMENTALS/APPLICATIONS NOTE 1: This attachment identifies the Air Force standardized Electronic Fundamentals and Applications requirements. NOTE 2: Items identified with a "-" will not be taught in the Common Electronic Training Program (CETP); items in parenthesis ( ) are completed in the sets portion of the course. NOTE 3: Items in column 1 marked with an asterisk (*) are task/knowledge items that are trained in resident wartime courses. NOTE 4: Asterisks in column 2A and 2B indicate minimum mandatory requirements for upgrade to the applicable skill level. Items identified with an */R are optional for AFRES and ANG.												
*A4.1. BASIC TERMS TR: TOs 31-1-141-2, 31-1-141-5												
A4.1.1. Metric notation												
A4.1.1.1. Electrical prefixes								B	-	-	-	-
A4.1.1.2. Powers of ten (scientific notation)								B	-	-	-	-
A4.1.2. DC terms								B	-	-	-	-
A4.1.3. AC terms								B	-	-	-	-
*A4.2. BASIC CIRCUITS TR: TOs 31-1-141-2 & 31-1-141-9												
A4.2.1. Theory of operation								B	-	-	-	-
A4.2.2. Troubleshoot circuits								2b	-	-	-	-
*A4.3. BASIC CIRCUIT CALCULATIONS TR: TO 31-1-141-5												
A4.3.1. DC								B	-	-	-	-
A4.3.2. AC								B	-	-	-	-
*A4.4. RESISTORS TR: TOs 31-1-141-2, 31-1-141-15												
A4.4.1 Theory of operation								B	-	-	-	-
A4.4.2. Troubleshoot resistors								2b	-	-	-	-
A4.4.3. Color code								B	-	-	-	-
*A4.5. RELAYS AND SOLENOIDS TR: TOs 31-1-141-2, 31-1-141-3												
A4.5.1. Relay theory of operation								B	-	-	-	-
A4.5.2. Troubleshoot relays								2b	-	-	-	-
A4.5.3. Solenoid theory of operation								B	-	-	-	-
A4.5.4. Troubleshoot solenoids								-	-	-	-	-
*A4.6. INDUCTORS TR: TOs 31-1-141-2, 31-1-141-15												
A4.6.1. Theory of operation								B	-	-	-	-
A4.6.2. Troubleshoot inductors								2b	-	-	-	-
A4.6.3. Calculations								B	-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
*A4.7. CAPACITORS TR: TOs 31-1-141-2, 31-1-141-5, 31-1-141-15												
A4.7.1. Theory of operation								B	-	-	-	-
A4.7.2. Troubleshoot capacitors								2b	-	-	-	-
A4.7.3. Calculations								B	-	-	-	-
A4.7.4. Color code								-	-	-	-	-
*A4.8. TRANSFORMERS TR: TOs 31-1-141-2, 31-1-141-5, 31-1-141-15												
A4.8.1. Theory of operation								B	-	-	-	-
A4.8.2. Troubleshoot transformers								2b	-	-	-	-
A4.8.3. Calculations								B	-	-	-	-
*A4.9. THREE PHASE TRANSFORMERS TR: TOs 31-1-141-2, 31-1-141-15												
A4.9.1. Theory of operation								B	-	-	-	-
A4.9.2. Troubleshoot three phase transformers								-	-	-	-	-
*A4.10. DC MOTORS TR: TOs 31-1-141-2, 31-1-141-9												
A4.10.1. Theory of operation								B	-	-	-	-
A4.10.2. Troubleshoot DC motors								-	-	-	-	-
*A4.11. AC MOTORS TR: TOs 31-1-141-2, 31-1-141-9												
A4.11.1. Theory of operation								B	-	-	-	-
A4.11.2. Troubleshoot AC motors								-	-	-	-	-
*A4.12. DC GENERATORS TR: TOs 31-1-141-2, 31-1-141-9, 31-1-141-13												
A4.12.1. Theory of operation								B	-	-	-	-
A4.12.2. Troubleshoot DC generators								-	-	-	-	-
*A4.13. AC GENERATORS TR: TOs 31-1-141-2, 31-1-141-9, 31-1-141-13												
A4.13.1. Theory of operation								B	-	-	-	-
A4.13.2. Troubleshoot AC generators								-	-	-	-	-
A4.14. ALTERNATORS TR: TOs 31-1-141-2, 31-1-141-9												
A4.14.1. Theory of operation								-	-	-	-	-
A4.14.2. Troubleshoot alternators								-	-	-	-	-
*A4.15. SYNCHRO/SERVOS TR: TOs 31-1-141-2, 31-1-141-9												
A4.15.1. Theory of operation								B	-	-	-	-
A4.15.2. Troubleshoot synchro/servo								-	-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A4.16. CHOPPERS (SYNCHRONOUS VIBRATORS) TR: TO 31-1-141-2												
A4.16.1. Theory of operation								-	-	-	-	-
A4.16.2. Troubleshoot choppers								-	-	-	-	-
*A4.17. TRANSDUCERS TR: TOs 31-1-141-3, 31-1-141-13												
A4.17.1. Theory of operation								B	-	-	-	-
A4.17.2. Troubleshoot transducers								-	-	-	-	-
*A4.18. METER MOVEMENTS TR: TOs 31-1-141-2, 31-1-141-7, 31-1-141-14C												
A4.18.1. Theory of operation								B	-	-	-	-
A4.18.2. Troubleshoot meter movement								-	-	-	-	-
*A4.19. SOLID STATE DIODES TR: TOs 31-1-141-4, 31-1-141-15												
A4.19.1. Theory of operation								B	-	-	-	-
A4.19.2. Troubleshoot solid state diodes								2b	-	-	-	-
A4.19.3. Specifications								-	-	-	-	-
A4.19.4. Color code								-	-	-	-	-
*A4.20. BIPOLAR JUNCTION TRANSISTORS TR: TO 31-1-141-4												
A4.20.1. Theory of operation								B	-	-	-	-
A4.20.2. Troubleshoot transistors								2b	-	-	-	-
A4.20.3. Specifications								-	-	-	-	-
*A4.21. INTEGRATED CIRCUITS TR: TO 31-1-141-4												
A4.21.1. Familiarization								B	-	-	-	-
A4.21.2. Troubleshoot integrated circuits								2b	-	-	-	-
A4.21.3. Specifications								-	-	-	-	-
*A4.22. SOLID STATE SPECIAL PURPOSE DEVICES TR: TO 31-1-141-4												
A4.22.1. Theory of operation												
A4.22.1.1. Silicon controlled rectifier (SCR)								B	-	-	-	-
A4.22.1.2. Zener diode								B	-	-	-	-
A4.22.1.3. Tunnel diode								B	-	-	-	-
A4.22.1.4. Light emitting diode (LED)								B	-	-	-	-
A4.22.1.5. Liquid crystal diode (LCD)								B	-	-	-	-
A4.22.1.6. Unijunction transistor (UJT)								B	-	-	-	-
A4.22.1.7. Junction field effect transistor (JFET)								B	-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A4.22.1.8. Metal oxide semiconductor field effect transistor (MOSFET)								B	-	-	-	-
A4.22.1.9. Positive intrinsic negative (PIN) diode								B	-	-	-	-
A4.22.1.10. Varactor								B	-	-	-	-
A4.22.2. Troubleshoot special purpose devices								2b	-	-	-	-
*A4.23. ELECTRON TUBES TR: TOs 31-1-141-1, 31-1-141-3, 31-1-141-9												
A4.23.1. Theory of operation								B	-	-	-	-
A4.23.2. Troubleshoot electron tubes								-	-	-	-	-
A4.23.3. Specifications								-	-	-	-	-
*A4.24. CATHODE RAY TUBES TR: TOs 31-1-141-1, 31-1-141-3												
A4.24.1. Theory of operation								B	-	-	-	-
A4.24.2. Troubleshoot cathode ray tubes								-	-	-	-	-
*A4.25. SOLDER AND DESOLDER TR: TOs 00-25-234, 1-1A-14, 31-1-141-15												
A4.25.1. Terminal connections												
A4.25.1.1. Terminal connections with assistance								2b	-	-	-	-
A4.25.1.2. Terminal connections without assistance (solder only)								3c	-	-	-	-
A4.25.2. Printed Circuit Boards (PCB)												
A4.25.2.1. PCB with assistance								2b	-	-	-	-
A4.25.2.2. PCB without assistance (solder only)								3c	-	-	-	-
A4.25.3. Multipin connectors												
A4.25.3.1. Multipin connectors with assistance								2b	-	-	-	-
A4.25.3.2. Multipin connectors without assistance (solder only)								3c	-	-	-	-
A4.25.4. Coaxial connectors												
A4.25.4.1. Coaxial connectors with assistance								2b	-	-	-	-
A4.25.4.2. Coaxial connectors without assistance (solder only)								3c	-	-	-	-
*A4.26. ASSEMBLE SOLDERLESS CONNECTORS TR: TOs 1-1A-14 and 31-1-141-15												
A4.26.1. Crimp connections								2b	-	-	-	-
A4.26.2. Coaxial connectors								2b	-	-	-	-
A4.26.3. Multipin connectors								2b	-	-	-	-
*A4.27. USE TEST EQUIPMENT TR: TOs 31-1-141-1, 31-1-141-7, 31-1-141-8, 31-1-141-9												
A4.27.1. Analog multimeter	*							2b	-	B	-	-
A4.27.2. Oscilloscope	*							2b	-	B	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A4.27.3. Signal generator								-	-	-	-	-
A4.27.4. Frequency counter								-	-	B	-	-
A4.27.5. Spectrum analyzer								-	-	B	-	-
A4.27.6. Field strength tester								-	-	-	-	-
A4.27.7. Digital multimeter	*							2b	-	B	-	-
A4.27.8. Digital logic probe								2b	-	-	-	-
A4.27.9. Capacitor Tester								-	-	-	-	-
A4.27.10. Capacitor substitution box								-	-	-	-	-
A4.27.11. DC restorer								-	-	-	-	-
A4.27.12. Logic current tracer								2b	-	-	-	-
A4.27.13. Tube tester								-	-	-	-	-
A4.27.14. Logic pulser								2b	-	-	-	-
A4.27.15. Logic analyzer								-	-	-	-	B
A4.27.16. Signature Analyzer								2b	-	-	-	-
A4.27.17. Reflectometer	*							-	-	B	-	-
*A4.28. TRANSISTOR AMPLIFIER CIRCUITS TR: TOs 31-1-141-1, 31-1-141-4												
A4.28.1. Theory of operation												
A4.28.1.1. Amplifier circuits								B	-	-	-	-
A4.28.1.2. Stabilization circuits								B	-	-	-	-
A4.28.1.3. Coupling circuits								B	-	-	-	-
A4.28.2. Troubleshoot amplifier circuits								2b	-	-	-	-
*A4.29. ELECTRON TUBE AMPLIFIERS TR: TO 31-1-141-3												
A4.29.1. Theory of operation								B	-	-	-	-
A4.29.2. Troubleshoot tube amplifiers								-	-	-	-	-
*A4.30. OPERATIONAL AMPLIFIERS TR: TO 31-1-141-3												
A4.30.1. Theory of operation								B	-	-	-	-
A4.30.2. Troubleshoot operational amplifiers								-	-	-	-	-
A4.31. MAGNETIC AMPLIFIERS TR: 31-1-141-4												
A4.31.1. Theory of operation								-	-	-	-	-
A4.31.2. Troubleshoot magnetic amplifiers								-	-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A4.32. SATURABLE REACTORS TR: 31-1-141-4												
A4.32.1. Theory of operation								-	-	-	-	-
A4.32.2. Troubleshoot saturable reactors								-	-	-	-	-
*A4.33. POWER SUPPLY CIRCUITS TR: TOs 31-1-141-3, 31-1-141-4, 31-1-141-9, 31-1-141-15												
A4.33.1. Theory of operation												
A4.33.1.1. Rectifiers								B	-	-	-	-
A4.33.1.2. Filters								B	-	-	-	-
A4.33.2. Troubleshoot power supplies								2b	-	-	-	-
*A4.34. VOLTAGE REGULATORS TR: TOs 31-1-141-3, 31-1-141-4												
A4.34.1. Theory of operation								B	-	-	-	-
A4.34.2. Troubleshoot voltage regulators								2b	-	-	-	-
*A4.35. RESISTIVE-CAPACITIVE-INDUCTIVE (RCL) CIRCUITS TR: TOs 31-1-141-2, 31-1-141-5												
A4.35.1. Basic operation								B	-	-	-	-
A4.35.2. Resonant operation								B	-	-	-	-
A4.35.3. Troubleshoot RCL circuits								2b	-	-	-	-
A4.35.4. Calculations								B	-	-	-	-
*A4.36. FREQUENCY SENSITIVE FILTERS TR: TO 31-1-141-2												
A4.36.1. Theory of operation								B	-	-	-	-
A4.36.2. Troubleshoot frequency sensitive filters								2b	-	-	-	-
A4.36.3. Calculations								-	-	-	-	-
*A4.37. WAVE GENERATING CIRCUITS TR: TOs 31-1-141-3, 31-1-141-4, 31-1-141-10												
A4.37.1. Theory of operation												
A4.37.1.1. Oscillators								B	-	-	-	-
A4.37.1.2. Multivibrators								B	-	-	-	-
A4.37.1.3. Waveshaping circuits								B	-	-	-	-
A4.37.2. Troubleshoot wave generating circuits								2b	-	-	-	-
*A4.38. LIMITER CIRCUITS TR: TO 31-1-141-4												
A4.38.1. Theory of operation												
A4.38.1.1. Diode								B	-	-	-	-
A4.38.1.2. Zener diode								B	-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A4.38.1.3. Transistor								B	-	-	-	-
A4.38.2. Troubleshoot limiter circuits								-	-	-	-	-
*A4.39. CLAMPER CIRCUITS TR: TO 31-1-141-4												
A4.39.1. Theory of operation								B	-	-	-	-
A4.39.2. Troubleshoot clamper circuits								-	-	-	-	-
*A4.40. DIGITAL NUMBERING SYSTEMS TR: TO 31-1-141-5												
A4.40.1. Conversions												
A4.40.1.1. Binary								B	-	B	-	-
A4.40.1.2. Octal								B	-	B	-	-
A4.40.1.3. Hexadecimal								B	-	B	-	-
A4.40.2. Math operations												
A4.40.2.1. Binary								B	-	B	-	
A4.40.2.2. Octal								B	-	B	-	
A4.40.2.3. Hexadecimal								B	-	B	-	-
A4.40.3. Binary code systems								B	-	-	-	-
*A4.41. DIGITAL LOGIC FUNCTIONS TR: TOs 31-1-141-4, 31-1-141-5												
A4.41.1. Theory of operation												
A4.41.1.1. Main logic gates								B	-	A	-	B
A4.41.1.2. Flip-flops								B	-	A	-	B
A4.41.2. Troubleshoot digital logic circuits								2b	-	A	-	-
A4.41.3. Logic families								B	-	B	-	-
A4.42. BOOLEAN EQUATIONS TR: TO 31-1-141-5												
A4.42.1. Diagram to equation								-	-	-	-	-
A4.42.2. Equation to diagram								-	-	-	-	-
A4.42.3. Simplify equations								-	-	-	-	-
*A4.43. COMPUTERS TR: TOs 31-1-141-6c, 31-1-141-9												
A4.43.1. Operation principles								B	-	B	-	-
A4.43.2. Load programs								-	-	-	-	-
A4.43.3. Write and debug programs								-	-	-	-	-
A4.43.4. Programming languages								-	-	-	-	-
A4.43.5. Troubleshoot computer subassemblies or circuits								2b	-	-	-	-
A4.43.6. Types of memories								B	-	B	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
A4.43.7. Peripheral devices								B	-	-	-	-
*A4.44. MICROPROCESSOR CONTROLLED SYSTEMS TR: TO 31-1-141-6C												
A4.44.1. Basic (universal) microprocessor theory of operation								B	-	B	-	-
A4.44.2. 8085 (specific) microprocessor												
A4.44.2.1. Theory of operation								B	-	-	-	-
A4.44.2.2. Troubleshoot microprocessors								2b	-	-	-	-
*A4.45. LOGIC CIRCUITS TR: TOs 31-1-141-5, 31-1-141-13												
A4.45.1. Theory of operation												
A4.45.1.1. Counters								B	-	-	-	-
A4.45.1.2. Registers								B	-	-	-	B
A4.45.1.3. Combinational logic circuits								B	-	-	-	-
A4.45.2. Troubleshoot logic (combinational) circuits								2b	-	-	-	-
*A4.46. DIGITAL TO ANALOG (D/A) AND ANALOG TO DIGITAL (A/D) CONVERTERS TR: TO 31-1-141-13												
A4.46.1. Theory of operation												
A4.46.1.1. Weighted Resistor D/A								B	-	B	-	-
A4.46.1.2. Approximation A/D								B	-	B	-	-
A4.46.1.3. Ramp A/D								B	-	B	-	-
A4.46.2. Troubleshoot converters								-	-	-	-	-
*A4.47. TRANSMISSION LINES TR: TOs 31-1-141-7, 31-1-141-8, 31-1-141-9, 31-1-141-13												
A4.47.1. Theory of operation								B	-	B	-	-
A4.47.2. Perform measurement								-	-	-	-	-
A4.47.3. Calculations								-	-	-	-	-
A4.47.4. Troubleshoot transmission lines								-	-	-	-	-
*A4.48. WAVEGUIDES TR: TOs 31-1-141-9, 31-1-141-11												
A4.48.1. Theory of operation								B	-	-	-	-
A4.48.2. Troubleshoot waveguides								-	-	-	-	-
*A4.49. MICROWAVE OSCILLATORS AND AMPLIFIERS TR: TOs 31-1-141-3, 31-1-141-10, 31-1-141-11												
A4.49.1. Theory of operation								B	-	-	-	-
A4.49.2. Tune or adjust								-	-	-	-	-
A4.49.3. Troubleshoot microwave oscillators or amplifiers								-	-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
*A4.50. RESONANT CAVITIES TR: TOs 31-1-141-3, 31-1-141-9, 31-1-141-11												
A4.50.1. Theory of operation								B	-	-	-	-
A4.50.2. Troubleshoot resonant cavities								-	-	-	-	-
A4.50.3. Tune and adjust								-	-	-	-	-
*A4.51. TRANSMITTERS TR: TOs 31-1-141-4, 31-1-141-9, 31-1-141-13												
A4.51.1. Theory of operation												
A4.51.1.1. Amplitude modulation (AM)								B	-	-	-	-
A4.51.1.2. Frequency modulation (FM)								B	-	-	-	-
A4.51.1.3. Single side band (SSB)								B	-	-	-	-
A4.51.1.4. Pulse modulation (PM)								B	-	-	-	-
A4.51.2. Troubleshoot transmitters								-	-	-	-	-
*A4.52. RECEIVERS TR: TOs 31-1-141-4, 31-1-141-9, 31-1-141-13												
A4.52.1. Theory of operation												
A4.52.1.1. Amplitude modulation (AM)								B	-	-	-	-
A4.52.1.2. Frequency modulation (FM)								B	-	-	-	-
A4.52.1.3. Single side band (SSB)								B	-	-	-	-
A4.52.1.4. Pulse modulation (PM)								B	-	-	-	-
A4.52.2. Troubleshoot receivers								-	-	-	-	-
A4.53. TRANSMISSION POWER TR: TOs 31-1-141-7, 31-1-141-8, 31-1-141-11												
A4.53.1. Perform measurements								-	-	-	-	-
A4.53.2. Calculations								-	-	-	-	-
*A4.54. ANTENNAS TR: TO 31-1-141-12												
A4.54.1. Theory of operation								B	-	-	-	-
A4.54.2. Perform alignment								-	-	-	-	-
A4.54.3. Troubleshoot antenna								-	-	-	-	-
A4.55. MICROPHONES TR: TO 31-1-141-3												
A4.55.1. Theory of operation								-	-	-	-	-
A4.55.2. Troubleshoot microphones								-	-	-	-	-
A4.56. SPEAKERS TR: TO 31-1-141-3												
A4.56.1. Theory of operation								-	-	-	-	-
A4.56.2. Troubleshoot speakers								-	-	-	-	-

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. CORE TASK		3. CERTIFICATION FOR OJT					4. PROFICIENCY CODES USED TO INDICATE TRAINING/ INFORMATION PROVIDED				
	A	B	A	B	C	D	E	A 3 SKILL LEVEL	B 5 SKILL LEVEL		C 7 SKILL LEVEL	
	5	7	START DATE	COMPLETION DATE	TRAINEE INITIALS	TRAINER INITIALS	CERTIFYING OFFICIAL	(1) Course	(1) Course	(2) CDC	(1) Course	(2) CDC
*A4.57. PHOTOSENSITIVE DEVICES TR: TOs 31-1-141-3, 31-1-141-4												
A4.57.1. Theory of operation								B	-	-	-	-
A4.57.2. Troubleshoot photosensitive devices								-	-	-	-	-
A4.58. DISPLAY TUBES TR: TO 31-1-141-3												
A4.58.1. Theory of operation								-	-	-	-	-
A4.58.2. Troubleshoot display tubes								-	-	-	-	-
*A4.59. SUPPORT SUBJECTS TR: TOs 31-1-141-1 and 00-25-234												
A4.59.1. Safety applicable to electronics								B	-	B	-	-
A4.59.2. First aid for electrical shock								B	-	B	-	-
A4.59.3. Electrostatic Discharge (ESD) control								B	-	B	-	-
A4.59.4. Electromagnetic effect on electronic equipment								B	-	-	-	-

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 performance progress check.

5. Standard. The minimum 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 are performance and are taught to the "2b" proficiency level which means the students can do most parts of the task, but does need assistance on the hardest parts of the task (partially proficient). The student can also determine step by step procedures for doing the task.

7. Course Objective. The following is an overview of the ASRS, AWACS, and JSTARS 3-and 7-level courses. This overview has been provided to summarize the Specialty Training Standard requirements and to inform supervisors of the course objectives/goals.

7.1. Initial Skills Course:

7.1.1. E3ABR2A134 000 (AWACS Airborne Surveillance Radar System Course). Airmen graduating from the E3ABR2A134 000 Airborne Surveillance Radar System Apprentice course will be able to identify basic facts and terms about the components listed in the 3 level column of the Specialty Training Standard (STS). These comprise the AN/APY-1 and AN/APY-2 Surveillance Radar systems and the AN/APX-103 Interrogator System. The basic facts and terms will include the purpose, operation, signal paths, signal distribution and mission tie-in of the components and systems as a whole. Graduating airmen will have a basic understanding of concepts concerning Built-in Test (BIT), Fault Isolation Test (FIT), manual fault analysis, radar special tests and On-board Test Monitor and Maintenance (OBTM & M). Due to training received on the Radar Maintenance Trainer Set (RMTS), airmen graduates will be able to determine step-by-step procedures and complete all but the hardest parts of the task items listed in the 3 level column of the STS.

7.1.2. E3ABR2A134 100 (JSTARS Airborne Surveillance Radar System Course). Airmen graduating from the E3ABR2A134 100 Airborne Surveillance Radar System Apprentice course will be able to identify basic facts and terms about the components listed in the 3 level column of the Specialty Training Standard (STS) that comprise the E-8C JSTARS Surveillance system. These basic facts and terms will include the purpose, operation, signal paths, signal distribution and mission tie-in of the components and systems as a whole. Graduating airmen will have a basic understanding of concepts concerning Built-in Test (BIT), operational readiness, on-line, background, diagnostic testing, manual fault analysis. Due to training received on the JSTARS PME Trainer Set airmen graduates will be able to determine step-by-step procedures and complete all but the hardest parts of the task items listed in the 3 level column of the STS.

7.2. Advanced Skills Course:

7.2.1. E3ACR2A17X 000 (Avionics Advanced Workcenter Management Course). NCOs graduating from the E3ACR2A17X 000 Avionics Advanced Workcenter Management Course

will be able to describe the principles of, and perform management tasks listed in the 7 level course column of the Specialty Training Standard (STS). The objective of this course is to introduce the new SSgt to the many diverse roles the supervisor plays in the management of the maintenance complex. Individuals will be exposed to a wide area of maintenance supervision and perform all tasks to the satisfaction of the course; however he/she may not be capable of meeting the field requirements for speed and accuracy. This course will cover environmental hazards, supply discipline, supervision of maintenance, training, maintenance management, and the Air Force inspection system.

7.3. Course Objectives. A detailed listing of the initial and advanced skills course objectives may be obtained by submitting a written request to the 2A1X4 Career Field Training Manager, 336TRS/TTKN, 825 Hercules St Suite 212, Keesler AFB MS 39534-2037.

SECTION C - SUPPORT MATERIALS

8. The following list of support materials is not all inclusive; however, it covers the most frequently referenced areas.

COURSE NUMBER	TITLE	OPR
E6AZU2AXXX 000	Core Automated Maintenance Systems (CAMS) Maintenance Data Collection (MDC)	81 TRSS/TTTI 825 Phantom St, Suite 108 Keesler AFB, MS 39534-2064 DSN 597-2985
J6AZU00066 038	Air Force Technical Order System (General)	362 TRS/DOP 613 10th Ave Sheppard AFB, TX 76311-2352 DSN 736-5206
J6AZU00066 039	Air Force Technical Order System (Advanced)	362 TRS/DOP
J6AZU00066 058	Air Force Maintenance Data Collection System (CAMS)	362 TRS/DOP
J6AZU00066 059	Air Force Maintenance Data Collection System (CAMS) (781 Automated Forms)	362 TRS/DOP
J6AZU00066 061	Core Automated Maintenance System (CAMS) Operators Course (Introduction)	362 TRS/DOP
J6AZU00066 062	Core Automated Maintenance System (CAMS) (Mid-Level Maintenance Managers)	362 TRS/DOP

J6AJS3S2X1 000	Task Certifier	360 TRS/TTF 620 9th Ave Sheppard AFB, TX 76311-2334 DSN 736-7096
J6AJS3S2X1 001	Training the Trainer	360 TRS/TTF
L6AZS2E351 013	STP COMSEC Awareness Training	342 TTS/TTSCD 1220 Truemper St, Suite 1 Lackland AFB, TX 78236-5546 DSN 473-2957

SECTION D - TRAINING COURSE INDEX

9. Purpose. This section of the CFETP identifies training courses available for the specialty and shows how the courses are used by each MAJCOM in their career field training programs. Below is a list of available courses for broadening and expanding career field knowledge. Refer to AFCAT 36-2223, USAF Formal Schools Catalog, for more information on AETC courses listed in this index.

10. Air Force In-residence Courses.

COURSE NUMBER	TITLE	OPR
E3AQR30020 010	Electronic Principles (CETP)	338 TRS/TTOT 809 Hercules ST, Suite 101 Keesler AFB MS 39534-2037 DSN 597-5355
E3ABR2A134 000	Airborne Surveillance Radar System Apprentice (AWACS)	336 TRS/TTKN 825 Hercules ST, Suite 211 Keesler AFB, MS 39534-2037 DSN 597-9180
E3ABR2A134 100	Airborne Surveillance Radar System Apprentice (JSTARS)	336 TRS/TTKN
E3ACR2A17X 000	Avionics Advanced Workcenter Management Course (Off/On Equipment)	332 TRS/TDE 613 Hanger Road, Suite 229 Keesler AFB, MS 39534-2037 DSN 597-1971
J4AMF/ASF/AST 2A1X4 000	Radar Introduction	Det 9/CC 7710 1st Ave Tinker AFB, OK 73145 DSN 884-5540

2A1X4 001	AN/APY-1/2 Surveillance Radar RDC/DRR/SYNC	Det 9
2A1X4 002	Advanced Radar Introduction	Det 9
2A1X4 003	Airborne Surveillance Radar Special Test Equipment Operation and Maintenance	Det 9
2A1X4 004	Digital Comp (DDP) CP-1308/APY-1, APY-2	Det 9
2A1X4 005	AN/APX-103 Interrogator System Organizational Maintenance	Det 9
2A1X4 008	AN/APY-1/-2 Antenna Group	Det 9
2A1X4 011	AN/APY-1/-2 Signal Generator Group (STALO)	Det 9
2A1X4 012	AN/APY-1/-2 Transmitter Group	Det 9
2A1X4 022	AN/APY-1/-2 Receiver Group	Det 9

11. Extension Course Institute (ECI) Courses.

COURSE NUMBER	TITLE	OPR
CDC2A154A	Airborne Warning and Control Radar System Apprentice	336 TRS/TTKN 825 Hercules ST, Suite 212 Keesler AFB, MS 39534-2037 DSN 579-0099
CDC2A154B	Airborne Warning and Control Radar/Interrogator System	336 TRS/TTKN

12. Exportable Courses.

COURSE NUMBER	TITLE	OPR
00TVT0000	FOD Prevention	AETC TRSS/TSIM 6058 Aspen Hill AFB, UT 84056-5805 DSN 777-7830
00TVT0001	Safety and Radio Frequency (RF) Radiation	AETC TRSS/TSIM
00TVT0001V1	Troubleshooting Techniques	AETC TRSS/TSIM
00TIV0002	Aerospace Ground Equipment Training	AETC TRSS/TSIM
00TCB0002V1	Multimeter Familiarization	AETC TRSS/TSIM
00TIV0007	Potential Hazards of Oxygen Enriched Environments	AETC TRSS/TSIM
00CIV0008	Use and Care of Type III Torque Wrenches	AETC TRSS/TSIM
00CVT0009	Torque Wrench, Use and Care	AETC TRSS/TSIM
00TVT0011	Cold Weather Indoctrination	AETC TRSS/TSIM
00CVT0012	Manual Aircraft Snow Removal	AETC TRSS/TSIM
00TVT0017V1	General Aircraft Corrosion Control	AETC TRSS/TSIM
00TVTAG05	Use of TM-1800 Landoll Spray Unit	AETC TRSS/TSIM
00TIV1000	Aircraft Marshaling	AETC TRSS/TSIM
00SIV8967	Diesel Split Deck Maintenance Platform Operation	AETC TRSS/TSIM
01SIV8971V5.1.1	A/M32A-86 Diesel Power Unit Operation	AETC TRSS/TSIM
00SIV8972	MA-3D Air Conditioner Operation	AETC TRSS/TSIM

13. Courses Under Development/Revision.

*QTP 2A1X4	Airborne Command and Control Radar Maintenance Training	HQ ACC/LGRC DSN 574-3736

*QTPs have been tentatively identified for development, release date to be determined.

SECTION E - MAJCOM UNIQUE REQUIREMENTS

There are currently no MAJCOM unique requirements. This area is reserved.