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

CFETP RI9S100
Parts I and II
1 June 2012

Reporting Identifier 9S100

Scientific Applications Specialist

CAREER FIELD EDUCATION AND TRAINING PLAN

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RELEASABILITY: There are no releasability restrictions on this publication.

CAREER FIELD EDUCATION AND TRAINING PLAN (CFETP)
SCIENTIFIC APPLICATIONS SPECIALIST
RI 9S100

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OPR: 312th TRS/DOE SPINSTRA Flight
Certified By: HQ USAF/A2DFM (SMSgt Robert LaFontaine)
Supersedes: CFETP RI9S100, 1 January 2008
Pages: 64

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REPORTING IDENTIFIER 9S100
CAREER FIELD EDUCATION AND TRAINING PLAN

Part I

Preface

1. This Career Field Education and Training Plan (CFETP) is a comprehensive education and training document that identifies life-cycle education/training requirements, and training support resources. The CFETP will provide personnel a clear career path to success and will instill rigor in all aspects of career field training. Note: Due to the diversity of the career field no core tasks are identified. Civilians and Senior Noncommissioned Officers occupying associated duty 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 reporting identifier (RI). **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 RI qualifications (knowledge, education, training…); **Section D** indicates resource constraints: some examples are funds, manpower, equipment, facilities; **Section E**, when used, identifies transition training guide requirements.

2.2. **Part II** includes the following: **Section A** identifies the Job Educational Training Standard (JETS) and includes duties, tasks, technical references to support training, Air Education and Training Command (AETC) conducted training, wartime course, and correspondence course requirements; **Section B** contains the course objective list and training standards supervisors will use to determine if airmen satisfied training requirements; **Section C** identifies available support materials. **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 this reporting identifier 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

9S100 RI Manager. An individual on the Headquarters US Air Force (HAF) staff responsible for daily management of the 9S100 RI training, force development, and management programs as delegated by the AFCFM. Responsibilities include coordination with command functional managers, technical training center personnel, and Air Force personnel resource managers. This includes identifying the task requirements and training for an Air Force Specialty or Occupational Series.

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

Air Force Career Field Manager (AFCFM). An individual on the HAF staff who has overall responsibility for all training, development, and management of a career field family (ex. 1NXXX). Responsibilities include coordination with command functional managers, technical training center personnel, and Air Force personnel resource managers. This includes approving task requirements and training for an Air Force Specialty or Occupational Series.

Air Force Institute of Technology (AFIT). Located at Wright-Patterson AFB, Ohio, AFIT is the Air Force's graduate school of engineering and management as well as its institution for technical professional continuing education. A component of Air University, AFIT is committed to providing defense-focused graduate and professional continuing education and research to sustain the technological supremacy of America's air and space forces. The Enlisted to AFIT education program provides enlisted personnel the opportunity for advanced education programs.

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

Air Force Specialty (AFS). A group of duty positions that require common qualifications identified by a title and code. Each AFS is assigned an AFS Code (AFSC), to identify a specific career field and qualification level for Air Force officers and enlisted personnel.

Air Force Specialty Code (AFSC)/Reporting Identifier (RI). A combination of alpha-numeric characters which are used to identify a specific career field and qualification level for Air Force officers and enlisted personnel.

Air Force Specialty Manager (AFSM). An individual on the HQ USAF staff responsible for daily management of a respective Air Force Specialty (AFS), Special Duty Identifier (SDI), or Reporting Identifier (RI) training, force development, and management programs as delegated by the AFCFM. Responsibilities include coordination with command functional managers, technical training center personnel, and Air Force personnel resource managers. This includes identifying the task requirements and training for an Air Force Specialty or Occupational Series.

Bachelor of Science in Intelligence (BSI). The BSI program is a 12-month full time program that affords students who have accumulated three years of undergraduate credits a means of completing their degree requirements from the National Intelligence University located on Bolling AFB. The curriculum consists of nineteen 400 and 500 level courses, including a senior seminar capstone course. This program is open to Air Force active duty, ANG and reserve in the grades of E-5 through E-9 and civilian counterparts.

Career Development Course (CDC). Self-paced, correspondence course published to provide the information necessary to satisfy the career knowledge component of on-the-job training (OJT). These courses are developed from references identified in the CFETP correlating with mandatory knowledge items listed in the Air Force Enlisted Classification Guide. CDCs will contain information on basic principles, techniques, and procedures common to an AFSC. They do not contain information on specific equipment or tasks unless best illustrating a procedure or technique having utility to the entire AFSC.

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.

Chief Enlisted Manager (CEM) Code. A five-digit code ending in 00 to identify CMSgts and CMSgt-selects as top enlisted managers in both highly technical skills and in broad areas of managerial competence. CEM codes are not available to the RI 9S100 career field.

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

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

Exportable Training. Additional training via computer assisted, paper text, interactive video, or other media.

Field Evaluation Questionnaire (FEQ). An extensive survey based on the CFETP to determine how well the formal training met the apprentice levels outlined in the CFETP. This survey is sent approximately 6 months after graduation to the Base Education and Training manager, if unclassified, or direct to the unit training manager, if classified.

Field Technical Training (FTT). Special or regular on-site training conducted by a field training detachment (FTD) at a Formal Training Unit (FTU) or by a mobile training team (MTT).

Graduate Assessment Survey. A four question survey sent via e-mail or hard copy to the Base Education and Training Manager approximately 90 days after graduation to be completed by the

supervisor as a snapshot evaluation of the graduate at the time the trainee is interviewed to determine On the Job Training (OJT) needs. The survey askes for an evaluation of military presence, technical knowledge at the apprentice level in preparation for local OJT, and the supervisor's estimate of how well the CFETP matches the unit mission needs. The fourth question asks if the supervisor has received the graduate's school training report.

Initial Skills Training. A basic, formal, in-residence course leading to the award of a 3-skill level AFSC. For this RI, prepares Airmen for duties based upon the requirements of their specific duty assignment. It is technique-specific modular training.

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.

Job Educational Training Standard (JETS). A comprehensive task list describing skills and knowledge that an airman in the reporting identifier needs to perform the job. The JETS is used by supervisors to document task qualifications. It further serves as a contract between the Air Education and Training Command and the user to show overall training requirements for the 9S100 RI taught in formal schools and correspondence courses.

Job Knowledge Development Course (JKDC). A correspondence course used by RI 9S100 supervisors and trainers to fulfill the knowledge portion of On-the-Job Training (OJT) requirements for follow-on and qualification training.

MAJCOM Functional Manager (MFM). An individual at the MAJCOM/COCOM activity command level who is responsible for identifying task and training requirements for an AFS or Occupational Series and is responsible for validating Intelligence, Surveillance, and Reconnaissance (ISR) requirements, command assignment entitlements, technical school graduate assignments, and matching available manpower resources to meet the MAJCOM's needs.

Masters of Science and Technology Intelligence (MSTI). The MSTI program confers a graduate degree by completing 600 and 700 level courses, plus a master's thesis on a science and technology intelligence related topic from the National Intelligence University located on Bolling AFB. This program is offered on a full-time or part-time basis. This graduate program is open to Air Force active duty, ANG and reserve in the grades of E-5 through E-9, O-2 through O-4, and civilian counterparts.

Master of Science in Strategic Intelligence (MSSI). The MSSI program confers a graduate degree by completing 600 and 700 level courses, plus a master's thesis on an intelligence related topic from the National Intelligence University located on Bolling AFB. This program is offered on a full-time or part-time basis. This graduate program is open to Air Force active duty, ANG and reserve in the grades of E-5 through E-9, O-2 through O-4, and civilian counterparts.

Modular Training. Due to diversification, this RI uses a modular training program located at Goodfellow AFB TX. Students entering the RI receive core knowledge at the Fundamentals course,

and then enter a module for performance skills/knowledge required for their assigned job. This design ensures up-to-date skills and knowledge training that meets mission needs and reduces excess training time. The RI Manager, MFM, and supervisors should review individual records upon notification of assignment to ensure Airmen receive the appropriate training. An individual who is moving to a new mission area or has not worked in a previously qualified mission area (for four years or more) should be considered for the appropriate modular training.

National Intelligence University (NIU). NIU is an accredited academic institution chartered by Congress and the Joint Chiefs of Staff to prepare intelligence, surveillance, and reconnaissance (ISR) professionals for positions at Joint, Air Staff, and MAJCOM levels. This is a center of excellence for educating military and civilian professionals and conducting and disseminating ISR-related research.

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 (for skill level award) and job qualification (duty position certification) training.

Proficiency Training. Additional training (in-residence, exportable advanced training courses, or on-the-job training) provided to personnel to increase their skills and knowledge.

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 in conjunction with advanced knowledge training. 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 other audio-visual media.

Reporting Identifiers (RI). Established primarily to identify conditions or jobs where a specific specialty description is not practical, and are awarded or designated to denote qualification or to report a condition the same way AFSCs are awarded.

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

Special Experience Identifier (SEI). A code used to identify special experience and training not otherwise identified within the military personnel data system (MilPDS). SEIs complement the assignment process but are not substitutes for AFSCs, CEM codes, prefixes, suffixes, SDIs, RIs, personnel processing codes, and professional specialty course codes. They are established when identifying experience or training is critical to the job and person assignment match, and no other identification is appropriate or available.

Specialty Requirements Training Team (STRT)/Utilization and Training Workshop (U&TW). A forum co-chaired by the AFCFM and AF Training Pipeline Manager comprised of MAJCOM Functional Managers, Subject Matter Experts (SMEs), and AETC training personnel that determine education and training requirements and establishes the most effective mix of formal and on-the-job training for each AFSC. The forum will create or revise training standards, and set responsibilities for providing training. As a quality control tool, the STRT/U&TW will be used to ensure the validity and viability of the AFS training that determines career ladder training requirements.

Specialty Training. A mix of formal training (technical school) and informal training (on-the-job) to qualify Airmen in modular qualification and the award of the RI.

Standard. An exact value, or a physical quality, established and defined by authority, custom, or common consent to serve as a reference, model, or rule in measuring quantities or qualities, in order to establish practices or procedures, or to evaluate results.

Task Breakdowns. When planning training for a large task, you need to break the task down into smaller, teachable units that will provide for a number of successes for the trainee and is short enough to complete in one session. Some tasks take several days or weeks to complete; therefore you will need to be able to teach it in several sessions.

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

Task-Oriented Training (TOT). Advanced training that emphasizes hands-on practice with the applicable equipment and performance of maintenance tasks.

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

Test Control Officers (TCOs). Individual assigned the responsibility for controlling and safeguarding all test materials, schedules and proctoring.

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

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

Wartime Skills. Wartime skills/tasks training are initiated based upon a national emergency. These wartime skills are identified by the letter "w" in the 3-level position of the STS and will be taught at

an accelerated course at Goodfellow AFB while the trainee is going through technical training school.

Section A - General Information

1. Purpose. This CFETP provides information for the AFCFM, RI Manager, MFMs, commanders, training managers, supervisors and trainers to plan, develop, manage, and conduct an effective career field training program. This plan outlines the training individuals in this RI should receive in order to develop and progress throughout their career. This plan identifies initial skills, qualification, advanced, and proficiency training. Initial skills training is the RI specific training an individual receives upon entry into the Air Force or upon retraining into this RI. Normally, this training is conducted by AETC at one of the technical training centers. Qualification training is actual hands-on task performance training designed to qualify an Airman in a specific duty position. 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. 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 in the specialty and recommends education/training throughout each phase of an individual's career.

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

1.4. Identifies major resource constraints impacting full implementation of the desired career path 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 RI.

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 and RI Manager 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 and proficiency requirements. Identified requirements can be satisfied by OJT, resident training, contract training, or exportable courses. MAJCOM-developed training to support this RI must be identified for inclusion into this 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. The RI Manager, MAJCOM representatives, and AETC training personnel will identify and coordinate on the career field training requirements. The AETC training manager for this RI 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, AETC will eliminate duplicate training.

Section B – Information and Career Progression

4. Report Identifier Description

4.1. Reporting Identifier Summary. Applies leading edge physical sciences to perform data collection, analysis, observation, study, experimentation, acquisition, maintenance, research and development, fielding of prototype and operational, active and passive sensors and systems on (including, but not limited to) specialized geophysical, nuclear radiation, chemical, electro-optic, radio-frequency, infrared, radar, and rapidly deployable and fixed airborne collection platforms; and process and analyze scientific data; derive, develop, integrate, and report information to customers. Related DoD Occupational Subgroup: 119100.

4.2. Utilization of the RI. The RI 9S100, Scientific Applications Specialist is used to support many different roles across National, Joint, and Air Force mission areas. These specialists bring unique scientific education, aptitude, and critical perspectives to solving complex technological and analytical problems. 9S100s are typically employed in positions where indepth knowledge and application of physical science is required to perform analysis, operations, R&D, or maintenance procedures necessary to support systems currently employed or advance current technological systems and techniques.

5. Skill/Career Progression. The 9S100 career field is designated a Reporting Identifier due to the the unique requirements for managing it and the diversity of duties associated with it. Therefore, this CFETP does not utilize "skill level" progression. Instead this CFETP uses two catagories of training: **Initial training** and **Qualification training.**

5.1. **Scientific Applications Specialist Duties and Responsibilities.** NOTE: The RI is not limited to performing only these duties, evolving mission requirements and classifications prohibit the listing of all possible duties. This is a guide as to what duties and responsibilities 9S100 personnel should be typically performing at each grade.

5.1.1. <u>A1C</u>

A1Cs are expected to master basic RI activities such as: assisting with installing equipment and systems; perform preventive maintenance routines; maintain, repair, modify, and operate equipment and systems; perform analysis, data interpretation, and reporting of various sensor data formats. Work at becoming skilled in the coordination, planning, management, and utilization of available resources. Acquire the aptitude needed to brief senior government, civilian, and military officials

and respond to queries from government officials. Increase competence with data collection and analysis efforts of sensor systems. Identify operational trends and problem areas. Provide support in cause identification and resolution. Assist with developing and enforcing safety standards.

5.1.2. SrA

SrA are expected to perform basic RI activities such as: installing equipment and systems; perform preventive maintenance routines; maintain, repair, modify, and operate equipment and systems; perform analysis, data interpretation, and reporting of various sensor data formats. Be able to coordinate, plan, and manage utilization of available resources. Be able to brief senior government, civilian, and military officials and respond to queries from government officials. Direct data collection and analysis efforts of sensor systems. Identify operational trends and problem areas. Assist in cause identification and resolution. Develop and enforce safety standards.

5.1.3. SSgt

SSgts are primarily highly skilled technicians with supervisory and training responsibilities. They install, operate, and maintain mission equipment and systems. They also perform and supervise analysis, interpretation, and reporting on a variety of sensor data. SSgts may also identify operational trends and problem areas and assist in cause identification and resolution. SSgts must strive for greater supervisory competence and should be given opportunities to demonstrate leadership. They are responsible for the effective accomplishment of all assigned tasks through the proper and effective use of all personnel and material under their control. SSgts typically control work force activities and are directly responsible for enlisted specialty training programs. They ensure proper assignment and availability of personnel as well as establish work standards, methods, and controls. Finally, SSgts develop and enforce safety standards.

5.1.4. TSgt

TSgts are often the technical experts within their mission area and are relied upon for sound supervision and training. TSgts are responsible for achieving maximum performance from each subordinate and ensure the mission is efficiently and effectively accomplished. They are often first line supervisors and direct workcenter activities including maintenance, data collection, and analysis efforts of sensor systems. TSgts must continue to perfect their technical skills and supervisory techniques. They typically perform and supervise equipment and systems installations, preventive maintenance routines, system maintenance, repairs, modifications, and frequently operate equipment and systems. TSgts supervise analysis, interpretation, and reporting of sensor data and are responsible for directing work force activities. They manage enlisted specialty training programs and ensure proper assignment and availability of personnel. TSgts establish work standards, methods, and controls. Develops and enforces safety standards.

5.1.5. MSgt

MSgts have significantly increased responsibilities which requires a broad technical and managerial perspective. Performs and supervises RI activities. Installs and supervises equipment and systems. Performs and supervises preventive maintenance routines. Maintains, repairs, modifies, and operates equipment and systems. Supervises analysis, interpretation, and reporting of sensor data. Manages RI activities. Coordinates, plans, and manages utilization of available resources. Develops and implements internal guidance, instructions, and policy. Administers and manages support

agreements. Coordinates and advises on mission directives and requirements. Directs work force activities. Briefs senior government, civilian, and military officials. Responds to queries from government officials. Directs data collection and analysis efforts of sensor systems. Coordinates between US national-level agencies, cabinet-level/host-government officials, Joint, and HQ USAF for sustaining personnel support, financial management, administration, operations, maintenance, communications, and logistics. Identifies operational trends and problem areas and assists in cause identification and resolution. Manages enlisted specialty training programs. Ensures proper assignment and availability of personnel. Establishes work standards, methods, and controls. Develops and enforces safety standards.

5.1.6. SMSgt

SMSgts bring key institutional, operational, and functional expertise as well as strong leadership skills to their organizations and all assigned tasks. They lead and manage teams to accomplish a wide variety of missions. SMSgts are expected to translate leader's direction into specific tasks and responsibilities so their teams can understand and execute. They serve in key leadership roles, such as a superintendent where they actively develop their Airmen, NCOs, and SNCOs into the enlisted leaders of the future. SMSgts coordinate, plan, and manage efficient and effective utilization of available resources as well as develop and implement clear, concise guidance, instructions, and policy in addition to administering and managing support agreements. They coordinate and advise senior leadership on mission directives and requirements. 9S100 SMSgts interface with and brief senior government, civilian, and military officials and act on queries from those and other officials. They direct and plan data collection and analysis efforts of platforms and sensor systems. Finally SMSgts coordinate between US national-level agencies, cabinet-level/host-government officials, Joint, and HQ USAF for sustaining personnel support, financial management, administration, operations, maintenance, communications, and logistics.

5.1.7. CMSgt

Chief enlisted manager for RI activities. Chiefs bring substantial institutional, operational, and functional expertise as well as strong leadership skills to their organizations and all assigned tasks. Chiefs lead and manage teams to accomplish a wide variety of missions. Chiefs are expected to quickly translate leader's direction into specific tasks and responsibilities so their teams can understand and execute. They serve in key leadership roles, namely as a superintendent where they actively develop their Airmen, NCOs, and SNCOs into the enlisted leaders of the future. Chiefs coordinate, plan, and manage efficient and effective utilization of available resources as well as develop and implement clear, concise guidance, instructions, and policy in addition to administering and managing support agreements. They coordinate and advise senior leadership on mission directives and requirements. 9S100 CMSgts typically interface with and brief senior government, civilian, and military officials and act on queries from those and other officials. They direct and plan data collection and analysis efforts of platforms and sensor systems. Finally CMSgts coordinate between US national-level agencies, cabinet-level/host-government officials, Joint, and HQ USAF for sustaining personnel support, financial management, administration, operations, maintenance, communications, and logistics.

6. Training Decisions. This CFETP was developed to reflect changes to the RI and to outline the mandatory and recommended educational and training responsibilities members of this RI are to

focus upon. The following training decisions were made during the Jul 11 STRT and Mar 12 U&TW and reflect the training necessities associated with changes in force utilization.

6.1. Job Knowledge Development Courses. JKDCs will be significantly changed to meet current requirments. Development date for updated JKDC set for 3 July 13.

6.2. Advanced Scientific Applications Course. The Technical Applications Collection course has been redisinged and is now the Advanced Scientific Applications (ASA) course. SSgts are expected to attend the ASA as soon as possible after sewing on SSgt. Commanders should ensure members are afforded the earliest opportunity to enroll.

6.3. Training Buisness Area (TBA). To standardize training and allow 9S100 leadership visabilty into training and qualification, training records will be maintained on-line in TBA. If TBA is not available, or causes significant problems at an OCONUS unit, a waiver for that specific unit will be granted by the AFCFM.

7. Community College of the Air Force. Off-duty education is a personal choice that is highly encouraged. Enrollment in CCAF occurs upon completion of basic military training. CCAF provides the opportunity to obtain an Associate in Applied Sciences Degree. In addition to its associate's degree program, CCAF offers the following:

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. Professional Manager Certification. CCAF offers the Professional Manager Certification (PMC) Program to qualified SNCOs. The PMC is a professional credential that formally recognizes an individual's advanced level of education and experience in leadership and management, as well as professional accomplishments. The program provides a structured professional development track that supplements Enlisted Professional Military Education (EPME) and CFETP.

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

7.4. Degree Requirements. All airmen are automatically entered into the CCAF program. To track degree progress you can go to the Air Force Virtual Education Center at https://www.my.af.mil/afvecprod/afvec/Home.aspx . Prior to completing an associate degree, RI 9S100 rating must be awarded and the following requirements met:

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

	Technical Education; Leadership, Management, and Military Studies; or General Education
Total	64

7.4.1. 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 courses.

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

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

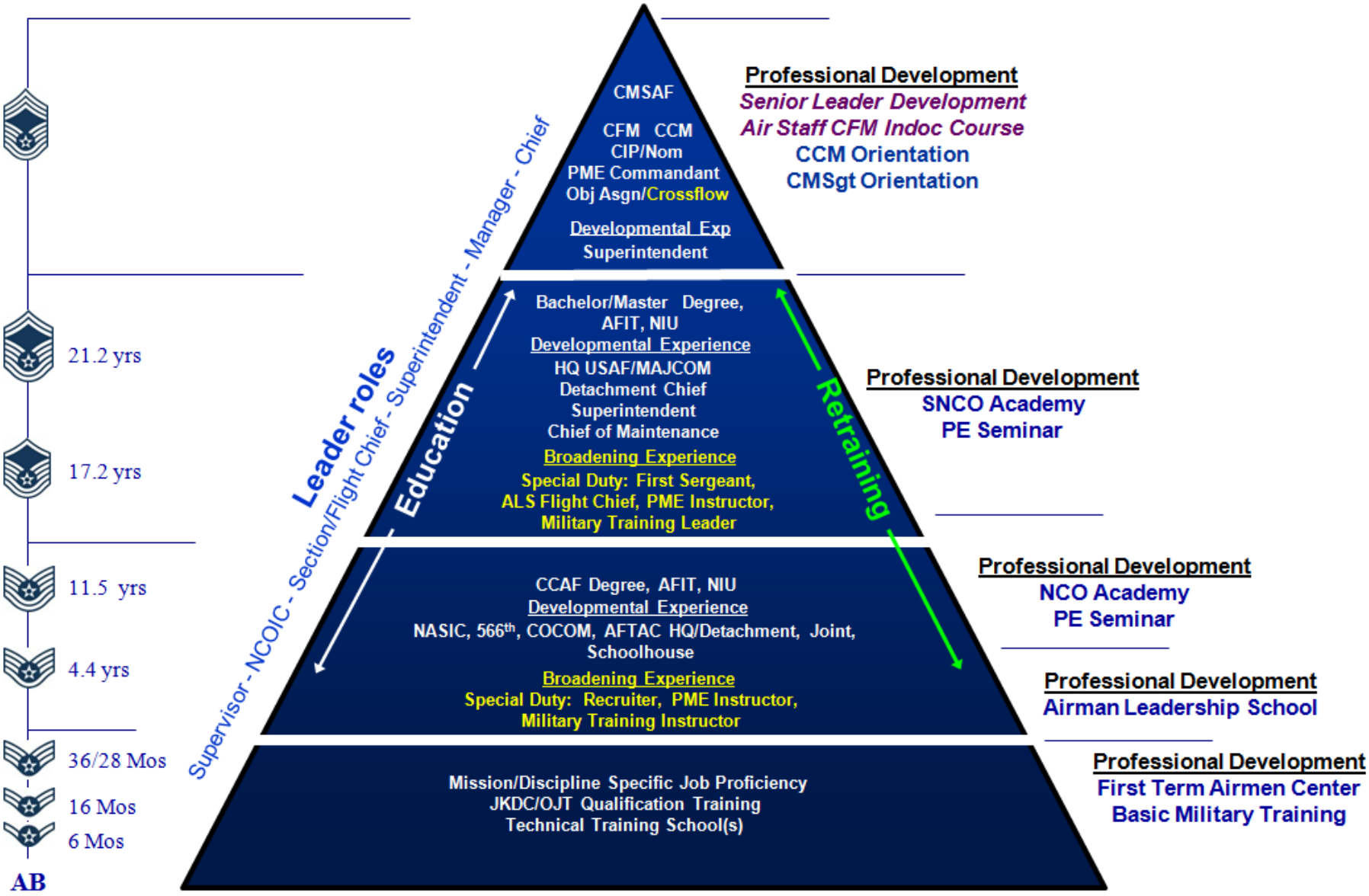
7.4.4. General Education (15 Semester Hours): Applicable courses must meet the criteria for application of courses to the General Education Requirements (GER) and be in agreement with the definitions of applicable General Education subjects/courses as provided in the CCAF General Catalog.

7.4.5. 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.

7.5. Off Duty Education: 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 associate degree. A degreed faculty is necessary to maintain accreditation through the Southern Association of Colleges and Schools.

8. Career Field Path

8.1. 9S100 Enlisted Career Path



8.2. Force Development

Throughout their career, members of the 9S100 RI are subject to a wide variety of taskings to support dynamic missions utilizing technologically advanced systems. These systems and the science and technology behind each of them are, individually, complete fields of study in the academic world. Expanding diversity of these mission tasks and the ever-changing technologies needed to meet them impact our most valuable resource - people. Over the course of a career a 9S may stay completely within one discipline, maintain one system, or work in multiple highly technical areas with a variety of related systems. There are opportunities for advancement whether a 9S chooses to remain in one area of expertise or learns multiple systems. It is essential we effectively and efficiently train our people to succeed in this challenging environment with modular (or just-in-time) training, advanced certificate and degree programs, and robust in-depth OJT. Adequate training and timely progression combined with experience as airmen progress in their career play an important role in the Air Force's ability to accomplish its missions. It is also essential everyone involved in training do their part to plan, manage, and conduct an effective training program. Each 9S100 should continue technical development through a variety of means, such as technical manuals, advanced courses, off-duty education, seminars, etc. Technical development, just like professional growth, never ends. Enlisted personnel with a Bachelor's Degree may be eligible to compete for a position in several Air Force Master's Degree programs.

8.2.1. AB – Amn

Airmen are primarily at a learning competency level, adapting to the requirements of the military profession, acquiring knowledge of military customs, courtesies, and Air Force standards, as well as striving to attain technical proficiency. Formal technical training for entry level Airmen consists of the task and knowledge training provided by AETC and consists of several courses. The first course, Scientific Applications Fundamentals, is currently taught at Goodfellow AFB TX. This course provides the student with a basic understanding of general duty topics, electronic components, circuits, test equipment, computers, technical knowledge (math, science, and phenomenology), community mission and organization. More importantly, it provides a technical foundation for analytical thinking, vital to all 9S100 jobs. It is a pre-requisite for entry into one of the four initial skills courses also taught at Goodfellow AFB TX. These courses cover technical skills training and task-oriented training that prepares airmen for duties based upon the requirements of their specific assignment. This training is intended to provide assignment-specific technical training immediately prior to using the required skills. Selection for any specific initial skills course is contingent upon the requirements of the assignment. Task and knowledge training requirements are identified in the JETS. Individuals must complete the fundamentals course and one of the initial skills courses in order to be awarded the 9S100 RI.

8.2.2. A1C

A1Cs fully comply with Air Force standards and are expected to devote their efforts to the mastery of technical skills and knowledge required in this RI while becoming effective team members. The requirements for completion of training are: (1) qualification in and possession of RI 9S100; (2) complete qualification training requirements for current duty position; (3) complete job knowledge training as outlined in the 9S100 Job Knowledge Development Course (JKDC); (4) satisfactorily perform in current duty position for a minimum of 12 months (a minimum of 9 months if a retrainee); (5) recommendation of immediate supervisor. Individuals moving to new duty assignments or positions may require advanced training to acquire the assignment-specific

information and skills required for the new position. The task and knowledge training requirements for these courses are identified in the JETS.

8.2.3. SrA

SrA must begin developing supervisory and leadership skills through progressively challenging responsibilities on the job, professional military education, individual study, and mentoring by their supervisors. The requirements for completion of training are: (1) qualification in and possession of RI 9S100; (2) complete qualification training requirements for current duty position; (3) complete job knowledge training as outlined in JKDC 9S100; (4) satisfactorily perform in current duty position for a minimum of 12 months (a minimum of 9 months if a retrainee); (5) recommendation of immediate supervisor. Individuals moving to new duty assignments or positions may require advanced training to acquire the assignment-specific information and skills required for the new position. The task and knowledge training requirements for these courses are identified in the JETS. SrA will typically attend the Airman Leadership School (ALS) after serving 48 months in the Air Force or upon selection for promotion to SSgt. Individuals will use their JKDC and other designated study references to prepare for testing under the Weighted Airman Promotion System.

8.2.4. SSgt

SSgts are primarily highly skilled technicians with supervisory and training respnsibilities. They must also continuously strive to further their technical development. SSgts must complete all duty position requirements. Individuals moving to a new duty assignment or position may also require advanced training through additional 9S100 training modules, certificate programs, or advanced coursework to acquire the information and skills required for the new position. Crosstraining members must complete Scientific Applications Fundamentals course and one of the four follow-on initial skills courses to fulfill the initial technical training requirements. To become position qualified, crosstrainees will complete local duty position qualification training, the JKDC, and must be assigned in the position for 9 months. Commanders are expected to ensure that all 9S100 SSgts are enrolled in the ASA course as soon as possible. This course, currently taught at Goodfellow AFB, TX, is a capstone to the technical training and JKDC and is crucial to the SSgt understanding the important role that the 9S100 fills in the strategic posture of the DoD and the United States. All SSgts are highly encouraged to complete the ASA course prior to sewing on TSgt. 9S100 SSgts should strive to complete the academic requirements for a CCAF Associate Degree in Scientific Analysis Technology. Additionally, when selected for promotion to TSgt, individuals will be eligible to attend the Noncommissioned Officer Academy. SSgt are utilized as leaders in training, standardization/evaluation, and shift supervisors. SSgts are encouraged to explore professional development opportunities such as AETC instructor, Military Training Instructor, Recruiter, etc.

8.2.5. TSgt

TSgts are often their organizations' technical experts in addition to providing sound supervision and training. They are responsible for the development of all assigned enlisted personnel within their span of control. TSgts must complete all duty position requirements. Individuals moving to a new duty assignment or position may also require advanced training through additional 9S100 training modules, certificate programs, or advanced coursework to acquire the information and skills required for the new position. Crosstraining members must complete Scientific Applications Fundamentals course and one of the four follow-on initial skills courses to fulfill the initial technical training requirements. To become position qualified, crosstrainees will complete local duty position

qualification training, the JKDC, and must be assigned in the position for 9 months. Completion of the ASA is highly encouraged prior to 9S100s sewing on TSgt to include TSgt crosstrainees as soon as feasible. TSgts must continuously strive to broaden and perfect their technical expertise and supervisory techniques. TSgts are expected to attend the NCO Academy, and must do so before assuming the grade of MSgt. 9S100 TSgts are also expected to complete the academic requirements for a CCAF Associate Degree in Scientific Analysis Technology and are highly encouraged to continue academic education through civilian institutions. 9S100 TSgts should explore professional development opportunites such as AETC instructor, Military Training Instructor, Recruiter, etc. to better prepare them for SNCO responsibilities.

8.2.6. MSgt

MSgts are transitioning from being technical experts and first line supervisors to operational leaders who merge their personnel's talents, skills, and resources with other teams' functions to most effectively accomplish the mission. MSgts must complete all duty position requirements. Individuals moving to a new duty assignment or position may also require advanced training through additional 9S100 training modules, certificate programs, or advanced coursework to acquire the assignment-specific training required for the new position. MSgts are continuing to develop their leadership and management skills, so individuals should take courses or obtain added knowledge on specific disciplines and techniques as well as management of resources and personnel. MSgts should complete Course 14, SNCO PME in preparation for their enhanced roles. 9S100 MSgts should have already completed the CCAF associate degree and are strongly encouraged to pursue off-duty educational opportunities such as completing an undergraduate or graduate degree program. 9S100 MSgts desiring promotion to SMSgt typically need to have served as a directorate superintendent, detachment chief/superintendent, HQ USAF, Joint, National agency, or MAJCOM functional, or in another leadership position indicative of increased responsibility, in order to be competitive for the promotion.

8.2.7. SMSgt

SMSgts are key, experienced, operational leaders who merge their personnel's talents, skills, and resources with other teams' functions to most effectively accomplish the mission. SMSgts continue to develop their leadership and management skills in preparation for expanded responsibilities and higher leadership positions. By this point in their career, they should be serving as a detachment chief/superintendent, directorate superintendent, HQ USAF, Joint, National agency, or MAJCOM functional, etc., as well as be experienced in First Sergeant-related matters and staff functions commensurate with senior leadership roles. This broad-base of experience is vital to effective 9S100 leadership and valued by unit commanders. There are no career-field-specific knowledge/training requirements for SMSgt. Individuals moving to a new duty assignment or position generally will not require advanced training to assume the new position, although certain duty positions may require qualification training. Additional training in the areas of budget, manpower, resources, and personnel management should be pursued through continuing education. 9S100 SMSgts should have completed an undergraduate degree program (and consider a graduate program) to enhance technical, managerial, or leadership capabilities.

8.2.8. CMSgt

CMSgts are expected to excel in all duty positions. CMSgts must have a broad base of experience with and knowledge of most, if not all, 9S100 missions/duties. By this point in their career, they

should have served as a detachment superintendent/chief or MAJCOM or higher level position as well as be experienced in First Sergeant-related matters and staff functions commensurate with senior leadership roles. There are no career-field-specific knowledge/training requirements for CMSgt. Chiefs moving to a new duty assignment or position generally will not require advanced training to assume the new position, although certain duty positions may require qualification training. Additional training in the areas of budget, manpower, resources, and personnel management should be pursued through continuing education. 9S100 Chiefs should have completed an undergraduate degree program (and consider a graduate program) to enhance technical, managerial, or leadership capabilities. CEM codes are not available to the RI 9S100 career field.

Section C – Reporting Identifier Training Requirements

9. Purpose. This CFETP encompasses the entire spectrum of training requirements for the 9S100 RI. The spectrum includes a strategy for when, where, and how to meet the training requirements. This strategy is designed to be apparent and affordable to reduce duplication, eliminate a disjointed approach, and ensure universal availability of training for all.

9.1. Modular training. The 9S100 RI uses modular training to effectively meet mission requirements and train airmen "just-in-time." Non-prior service (NPS) students from Basic Military Training and retraining students attend initial skills training. Initial skills training is task-oriented training that prepares airmen for specific duty assignment requirements using training modules developed for specific systems operated and maintained by 9S100 RI personnel. Each of the four initial skills training courses will deliver training and assignment-specific requirements tailored to the first duty assignment. Personnel currently holding 9S100 RI and being assigned to new duty positions will attend advanced training modules that will provide just-in-time skills and knowledge tailored to the new position. In most cases, this training will consist of one or more courses taught at Goodfellow AFB. The aim of both the initial skills and advanced training is to deliver current, relevant knowledge and skills training for use at the next duty assignment. Modular training does not replace or alleviate the need for OJT. Every unit and supervisor must carefully consider what additional core knowledge and critical tasks are required and build a training and evaluation program to meet unit mission requirements. The MAJCOM formal training section will schedule advanced training for 9S100 RI personnel reassigned to new duties on an as required basis.

9.2. Classification and Tracking of Training. As a RI, 9S100s faces unique difficulties in tracking and administering training. 9S100s do not have skill-levels and because of this the Training Status Codes (TSC) available to an AFSC does not match the RI upgrade training architecture. Because of this, TSCs will not be used to track 9S100 upgrade training. The unit training manager will enter 9S100s into training status code "R" (fully qualified) upon arrival at their duty assignment. Units will use a localy developed process to track 9S100 OJT. In addition, if not already accomplished, a skill level waiver will be completed as soon as the individual arrives on station.

10. The 9S100 RI CFETP uses two catagories of training: **Initial training** and **Qualification training** rather than skill levels.

10.1. Initial Skills Training Requirements

10.1.1. Knowledge. Must possess fundamental knowledge of the following:

10.1.1.1. Electronic Principles including: circuits, terms and calculations, circuit components, motors, logic functions, transmitters, receivers, antennas, computer theory, soldering, and the use of various test measurements and diagnostics equipment.

10.1.1.2. Mathematics including: basic and exponential algebraic equations and standard deviation calculations.

10.1.1.3. Sciences including: atomic structure and properties of matter, dynamics and force, conservation of energy, fluid and thermodynamics, electromagnetic radiation, characteristics of wave propagation through various mediums (earth, water, atmosphere, and space), radioactivity, and nuclear reactions.

10.1.1.4. Phenomenology including: geophysical, electro-optic, material, nuclear radiation, radar, and radio frequency.

10.1.1.5. Computer Technology including: computer communications and networks; workstation operation, troubleshooting methods, and procedures; theory, operation, installation, and maintenance of electronic data processing equipment and their operating systems.

10.1.1.6. Logistics and Maintenance including: maintenance practices and logistics management procedures.

10.1.1.7. Missions and organizations including: community structure, roles and responsibilities, general principles, national and theater assets, and operational applications.

10.1.2. Education. Completion of high school or high school equivalency is mandatory for entry into this RI. Courses in physics, mathematics, and computer science are desirable.

10.1.3. Training. Completion of the Scientific Applications Fundamentals qualification course and one 9S100 RI awarding follow-on modular training course are mandatory for award of the RI.

10.1.4. Experience. None required

10.1.5. Other. Normal color vision, open to United States Nationals only, and individual must be eligibile for a Top Secret security clearance in according with AFI 31-501. A minimum score of 57 on the Electronic Data Processing Test (EDPT) is required to enter the initial skills course. Additional requirements are referenced in the Air Force Enlisted Classification Directory.

10.1.6. Training Sources and Resources. The initial skills courses will provide the required knowledge and qualifications. Initial skills training is accomplished through a fundamentals "prerequisite" course and a follow-on modular course at Goodfellow AFB TX. The current JETS identify all tasks trained through these formal courses, initial skills requirements are identified in the Initial column.

10.1.7. Implementation. Upon completion of Basic Military Training, Airmen are assigned (PCS) to Goodfellow AFB to attend the fundamentals "prerequisite" course and a follow-on modular course. Initial skills training for 9S100 RI personnel are satisfied upon successful completion of both courses. Training status code "K" (Attending Technical School) is to be used for NPS and retrainees while in the required formal courses (Technical School).

10.2. Qualification Training Requirements

10.2.1. Qualification Training. Qualification training begins at the first duty station when the individual enters OJT. The requirements for completion of "qualification training" are: (1) completion of initial skills training and subsequent possession of 9S100 RI; (2) complete qualification training requirements for current duty position; (3) complete job knowledge training as outlined in the JKDC no later than 12 months after assignment to initial duty station; (4) satisfactorily perform in current duty position for a minimum of 12 months (a minimum of 9 months if a retrainee); and (5) recommendation of the immediate supervisor.

10.2.1.1. Implementation. Upon arrival at first duty assignment, unit training managers will verify NPS and retrainees are entered into training status code "R" (fully qualified) and a skill level waiver has been accomplished. The OJT progress evaluation time frame requirement of 12 to 24 months as listed in AFI 36-2201 is waived and is replaced with the requirements in 10.2.1. above. Units will use a localy developed process to track OJT requirements.

10.2.1.2. Completing OJT. Units will use a Master Training Plan and associated Master Task Listing to establish the position qualification criteria for upgrade to qualified status. Once the individual has met the qualification training requirements of 10.2.1. above, the supervisor recommends the unit training manager to remove them from the OJT process.

10.3. Modular Training Requirements

10.3.1. Modular Training. 9S100s utilize modular training matched to their projected assignment. Therefore, when a 9S100 is assigned to a mission area they are not qualified for, they will require an additional advanced course.

10.3.1.1. Implementation. Training status code "K" (Attending Technical School) is to be used while attending the advanced module at the technical school at Goodfellow AFB. Upon graduation the TSC is changed to "R" (fully qualified). OJT begins upon arrival at the new duty station.

10.3.1.2. Completing OJT. Once the individual has met the gaining unit's qualification training requirements the supervisor recommends the unit training manager to remove them from the OJT process.

11. TSC source. The training status codes are derived from AFI 36-2201.

12. Training Requirements by Rank

12.1. AB – Amn
Training encompasses those items required to provide essential knowledge and skills used throughout the RI, such as electronics principles, AF indoctrination, basic mathematics, scientific principles, community mission and organization, and an introduction to computers and workstations. It also provides assignment-specific training to introduce specialized skills and knowledge to be used at the trainee's first duty assignment. The goal of the initial skills course is to provide airmen with a broad-based technical education they can build upon and apply to all missions and systems combined with specialization tailored to their first duty assignment.

12.2. A1C – SrA
Training begins at the first duty station after initial skills training and follows a dual track. The performance track consists of qualification training on all tasks required for the assigned duty position. The knowledge track comes in a JKDC, which covers knowledge items required for upgrade training. Additional knowledge on the specific technique/mission and experience should be provided as required through a variety of means such as OJT.

12.3. SSgt – MSgt
Training consists of qualification training on all tasks required for the assigned duty position. Personnel in these training tracks may require advanced training through modular training, certificate, and/or higher education programs in conjunction with a move to a new duty position or assignment. Members that have not performed duties related to an advanced module that they had previously attended (more than four years ago) are highly encouraged to attend the appropriate modular course again, due to currency and proficiency.

13. On-the-Job Training (OJT)

13.1. General Responsibilities
The duties and responsibilities of the AFCFM, 9S100 RI Manager, unit commanders, TCOs, unit training managers, supervisors, trainers, and trainees are specified in AFI 36-2201, AFI 37-138, and this plan. Training records will be accomplished in TBA. If TBA is not available, a waiver can be granted by the AFCFM. In addition all training will be accomplished IAW AFI 36-2201. The 312th Training Squadron, Goodfellow AFB, TX is responsible for publishing and distributing the 9S100 JKDC. The JKDC is developed from requirements identified in the JETS.

13.2. Job Knowledge Development Courses (Career Knowledge Training)
The JKDC is published to provide the information necessary to support technical career knowledge concurrent with the OJT process. When specified, the JKDC will be used to satisfy the career knowledge training requirements. Personnel entered into training when a JKDC is not available, or when JKDC requirements have been waived, will satisfy the mandatory career knowledge requirements by studying the subject and task knowledge references identified by the supervisor in the JETS. This will be accomplished IAW AFI 36-2201.

13.2.1. JKDC Administration
The JKDC is administered jointly by the Air Force Career Development Academy (AFCDA) and the 312 TRS/DOE in accordance with AFI 36-2201 and this plan. Except as specified, the JKDC is

administered using the same procedures and guidelines contained in AFI 36-2201 to administer Career Development Courses (CDCs).

13.2.2. JKDC Enrollment
Unit training managers initiate JKDC enrollment upon request by the trainee's supervisor. Enrollments are processed through MILPDS. AFCDA sends a Welcome card (AU Form 9) and a test answer sheet. Unit training managers must then contact 312 TRS/DOEX, 170 Griffin Street, Suite 21, Goodfellow AFB, TX 76908-4213 (DSN FAX 477-4501/ Commercial FAX 915-654-4501, DSN voice 477-4500/Commercial voice 325-654-4500, or via Email at SPINSTRA@goodfellow.af.mil) to request and coordinate shipment of JKDCs. Provide the following information when ordering: Course number, enrollee's name, SSAN, rank, enrollment date, unit of assignment, unit's training POC, DSN number, and where JKDCs will be shipped. If the enrollee is stationed at other than an AFTAC unit, the request must also include a separate letter (or endorsement on the JKDC enrollment request letter) from the unit security manager verifying the enrollee's security clearance. Upon receipt of the request, 312 TRS/DOE processes the request and ships the JKDC materials to the unit training manager for distribution.

13.2.3. JKDC Time Limit
The supervisor will establish a completion schedule for the JKDC (MAXIMUM 30 days per volume). Enrollees, who have not completed the JKDC 12 months from the date of enrollment, including the course examination, will be disenrolled. AFCDA may grant up to a 4-month extension to the 12-month time limit when unusual circumstances prevent completion within the allotted time frame. Unit training managers should request extensions from AFCDA, with an info copy to 312 TRS/DOE.

13.2.4. JKDC Course Examinations (CEs)
When the trainee has completed the last unit review exam (URE), the unit training manager orders the CE from AFCDA through MILPDS. The unit training manager must also send a CE request to 312 TRS/DOE giving the trainee's name, rank, SSAN, and test version number from the AFCDA test answer sheet. 312 TRS/DOE sends the CE upon receipt of request. Allow 10 days to 3 weeks for mail time. The CE should be administered to the trainee within 30 calendar days of receipt, using the general CE administration instructions provided in the AFCDA catalog and any additional instructions contained inside the front cover of the CE. When unusual circumstances preclude administering the test within the 30-day time limit, the supervisor provides a letter of explanation to the TCO through the unit training manager. To minimize mailing of classified information, the TCO retains the test booklet for use in future testing. Unit TCOs maintain test control logs to account for the receipt, administration, and destruction of CEs according to AFI 36-2201 and the AFCDA Catalog. AFCDA provides the CE results to the unit training manager, identifying questions missed by learning objective numbers. The trainee's immediate supervisor reviews the CE results with the trainee and identifies areas for review training. Review training is required for all missed questions. The minimum passing score for the CE is 65 percent.

13.2.5. JKDC Retesting
If the trainee does not pass the CE, AFCDA forwards an alternate test answer sheet to the unit training manager. The training manager must then notify 312 TRS/DOE to send the alternate CE, giving the same information as when ordering the initial CE. The alternate CE is administered

contingent upon the commander's determination that all requirements for retesting are met IAW AFI 36-2201. Upon completion of the retest, the TCO forwards the completed answer sheet to AFCDA for scoring. To minimize mailing of classified information, the TCO retains the test booklet for use in future testing. The trainee is automatically disenrolled from the JKDC upon failure of the CE retest. AFCDA notifies the unit training manager of the disenrollment action. The trainee's unit commander must evaluate the trainee IAW AFIs 36-2101 and 36-2201, then exercise one of the following options: (1) Consider JKDC waiver IAW AFIs 36-2101 and 36-2201, (2) Recommend withdrawal of the RI, return to previously awarded AFSC, or retraining, or (3) Process the member for separation according to AFI 36-3208.

13.2.6. JKDC Requests for Assistance
Requests for assistance should be submitted through the unit training manager (UTM). UTMs should forward requests for administrative assistance to AFCDA, while subject matter questions should be sent to 312 TRS/DOE. Sending subject-matter questions to AFCDA will merely delay the answer, as AFCDA will forward them to 312 TRS for answers. Requests for subject-matter assistance may be made by letter, telephone, or email. The author's name, address, DSN number, and email address are listed in the front cover of each JKDC volume.

13.2.7. JKDC Mailing and Handling
All JKDC materials and correspondence are mailed according to AFI 31-401, *INFORMATION SECURITY PROGRAM MANAGEMENT*. All CEs and CE answer sheets, regardless of classification, will be double wrapped with the inner envelope conspicuously annotated with the following statement: CONTAINS JKDC TEST MATERIAL -- TO BE OPENED BY TEST CONTROL OFFICER ONLY. Handling of open CE test booklets and completed answer sheets by other than appointed TCOs and examinees, and discussion of CE items outside the testing environment are prohibited. Violators are subject to action under the Uniform Code of Military Justice, Article 92. Anyone becoming aware of a known or suspected compromise of CE test items will immediately report test compromise following AFCDA catalog instructions and notify 312 TRS/DOE.

14. Special Experience Identifier Requirements

14.1. SEIs. SEIs identify special experience and training not otherwise identified within the personnel data system. SEIs complement the assignment process but are not substitutes for AFSCs, prefixes, or suffixes. They are established when identifying experience or training is critical to the job and assignment match, and no other identification is appropriate or available. SEIs permit identification of a resource already experienced to meet unique circumstances, contingency requirements, or management needs. They provide a means to track individuals and identify positions requiring or providing unique experience or training that otherwise would be lost. Refer to the Air Force Enlisted Classification Directory, for a more detailed explanation and list of SEIs.

14.2. SEI award and removal. Each site should ensure SEIs are awarded as appropriate for proper personnel tracking. Each unit loads their individuals via the appropriate personnel data system. Requirements for the award of the SEI are:

14.2.1. SEI 058, Atmoshperic Research Equipment. Award of the SEI requires JKDC completion, position qualification in Advanced Atmospheric Research Equipment maintenance, 12 months experience, and supervisor recommendation.

14.2.2. SEI 950, Subsurface Analysis. Award of the SEI requires completion of Subsurface Analysis course, JKDC completion, Subsurface Operations Monitor position qualification in Subsurface Analysis, 9 months of experience, and supervisor's recommendation.

14.2.3. SEI 962, Subsurface Maintenance. Award of the SEI requires completion of Subsurface Maintenance course, JKDC completion, position qualification in subsurface maintenance, 9 months of experience, and supervisor's recommendation.

14.2.4. SEI 963, Materials Maintenance. Award of the SEI requires completion of Special Equipment Maintenance course, JKDC completion, position qualification in materials maintenance, 9 months of experience, and supervisor's recommendation.

14.2.5. SEI 964, Laboratory Specialist. Award of the SEI requires completion of Laboratory Specialist course, JKDC completion, position qualification in laboratory, 9 months of experience, and supervisor's recommendation.

Section D - Resource Constraints

15. Purpose. As prescribed in AFI 36-2201, *Air Force Training Program*, 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.

16. Initial Training:

16.1. Constraints. N/A

16.1.1. Impact. N/A

16.1.2. Resources Required. N/A

16.1.3. Action Required. N/A

16.2. OPR/Target Completion Date. N/A

Section E. Transitional Training Guide

17. Not used at this time.

Part II

Section A - Job Education Training Standard (JETS)

1. Implementation. This JETS will be used to identify technical training provided by AETC for Scientific Applications Specialist course with class beginning 7 Jan 13. Training for the follow-on ABR courses will start with classes beginning on 15 May 13.

2. Purpose. As prescribed in AFI 36-2201, *AIR FORCE TRAINING PROGRAM*, this JETS:

2.1. Lists in Column 1 (*Tasks, Knowledge, and Technical Reference*) the most common tasks, knowledge, and technical references (TR) necessary for airmen to perform duties in the RI.

2.2. As a minimum, trainees must complete all critical tasks for upgrade to Qualified status. Critical tasks will be determined by the supervisor relative to the duty position the individual is assigned to.

2.3. Wartime tasks. In response to a wartime scenario, 9S100 RI does not require accelerated training IAW AFI 36-2201, *AIR FORCE TRAINING PROGRAM*.

2.4. Provides certification for OJT. Columns 3A, B, C, D, and E are used to record completion of tasks and knowledge training requirements. Use Training Business Area (TBA) to document technician qualifications, if available. Task certification must show a certification or completed date.

2.5. Shows formal training and correspondence course requirements. Columns 4 A, and B show the proficiency to be demonstrated on the job by the graduate as a result of training on the task/knowledge and the career knowledge provided by the JKDC, and read-ahead material.

2.6. 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.

2.7. The JETS becomes a job qualification standard (JQS) for on-the-job training when placed in AF Form 623, Individual Training Record, and used according to AFI 36-2201. When used as a JQS, the following requirements apply:

2.7.1. Documentation. Document and certify completion of training IAW AFI 36-2201. Training Business Area (TBA) will use to document training. Training records will be accomplished in TBA. If TBA is not available, or causes significant problems at an OCONUS unit, a waiver for that specific unit will be granted by the AFCFM.

2.7.1.1. Converting from old CFETP to new CFETP. Use the new CFETP to identify and certify all past and current qualifications. Document in TBA according to current Air Force instructions.

2.7.1.2. Documenting Career Knowledge. When a JKDC is not available, the supervisor identifies JETS training references that the trainee requires for career knowledge and ensures, as a minimum, that trainees cover all mandatory items specified in the Air Force Enlisted Classification Directory.

2.7.1.3. JKDC Exam Failures. For two-time JKDC exam failures, supervisors identify all JETS items corresponding to the areas covered by the JKDC. The trainee completes a study of JETS references, undergoes evaluation by the task certifier, and receives certification on the JETS. At this point, a waiver may be requested (see AFIs 36-2101, *CLASSIFYING MILITARY PERSONNEL (OFFICER AND ENLISTED*) and 36-2201 for details). *NOTE:* Career knowledge must be documented prior to submitting a JKDC waiver request.

2.7.1.4. Decertification and Recertification. When an airman is found to be unqualified on a task, the supervisor shall erase previous certification and enter airman into qualification training. 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 using the normal certification process.

2.7.2. Training Standard. Tasks are trained and certified to the "go" level. "Go" means the individual can perform the task without assistance and meets the local requirements for accuracy, timeliness, and correct use of procedures. This equates to a "3c" in the proficiency code key. AFQTPs, when available, shall be used to identify Air Force standardized procedures. Local requirements for accuracy, timeliness, and use of procedures shall be applied accordingly.

2.7.3. Task Numbering. All tasks have been numbered relative to the attachment number. This allows greater flexibility, enabling future modifications to be made without affecting the entire document.

2.8. This JETS 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 JETS subject matter areas judged by test development team members as most appropriate for promotion to higher grades. Questions are based upon study references listed in the Enlisted Promotions References and Requirments Catalog (EPRRC) (available at https://www.omsq.af.mil/index.htm). Individual responsibilities are listed in the EPRRC.

2.9. This JETS contains the following attachments:

2.9.1. Attachment 1. Proficiency Code Key. Used to indicate the level of training and knowledge provided by resident training and the JKDC.

2.9.2. Attachment 2. 9S100 RI Scientific Applications Fundamentals JETS. Covers Air Force indoctrination, electronics principles, community mission and organization, and technical knowledge and skill requirements applicable to all RI 9S100 members.

2.9.3. Attachment 3. 9S100 RI Subsurface Maintenance JETS. Use as required.

2.9.4. Attachment 4. 9S100 RI Remote Sensing JETS. Use as required.

2.9.5. Attachment 5. 9S100 RI Special Equipment Maintenance JETS. Use as required.

2.9.6. Attachment 6. 9S100 RI Subsurface Analysis JETS. Use as required.

2.9.7. Attachment 7. 9S100 RI Systems Networking and Advanced UNIX JETS. Used to identify training line items for the Systems and Advanced Unix course.

2.9.8. Attachment 8. 9S100 RI ASA JETS. Used to identify training line items for the 9S100 ASA.

2.9.9. Attachment 9. 9S100 RI JKDC JETS. Covers technical and career knowledge for progression to the fully "Qualified". Used to identify training line items for the 9S100 JKDC.

3. Recommendations. Report JETS inadequacies and/or unsatisfactory performance of individual course graduates to 312TRS/DOE, 170 Griffin Street, Suite 21, Goodfellow AFB TX 76908-4213, referencing specific JETS paragraphs. A 24 hour Customer Service Information Line (CSIL) has been installed for the supervisor's convenience to identify demonstrated over- or under-training on performance/knowledge items listed in the training standard. For a quick response to any training concerns, call the CSIL, DSN 477-3350, anytime day or night.

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 standard is 70% on written examinations. Standards for performance measurement are indicated in the objectives 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 parts of the behavior until satisfactory performance is attained.

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

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

7.1. **Initial Skills Course.** A detailed listing of the initial skills course objectives may be obtained by written request to 312 TRS/DOE, Goodfellow AFB TX 76908-4213.

7.2. 7-Skill Level Course. N/A. 9S100 RI career field does not use skill levels.

Section C - Support Material

8. Air Force Qualification Training Packages (AFQTP)

8.1. The current listing of AFQTPs can be obtained at the following Internet address: http://www.e-publishing.af.mil/. Many of the products can be downloaded directly from the web. These are not mandatory for this career field but may be of use for those individuals needing qualification in areas that are covered by an AFQTP.

8.2. Computer Based Training Products

8.2.1. Air Force computer based training products can be found at https://www.my.af.mil/skillportcbtprod4/skillportfe/main.action?selectedTab=1.

Section D - Training Course Index

9. Purpose. This section of the CFETP identifies training courses available for the specialty. The current listing of USAF Formal Schools can be obtained at the following Internet address: https://etca.randolph.af.mil/.

10. Air Force In-Residence Courses

COURSE NUMBER	TITLE	LOCATION	USER
X3AZR9S100 0A0B	Subsurface Analysis	Goodfellow AFB	AF
X3AZR9S100 0A1B	Seismic Systems Maintenance	Goodfellow AFB	AF
X3AZR9S100 0A2B	Remote Sensing Systems Analyst	Goodfellow AFB	AF
X3AZR9S100 0A3B	Special Equipment Maintenance	Goodfellow AFB	AF
X3AZR9S100 0A4B	Systems Networking and Advanced UNIX	Goodfellow AFB	AF
X3AZR9S100 0A5B	Advanced Scientific Applications	Goodfellow AFB	AF

11. Air Force Institute for Advanced Distributed Learning (AFCDA) Courses

COURSE NUMBER	TITLE	LOCATION	USER
9S100	Scientific Application	Correspondence	AF

12. Exportable Courses/Information

COURSE NUMBER	TITLE	LOCATION	USER

Area reserved for future use

13. Courses Under Development/Revision

COURSE NUMBER	TITLE	LOCATION	USER

Section E - MAJCOM Unique Requirements

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

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

LARRY D. JAMES, Lt Gen, USAF
Deputy Chief of Staff, Intelligence,
Surveillance and Reconnaissance

Attachments:
1. Qualitative Requirements
2. RI 9S100 Scientific Applications Fundamentals JETS
3. RI 9S100 Subsurface Maintenance JETS
4. RI 9S100 Remote Sensing JETS
5. RI 9S100 Special Equipment Maintenance JETS
6. RI 9S100 Subsurface Analysis JETS
7. RI 9S100 Systems Networking and Advanced UNIX JETS
8. RI 9S100 Advanced Scientific Applications JETS
9. RI 9S100 JKDC JETS

THIS BLOCK IS FOR IDENTIFICATION PURPOSES ONLY		
NAME OF TRAINEE		
PRINTED NAME (*Last, First, Middle Initial*)	**INITIALS *(Written)***	**SSAN (Last 4)**
PRINTED NAME OF CERTIFYING OFFICIAL AND WRITTEN INITIALS		
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**	Can do simple parts of the task. Needs to be told or shown how to do most of the task. (EXTREMELY LIMITED)
	2	Can do most parts of the task. Needs only help on hardest parts. (PARTIALLY PROFICIENT)
	3	Can do all parts of the task. Needs only a spot check of completed work. (COMPETENT)
	4	Can do the complete task quickly and accurately. Can tell or show others how to do the task. (HIGHLY PROFICIENT)
***TASK KNOWLEDGE LEVELS**	**a**	Can name parts, tools, and simple facts about the task. (NOMENCLATURE)
	b	Can determine step by step procedures for doing the task. (PROCEDURES)
	c	Can identify why and when the task must be done and why each step is needed. (OPERATING PRINCIPLES)
	d	Can predict, isolate, and resolve problems about the task. (ADVANCED THEORY)
****SUBJECT KNOWLEDGE LEVELS**	**A**	Can identify basic facts and terms about the subject. (FACTS)
	B	Can identify relationship of basic facts and state general principles about the subject. (PRINCIPLES)
	C	Can analyze facts and principles and draw conclusions about the subject. (ANALYSIS)
	D	Can evaluate conditions and make proper decisions about the subject. (EVALUATION)

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 JKDC.

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

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1. Tasks, Knowledge and Technical References		2. Core tasks	3. Certification For OJT					4. Proficiency Codes Used to Indicate Training Provided	
			A	B	C	D	E	A Initial	B Qualification
			Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials		
ELECTRONIC PRINCIPLES									
2.1.	**ELECTRONICS SUPPORT SUBJECTS** TR: TO 31-1-141-1, 00-25-234								
2.1.1.	Safety							B	
2.1.2.	First Aid							A	
2.1.3.	Electrostatic Discharge Control							B	
2.1.4.	Electromagnetic Effects							B	
2.1.5.	**Metric Notation** TR: TO 31-1-141-2, 31-1-141-5								
2.1.5.1.	Calculate Powers of Ten							2b	
2.1.5.2.	Electrical Prefixes							B	
2.2.	**TEST EQUIPMENT** TR: TO 31-1-141-1, 31-1-141-7, 31-1-141-8, 31-1-141-9, 31-1-141-10								
2.2.1.	Digital Multimeter							2b	
2.2.2.	Oscilloscope							2b	
2.2.3.	Signal Generator							2b	
2.3.	**BASIC CIRCUITS** TR: TO 31-1-141-2, 31-1-141-5, 31-1-141-9								
2.3.1.	**Direct Current (DC)**								
2.3.1.1.	Theory							B	
2.3.1.2.	Calculations							2b	
2.3.2.	**Alternating Current (AC)**								
2.3.2.1.	Theory							B	
2.3.2.2.	Calculations							2b	
2.4.	**BASIC CIRCUIT COMPONENTS** TR: TO 31-1-141-2, 31-1-141-5, 31-1-141-15								
2.4.1.	**Resistors**								
2.4.1.1.	Theory							B	
2.4.1.2.	Color Code							B	
2.4.1.3.	Troubleshoot							2b	
2.4.2.	**Inductors**								
2.4.2.1.	Theory							B	
2.4.2.2.	Troubleshoot							2b	
2.4.3.	**Capacitors**								
2.4.3.1.	Theory							B	
2.4.3.2.	Troubleshoot							2b	
2.4.4.	**Resistive-Capacitive-Inductive (RCL) Circuits Theory**								
2.4.4.1.	Basic							B	
2.4.4.2.	Resonant							B	

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2.4.4.3.	Frequency Sensitive Filter							B	
2.5.	**ELECTROMAGNETIC DEVICES** **TR: TO 31-1-141-2, 31-1-141-3, 31-1-141-9, 31-1-141-13, 31-1-141-15**								
2.5.1.	**Transformers**								
2.5.1.1.	Theory							B	
2.5.1.2.	Troubleshoot							2b	
2.5.2.	**Relays and Solenoids**								
2.5.2.1.	Theory							B	
2.5.2.2.	Troubleshoot Relays							2b	
2.5.3.	**Motor Theory**								
2.5.3.1.	Direct Current (DC)							B	
2.5.3.2.	Alternating Current (AC)							B	
2.5.4.	**Generator Theory**								
2.5.4.1.	Direct Current (DC)							B	
2.5.4.2.	Alternating Current (AC)							B	
2.5.5.	Special Purpose Motors							A	
2.5.6.	Transducer Theory **TR: TO 31-1-141, 31-1-141-4**							B	
2.6.	**SOLID STATE DEVICES** **TR: TO 31-1-141-4**								
2.6.1.	**Diodes**								
2.6.1.1.	Theory							B	
2.6.1.2.	Troubleshoot							2b	
2.6.2.	**Bipolar Junction Transistors**								
2.6.2.1.	Theory							B	
2.6.2.2.	Troubleshoot							2b	
2.6.3.	**Special Purpose Device Theory**								
2.6.3.1.	Zener Diode							B	
2.6.3.2.	Light Emitting Diode (LED)							B	
2.6.3.3.	Liquid Crystal Display (LCD)							B	
2.6.3.4.	Integrated Circuits (IC)							B	
2.6.3.5.	Operational Amplifiers							B	
2.7.	**TRANSISTOR AMPLIFIER CIRCUITS** **TR: TO 31-1-141-1, 31-1-141-4**								
2.7.1.	Theory							B	
2.7.2.	Stabilization							B	
2.7.3.	Coupling							B	
2.8.	**POWER SUPPLY CIRCUITS** **TR: TO 31-1-141-3, 31-1-141-4, 31-1-141-9, 31-1-141-15**								
2.8.1.	**Theory**								
2.8.1.1.	Recitifiers							B	

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2.8.1.2.	Filters							B	
2.8.1.3.	Voltage Regulators							B	
2.8.1.4	Troubleshoot							2b	
2.9.	**WAVE GENERATING CIRCUIT THEORY** **TR: TO 31-1-141-4, 31-1-141-10**								
2.9.1.	Oscillators							B	
2.9.2.	Multivibrators							A	
2.9.3.	Waveshaping Circuits							A	
2.10	**DIGITAL LOGIC CIRCUITS** **TR: TO 31-1-141-4, 31-1-141-9, 31-1-141-13**								
2.10.1.	**Theory**								
2.10.1.1.	Gates							B	
2.10.1.2.	Flip-flops							B	
2.10.1.3	Binary Numbering Systems							B	
2.10.2.	Digital to Analog (DA) and Analog to Digital (AD) Convertors Theory							B	
2.11.	**BASIC COMMUNICATIONS THEORY** **TR: TO 31-1-141-4, 31-1-141-7, 31-1-141-9, 31-1-141-11, 31-1-141-12, 31-1-141-13**								
2.11.1	Antennas							B	
2.11.2	Transmission Lines							B	
2.11.3	Data Busses							B	
2.11.4	Waveguides							B	
2.11.5	Modulation							B	
2.11.6.	**AM Receiver Signals**								
2.11.6.1	Measure Radio Frequency (RF)							1a	
2.11.6.2.	Measure Intermediate Frequency (IRF)							1a	
2.11.6.3.	Measure Audio Frequency (AF)							1a	
2.11.6.4.	Measure Local Oscillator (LO) Output							1a	
AF INDOCTRINATION									
2.12.	**TRAINING** **TR: AFI 36-2101, 36-2201**								
2.12.1.	**Responsibilities**								
2.12.1.1.	Trainee							A	
2.12.1.2.	Trainer							A	
2.12.1.3.	Supervisor							A	
2.12.2.	Evaluate Training Program							-	
2.12.3.	Identify Training Requirements							-	

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2.12.4.	**Plan and Supervise OJT**								
2.12.4.1.	Prepare Job Qualification Standards							-	
2.12.4.2.	Conduct Training							-	
2.12.4.3.	**Monitor Effectiveness of Training**								
2.12.4.3.1.	Career Knowledge							-	
2.12.4.3.2.	Job Proficiency Upgrade/Qualification							-	
2.12.4.3.3.	Evaluate Effectiveness of Training Programs							-	
2.13.	**AIR FORCE OCCUPATIONAL SAFETY AND HEALTH (AFOSH) PROGRAM** **TR: AFI 91-301**								
2.13.1.	Operational Risk Management (ORM) **TR: AFI 90-901**							B	
2.13.2.	Principles and Objectives of Safety Programs **TR: AFI 32-2001, 40-201, AFOSH Stds 91-50, 91-66, 127-56, TO 00-25-234, 31-1-141-1**							A	
2.13.3.	Lockout/Tagout Awareness **TR: 29 CFR 1910.147**							A	
2.13.4.	Hazardous Waste Operations and Emergency Response **TR: AFI 10-2501, 29 CFR 1910.120, AFOSH Std 48-8**							A	
2.13.5.	DOD Federal Hazards Communication Training Program **TR: DODI 6050.5**							A	
2.13.6.	Use Fire Extinguishers **TR: AFOSH Std 91-501**							b	
2.13.7.	Perform First Aid/CPR **TR: Current Air Force First Aid and CPR recognized organization training documents**							3c	
2.14.	**LOGISTICS**								
2.14.1.	Processes and Principles **TR: AFDD 2-4**							A	
2.14.2.	**Supply** **TR: AFMAN 23-110**								
2.14.2.1.	Basic AF Supply System Principles							A	
2.14.2.2.	Use AF Supply System Procedures							-	
2.15.	**PUBLICATIONS**								
2.15.1.	AF Publications **TR: AFI 33-360**							A	

1. Tasks, Knowledge and Technical References		2. Core tasks	3. Certification For OJT					4. Proficiency Codes Used to Indicate Training Provided	
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2.15.2.	MAJCOM Publications and Local Operating Instructions **TR: AFI 33-360**							A	
2.15.3.	TOs/TIs **TR: AFPD 21-3, TI 01-1-01, TO 00-5-1, 00-5-2, 00-5-2-2, 00-5-15-WA-1**							A	
2.16.	**SUPERVISION AND MANAGEMENT** **TR: AFP 35-49, AFPAM 36-2241**								
2.16.1.	Career Information and Progression **TR: AFI 36-2101, RI9S100 CFETP Part 1**							A	
2.16.2.	**Brief Newly Assigned Personnel** **TR: AFI 36-2903, 10-248, 36-2818, 91-301**								
2.16.2.1.	Mission							-	
2.16.2.2.	Orientation to Work Center							-	
2.16.2.3.	Security							-	
2.16.2.4.	Safety							-	
2.16.2.5.	Responsibilities							-	
2.16.3.	Assign Personnel to Positions							-	
2.16.4.	Orient New Personnel							-	
2.16.5.	**Plan/Schedule**								
2.16.5.1.	Work Assignments							-	
2.15.5.2.	Shifts							-	
2.16.5.3.	Priorities							-	
2.16.6.	**Establish/Interpret**								
2.16.6.1.	Work Methods/Controls							-	
2.16.6.2.	Performance Standards							-	
2.16.6.3.	Priorities							-	
2.16.6.4.	Local Operating Instructions							-	
2.16.7.	Evaluate Space/Personnel/Resource Requirements							-	
2.16.8.	Coordinate Work with Other Personnel							-	
2.16.9.	Resolve Technical Problems Encountered by Subordinate Personnel							-	
2.16.10.	**Prepare** **TR: AFH 33-337**								
2.16.10.1.	Trip Reports							-	
2.16.10.2.	Briefings/Tours							-	
2.16.10.3.	Personnel Action Requests							-	
2.16.10.4.	Correspondence							-	
2.16.10.5.	Messages							-	
2.16.11.	Perform Self-Assessments **TR: AFI 90-201**							-	

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2.16.12.	Contract Management **TR: AFMAN 64-108, FAR 37.101**							-	
2.16.13.	Project Authorizations **TR: Local Instructions**							-	
2.16.14.	Contractor Protocol **TR: AFMAN 64-108, FAR 37**							-	
2.17.	**SECURITY** **TR: AFI 31-401**								
2.17.1.	COMSEC/COMPUSEC **TR: AFI 33-201**							A	
2.17.2.	RI 9S100 OPSEC **TR: AFI 10-701, Applicable Security Classification Guide**							A	
2.17.3.	Information Security **TR: AFI 31-401, Applicable Security Classification Guide**							A	
TECHNICAL SKILLS									
2.18.	**SOLDERING AND CONNECTORS**								
2.18.1.	Solder and Desolder **TR: AFOSH Stds 91-5, 91-501, 161-2; 00-25-259, 1-1A-14, 31-1-141-15**							2b	
2.18.2.	Assemble Solderless Connectors **TR: TO 1-1A-14, 31-1-141-15**							2b	
2.19.	**COMPUTER APPLICATIONS**								
2.19.1.	**Troubleshooting Methods and Procedures** **TR: TO 31-1-141 Series**								
2.19.1.1.	Decision Making/Problem Solving							B	
2.19.1.2.	Troubleshooting Theory/Technique							2b	
2.19.2.	**PCs**								
2.19.2.1.	Theory **TR: TO 31-1-141 Series, Upgrading and Repairing PCs (17th Ed), Que Publishing, 2006, Scott Mueller**							B	
2.19.2.2.	Computer/Network Security **TR: AFI 33-202, Computer Security Basics, (2nd Ed), O'Reilly and Associates, 2006, Rick Lehtinen, G.T. Gangemi, Sr.**							B	
2.19.2.3.	Computer Communications and Networks **TR: TCP/IP Network Administration, O'Reilly and Associates, 1994, Craig Hunt**							B	
2.19.2.4.	Maintain/Install Computer Hardware Systems **TR: TO 31-1-141 Series, Scott Mueller, Upgrading and Repairing PCs (17th Ed), Que Publishing**							2b	
2.19.3.	**Use PC System Software**								
2.19.3.1.	Operating System							2b	
2.19.3.2.	Word Processor							2b	
2.19.3.3.	Spreadsheet							2b	

1. Tasks, Knowledge and Technical References		2. Core tasks	3. Certification For OJT					4. Proficiency Codes Used to Indicate Training Provided	
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			Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials		
2.19.3.4.	Database							B	
2.19.3.5.	Presentation Application							2b	
2.19.3.6.	E-mail							2b	
2.19.3.7.	Electronic Forms							2b	
2.19.3.8.	Internet Browsers							2b	
2.19.3.9.	Internet Document Markup							-	
2.19.3.10.	Install Software							-	
2.19.3.11.	Use input/output/storage devices							-	
2.19.4.	**Workstations**								
2.19.4.1.	Theory **TR: Unix in a Nutshell (4th Ed), O'Reilly and Associates, 2005, Arnold Robins; SUN Microsystems Manuals**							B	
2.19.4.2	UNIX **TR: Unix in a Nutshell (4th Ed), O'Reilly and Associates, 2005, Arnold Robins; Using csh & tsch, O'Reilly and Associates, 1995, Paul DuBois; Learning the vi editor (6th Ed), O'Reilly and Associates, 2005, Linda Lamb, Arnold Robins**							2b	
2.19.4.3.	System Administration **TR: Essential System Administration, O'Reilly and Associates, 2002, Aeleen Frisch**							B	
TECHNICAL KNOWLEDGE									
2.20.	**MATHEMATICS** **TR: Precalculus (6th Ed), 2004, Houghton Mifflin Company, Hostetler, Robert P., Larson, Ron**								
2.20.1.	Basic Algebra							2b	
2.20.2.	Basic Trigonometry							2b	
2.20.3.	Statistics							2b	
2.20.4.	Probability							2b	
2.21.	**APPLIED SCIENCES** **TR: College Physics (4th Ed), 1990, Prentice Hall, Wilson, Jerry D., and Anthony J. Buffa; Modern Physics (2nd Ed), 1996, Wiley, Krane, Kenneth S.**								
2.21.1.	Classical Mechanics							B	
2.21.2.	Wave Mechanics							B	
2.21.3.	Thermodynamics							B	
2.21.4.	Electricity and Magnetism							B	
2.21.5.	Light and Optics							B	
2.21.6.	Modern Physics							B	
2.22.	**PHENOMENOLOGY**								
2.22.1.	Geophysical **TR: Earthquakes, W.H. Freeman and Company, 1988, Richter, Charles F.; Elementary Seismology, W.H. Freeman and Company, 1958, Bolt, Bruce; Modern Global Seismology, Academic Press, 1995, Lay, Thorne, Wallace, Terry C.**							B	
2.22.2.	RADAR/RF **TR: Introduction to Radar Systems, McGraw-Hill, 1980, Skolnik, Merrill; Radar Handbook (2nd Ed), McGraw-Hill, 1990, Skolnik, Merrill; Introduction to Airborne Radar, Hughes Aircraft Co, 1983, Stimson, G.W.; Principles of Modern Radar, Chapman & Hall, 1987, Eaves, Jerry, Reedy, Edward**							B	

1. Tasks, Knowledge and Technical References		2. Core tasks	3. Certification For OJT					4. Proficiency Codes Used to Indicate Training Provided	
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2.22.3.	Electro-Optic **TR: Modern Optical Engineering (2nd Ed), McGraw-Hill, 1990, Smith, Warren; Lasers, Wiley Interscience, 1988, Milonni, Peter and Eberly, Joseph; The Infrared Handbook, Environmental Research Institute of Michigan, 1985, Wolfe and Zissis, Editors**							B	
2.22.4.	Nuclear							B	
2.22.5.	Chemistry							B	
2.23.	**MISSIONS AND ORGANIZATIONS** **TR: Titles Classified**								
2.23.1.	Community Structure							A	
2.23.2.	Roles and Responsibilities							A	
2.23.3.	General Principles							A	
2.23.4.	National and Theatre Assets							A	
2.23.5.	Operational Applications							A	

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			Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials		
3.1.	**SECURITY AND SAFETY**								
3.1.1.	RI9S100 Maintenance OPSEC **TR: Applicable Security Classification Guide**							B	
3.1.2.	General Safety Practices **TR: TO 00-25-234, AFOSH Stds 91-50, 91-66, AFI 91-301, 91-302**							B	
3.1.3.	Handle Compressed Gases **TR: DoD 4140.1-R, OSHA Reg 29 CFR 1910.101**							2b	
3.1.4.	Use Personal Protective Equipment **TR: AFOSH Std 91-501**							2b	
3.1.5.	Apply Hazardous Energy Control and Tags **TR: AFOSH Stds 91-501, 91-66**							2b	
3.1.6.	DOD Hazardous Communication Training Program **TR: AFI 90-821**							A	
3.1.7.	Hazardous Material, Waste Management and Emergency Response **TR: AFI 90-821**							A	
3.1.8.	USAF Mishap Prevention Program **TR: AFI 91-202**							A	
3.1.9.	Material Handling and Storage **TR: AFOSH Std 91-46**							A	
3.2.	**MAINTENANCE PRACTICES**								
3.2.1.	Troubleshooting Theory							B	
3.2.2.	Corrosion Control Theory **TR: TO 1-1-8, 35-1-3; AFI 21-101; CENI 21-110**							B	
3.2.3.	Workmanship Standards **TR: TO 00-25-234, 31-1-75**							B	
3.2.4.	Tools **TR: TO 32-1-101, 32-1-151, 32-1-2; AFI 21-101**								
3.2.4.1.	Use Tools							2b	
3.2.4.2.	Maintain Tools							2b	
3.2.4.3.	Control Tools							2b	
3.2.5.	Test Measurement Diagnostic Equipment Principles **TR: TO 33K-1-100-1, 33K-1-100-2, 00-25-234, 33-1-27, 33-1-32, 00-20-14; AFI 21-101**							B	
3.2.6.	Electrostatic Discharge Control Principles **TR: TO 00-25-234**							B	
3.2.7.	Grounding Systems **TR: TO 00-25-234**							B	

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			Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials		
3.2.8.	Maintain Wiring and Cabling **TR: TO 00-25-234; TI 2W-1-1**							2b	
3.3.	**MAINTENANCE MANAGEMENT PRINCIPLES** **TR: AFSCIs 21-560 V2, 21-561 V2, 21-570 V2; CENI 21-8; CENR 57-2**								
3.3.1.	Specific Technique Maintenance Management **TR: AFI 21-101 AFTAC Sup, CENI 21-110**							B	
3.3.2.	**AFTAC Maintenance Management** **TR: AFI 21-101 AFTAC Sup, CENI 21-110**								
3.3.2.1.	Maintenance Organization							B	
3.3.2.2.	Work Center Programs							B	
3.3.2.3.	Maintenance Evaluation Program **TR: CENI 21-101**							B	
3.3.3.	Complete Maintenance Documentation **TR: AFJMAN 23-215; AFI 21-101 AFTAC Sup, CENI 21-110; TO 00-35D-54**							2b	
3.3.4.	Complete Maintenance Data Collection **TR: AFI 21-101 AFTAC Sup, CENI 21-110**							2b	
3.3.5.	Configuration Control **TR: AFI 21-101 AFTAC Sup, CENI 21-110**							B	
3.4.	**SUPPLY AND TRANSPORTATION** **TR: AFI 23-215, AFM 23-110, CENI 21-Series, TI -06 Series**								
3.4.1.	**USAF Supply System**								
3.4.1.1.	Use Forward Supply Point							2b	
3.4.1.2.	Use Bench/Shop Stock System							2b	
3.4.1.3.	Equipment Accounts							B	
3.4.2.	**Supply Procedures** **TR: CENI 23- Series**								
3.4.2.1.	USAF Logistics							B	
3.4.2.2.	Depot Logistics							B	
3.4.3.	**Shipping, Packing and Handling** **TR: AFPD 23-2; TOs 00-25-234, 00-35D-54, 00-110N Series; TI 00-85A-16, CENI 24-1**								
3.4.3.1.	Requirements							B	
3.4.3.2.	Transportation Procedures							B	
3.4.3.3.	Hazardous Materials Shipping Requirements							B	
3.5.	**PUBLICATIONS**								
3.5.1	**TI/TO Library** **TR: TO 00-5-1, 00-5-2, 00-5-2-2, 00-5-102, 00-5-15; TI 0-1-01**								
3.5.1.1.	TODO Functions							A	

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3.5.1.2.	Perform TODA Functions							2b	
3.5.1.3.	Use Technical Publications							2b	
3.5.2.	Submit AFTO 22							2b	
3.5.3.	Local Preventative Maintenance Routines (PMR) **TR: AFI 21-101, TO 00-20-1, 00-20-8**							B	
3.5.4.	Perform PMRs							2b	
3.6.	**TRAVEL REQUIREMENTS**								
3.6.1.	Use Foreign Clearence Guide **TR: DoD Foreign Clearance Guide (online)**							2b	
3.6.2.	Foreign Travel Familiarization							B	
3.7.	**FIELD SUBSYSTEM** **TR: TI 2-1-1, 2-ADSS-1**								
3.7.1.	**Sensor Site**								
3.7.1.1.	**Short Period Seismometer** **TR: TI 2S-SP-1**								
3.7.1.1.1.	Theory of Operation							B	
3.7.1.1.2.	Operate/Maintain							2b	
3.7.1.1.3.	Troubleshoot							2b	
3.7.1.1.4.	Remove and Replace							2b	
3.7.1.2.	**Broadband Seismometer** **TR: TI 2S-LP/BB-1, 2S-BB/CMG3TB-1**								
3.7.1.2.1.	Theory of Operation							B	
3.7.1.2.2.	Operate/Maintain							2b	
3.7.1.2.3.	Troubleshoot							2b	
3.7.1.2.4.	Remove and Replace							2b	
3.7.1.3.	**Remote Digitizer** **TR: TI 2S-AIMA-1.1, 2S-AIM24S/3.0-1, 2WS-SW/Winvisor/1.1-1**								
3.7.1.3.1.	Theory of Operation							B	
3.7.1.3.2.	Operate/Maintain							2b	
3.7.1.3.3.	Troubleshoot							2b	
3.7.1.3.4.	Remove and Replace							2b	
3.7.1.4.	**Wellhead Termination Unit** **TR: TI 2-ADSS-1**								
3.7.1.4.1.	Theory of Operation							B	
3.7.1.4.2.	Operate/Maintain							2b	
3.7.1.4.3.	Troubleshoot							2b	
3.7.2.	**Central Data Collection Point**								
3.7.2.1.	**Data Acquisition Rack** **TR: TI 2S-CIM3/2.1-1**								
3.7.2.1.1.	Theory of Operation							B	
3.7.2.1.2.	Operate/Maintain							2b	

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3.7.2.1.3.	Troubleshoot							2b	
3.7.2.2.	**Workstation** **TR: TI 2WS-Series**								
3.7.2.2.1.	Theory of Operation							B	
3.7.2.2.2.	Operate/Maintain							2b	
3.7.2.2.3.	Troubleshoot							2b	
3.7.2.3.	**Power Subsystem** **TR: TI 2P-UPS/12-1, 2P-SPS5087-1, 2P-UPS/Micro-1**								
3.7.2.3.1.	Theory of Operation							B	
3.7.2.3.2.	Operate/Maintain							2b	
3.7.2.3.3.	Troubleshoot							2b	
3.8.	**NETWORK COMMUNICATIONS SYSTEM** **TR: 2RDL Series**								
3.8.1.	Communication Interfaces							B	
3.8.2.	**WAN**								
3.8.2.1	Theory of Operation							B	
3.8.3.	**LAN**								
3.8.3.1.	Theory of Operation							B	
3.8.3.2.	Operate/Maintain							2b	
3.8.3.3.	Troubleshoot							2b	
3.8.4.	**Intrasite Communications**								
3.8.4.1.	**MODEM**								
3.8.4.1.1.	Theory of Operation							B	
3.8.4.1.2.	Operate/Maintain							2b	
3.8.4.1.3.	Troubleshoot							2b	
3.8.4.2.	**Wireless Tranciever**								
3.8.4.2.1.	Theory of Operation							B	
3.8.4.2.1.	Operate/Maintain							2b	
3.8.4.2.3.	Troubleshoot							2b	
3.9.	**SYSTEMS CONTROL CENTER** **TR: TI 2-NDC-2**								
3.9.1.	Theory of Operation							B	
3.9.2.	Monitoring/Reporting							B	
3.9.3.	System Tools							B	
3.10.	**TMDE**								
3.10.1.	Time Domain Reflectometer							A	
3.10.2.	Use Earth Test							2b	
3.10.3.	Line Megohmmeter							A	
3.10.4.	Arrestor Tester							A	
3.10.5.	Use DC Power Supply							2b	
3.10.6.	Audio Test Set/Communications Tester							A	

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3.10.7. Spectrum Analyzer							A	
3.10.8. Use Digital Multimeter							2b	
3.10.9. Use Storage Oscilloscope							2b	
3.10.10. RF Communications Tester							A	

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4.1.	**SECURITY**								
4.1.1.	RI9S100 OPSEC **TR: Applicable Security Classification Guide**							B	
4.2.	**ENERGY PHENOMENOLOGY**								
4.2.1.	Remote Sensing							B	
4.2.2.	**Nuclear Explosions** **TR: Effects of Nuclear Weapons, Gladstone, Samuel, Knowledge Publications, 2006**								
4.2.2.1.	Phenomena							B	
4.2.2.2.	Burst Types							B	
4.2.2.3.	Observables							B	
4.2.3.	**Conventional Explosions**								
4.2.3.1.	Types							B	
4.2.3.2.	Observables							B	
4.2.3.3.	Delivery Systems							B	
4.2.4.	**Directed Energy** **TR: Effects of Directed Energy Weapons, 1st Ed. Directed Energy Professional Society, 2009.**								
4.2.4.1.	Types							A	
4.2.4.2.	Observables							A	
4.2.5.	**Energy Propagation**								
4.2.5.1	Atmospheric Layers							B	
4.3.	**DATA COLLECTION**								
4.3.1.	Electromagnetics							B	
4.3.2.	Basic Sensor Design							B	
4.3.3.	**Data Acquisition**								
4.3.3.1.	Theory							B	
4.3.3.2.	Signal Conditioning							B	
4.3.3.3.	Sampling							B	
4.3.4.	Collection Parameters							B	
4.4.	**DETECTION PHENOMENOLOGY**								
4.4.1.	Radio Frequency (RF) **TR: High Frequency Techniques; An introduction to RF and Microwave Engineering, White, Joseph F., Wiley-IEEE Press, 2004.**							B	
4.4.2.	**Radar** **TR: Principles of Modern Radar: Basic Principles. Richards, Mark A., SciTech Publishing, 2010.; Introduction to Airborne Radar. 2nd Ed. Stimson, G.W., The Institution of Engineering and Technology, 1998.; Phased-Array Radar Design: Application of Radar Fundamentals. Jeffrey, Tom., Scitech Pub Inc, 2009.**								
4.4.2.1.	Theory							B	
4.4.2.2.	Line of Sight							B	
4.4.2.3.	Phased Array							B	
4.4.2.4.	Over the Horizon							B	

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4.4.2.5.	Synthetic Aperture							B	
4.4.2.6.	Moving Target Indicator							B	
4.4.3.	**Electro-Optics** **TR: Optics for Dummies. Duree, Galem C. Jr., For Dummires, 2011.**								
4.4.3.1.	Theory							B	
4.4.3.2.	Sensors							B	
4.4.3.3.	**Infrared (IR)** **TR: Fundamentals of Infrared, Detector Operations and Testing 2nd Ed., Vincent, J. D., Wileey, 2012.**								
4.4.3.3.1.	Theory							B	
4.4.3.3.2.	Thermal Imaging							B	
4.4.3.3.3.	Overhead Persistent IR (OPIR)							B	
4.4.4.	Nuclear Radiation							B	
4.4.5.	Spectral **TR: Remote Sensing: Models and Methods for Image Processing 3rd Ed. Schowengerdt, Robert A., Academic Press, 2006**							B	
4.5.	**ORBITAL MECHANICS** **TR: Handbook of Geophysics and the Space Environment. Adolph, S. ed. Jursa, Air Force Geophysics Laboratory, 1985.; Orbital Mechanics for Engineering Students 2nd Ed. Curtis, Howard. Butterworth-Heinemann, 2009.**								
4.5.1.	**Orbital Parameters**								
4.5.1.1.	Ellipse Parameters							B	
4.5.1.2.	Orbital Elements							B	
4.5.2.	**Orbital Characteristics**								
4.5.2.1.	Ground Tracks							B	
4.5.2.2.	Perturbations							B	
4.5.2.3.	Types of Orbits							B	
4.5.3.	**Orbital Geometry**								
4.5.3.1.	Satellite Tracking							B	
4.5.3.2.	Sensor Geometry							B	
4.6.	**Collection Systems**								
4.6.1.	RF							B	
4.6.2.	Radar							B	
4.6.3.	Electro-Optical							B	
4.6.4.	**Nuclear**								
4.6.4.1.	Platforms							B	
4.6.4.2.	Sensors							B	
4.6.5.	Perform Remote Sensing Exercise							2b	
4.6.6.	Data (Queing/Tipping)							B	
4.6.7.	Reports							A	
4.6.8.	Military Coordinate Systems							B	

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			Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials		
5.1.	**SECURITY AND SAFETY**								
5.1.1.	RI9S100 Maintenance OPSEC **TR: Applicable Security Classification Guide**							B	
5.1.2.	General Safety Practices **TR: TO 00-25-234, AFOSH Stds 91-50, 91-66, AFI 91-202, 91-302**							B	
5.1.3.	Handle Compressed Gases **TR: DoD 4140.1-R & OSHA Reg 29 CFR 1910.101**							2b	
5.1.4.	Use Personal Protective Equipment **TR: AFOSH Std 91-501**							2b	
5.1.5.	Apply Hazardous Energy Control and Tags **TR: AFOSH Stds 91-501, 91-66**							2b	
5.1.6.	DOD Hazardous Communication Training Program **TR: AFI 90-821**							A	
5.1.7.	Hazardous Material, Waste Management, and Emergency Response **TR: AFI 90-821**							A	
5.1.8.	USAF Mishap Prevention Program **TR: AFI 91-202**							A	
5.1.9	Material Handling and Storage **TR: AFOSH Std 91-46**							A	
5.2.	**MAINTENANCE PRACTICES**								
5.2.1.	Troubleshooting Theory							B	
5.2.2.	Corrosion Control Theory **TR: TO 1-1-8, 31-1-3; AFI 21-101; CENI 21-110**							B	
5.2.3.	Workmanship Standards **TR: TO 00-25-234, 31-1-75**							B	
5.2.4.	Tools **TR: TO 32-1-101, 32-1-151, 32-1-2; AFI 21-101**								
5.2.4.1.	Use Tools							2b	
5.2.4.2.	Maintain Tools							2b	
5.2.4.3.	Control Tools							2b	
5.2.5.	Test Measurement Diagnostic Equipment Principles **TR: TO 33K-1-100-1, 33K-1-100-2, 00-25-234, 33-1-27, 33-1-32, 00-20-14; AFI 21-101**							B	
5.2.6.	Electrostatic Discharge Control Principles **TR: TO 00-25-234**							B	
5.2.7.	Grounding Systems **TR: TO 31-10-24**							B	

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5.2.8.	Maintain Wiring and Cabling **TR: TO 00-25-234; TI 2W-1-1**							2b	
5.2.9.	Maintain Tubing, Fittings, and Valves **TR: TO 00-25-223, Swagelok Tube Fitters Manual**							2b	
5.3.	**MAINTENANCE MANAGEMENT PRINCIPLES** **TR: AFI 21-560 V2, 21-561 V2, 21-570 V2; CENI 21-8, CENR 57-2**								
5.3.1.	Specific Technique Maintenance Management **TR: AFI 21-101 AFTAC Sup, CENI 21-110**							B	
5.3.2.	**Maintenance Management** **TR: AFI 21-101 AFTAC Sup, CENI 21-110**								
5.3.2.1.	Maintenance Orginization							B	
5.3.2.2.	Work Center Programs							B	
5.3.2.3.	Maintenance Evaluation Program							B	
5.3.3.	Complete Maintenance Documentation **TR: AFJMAN 23-215; AFI 21-101 AFTAC Sup, CENI 21-110; TO 00-35D-54**							2b	
5.3.4.	Complete Maintenance Data Collection **TR: AFI 21-101 AFTAC Sup, CENI 21-110**							2b	
5.3.5.	Configuration Control **TR: CENR 57-2, AFPD 10-6, AFI 10-601, 21-116, 23-101, 21-109, TO 00-20-1**							B	
5.4.	**SUPPLY AND TRANSPORTATION** **TR: TO 00-33A-1001; AFJMAN 23-215; AFM 23-110; CENI 21-Series; TI -06 Series**								
5.4.1.	**USAF Supply System**								
5.4.1.1.	Use Forward Supply Point							2b	
5.4.1.2.	Use Bench/Shop Stock System							2b	
5.4.1.3.	Equipment Accounts							B	
5.4.2.	**Supply Procedures** **TR: CENI 23- Series**								
5.4.2.1.	USAF Logistics							B	
5.4.2.2.	Depot Logistics							B	
5.4.3.	**Shipping, Packing, and Handling** **TR: AFPD 23-2; TOs 00-25-234, 00-35D-54, 00-110N Series; TI 00-85A-16; CENI 24-1**								
5.4.3.1.	Requirements							B	
5.4.3.2.	Transportation Procedures							B	
5.4.3.3.	Hazardous Materials Shipping Requirements							B	

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5.5.	**PUBLICATIONS**								
5.5.1.	**TI/TO Library** **TR: TO 00-5-1, 00-5-2, 00-5-2-2, 00-5-102, 00-5-15; TI 0-1-01**								
5.5.1.1.	TODO Functions							A	
5.5.1.2.	Perform TODA Functions							2b	
5.5.1.3.	Use Technical Publications							2b	
5.5.2.	Submit AFTO Form 22 **TR: TO 00-5-1**							2b	
5.5.3.	Local Preventative Maintenance Routines (PMR) **TR: AFI 21-116; TO 00-20-1, 00-20-8**							B	
5.5.4.	Perform PMRs							2b	
5.6.	**TRAVEL REQUIREMENTS**								
5.6.1.	Use Foreign Clearance Guide **TR: DoD Foreign Clearance Guide (online)**							2b	
5.6.2.	Foreign Travel Familiarization							B	
5.7.	**NUCLEAR MATERIALS PHENOMENOLOGY** **TR: Nuclear Energy and Proliferation Workshop notes, Nov 96, The Undeclared Bomb, Ballinger Publishing Co., Spector, Leonard, 1988, Effects of Nuclear Weapons, US DoD, Gladstone and Dolan, 1977**								
5.7.1.	Effects of Nuclear Weapons							B	
5.7.2.	Nuclear Reactors **TR: General Physics, Giancol, 1984, Van Nostrands Scientific Encyclopedia, Considine, 1995, Principles of Nuclear Physics, Atomic Weapons Training Group, 1969**							B	
5.7.3.	Meteorological Effects and Sample Degradation							B	
5.7.4.	**Sampling Theory** **TR: 3D-ACR-1, 3D-ACR-2, 1A-AARE-1**								
5.7.4.1.	Cryogenic Distillation							B	
5.7.4.2.	Particulate							B	
5.7.4.3.	Whole Air							B	
5.7.5.	**Analysis** **TR: Radiation Detection and Measurement (2nd Ed), John Wiley and Sons, Knoll, 1989**								
5.7.5.1.	Detector Theory							B	
5.7.5.2.	Anti/Coincidence Counting							A	
5.7.5.3.	Radioactive Decay							B	

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5.8.	**GROUND BASED COLLECTION MISSIONS** **TR: General Subject Security Classification Guide, RPP Security Classification Guide, NDC&A Security Classification Guide, NPP Security Classification Guide**								
5.8.1.	National, DoD, and R&D Customer Relationships							B	
5.8.2.	Reactor Products Program							B	
5.8.3.	Nuclear Debris Collection and Analysis							B	
5.8.4.	Nuclear Plant Program							B	
5.8.5.	Missions and Treaties							B	
5.9.	**GROUND BASED PLATFORM SAMPLES** **TR: CENI 10-23-1, 10-14-1; CENI 10-103; ISO 14644 series**								
5.9.1.	**Sample Handling Procedures** **TR: TI 34-4-1-131**								
5.9.1.1.	Sample Lifecycle							B	
5.9.1.2.	Perform Sample Handling Procedures							2b	
5.9.2.	**Sample Contamination**								
5.9.2.1.	Threats and Outcomes of Contamination							B	
5.9.2.2.	Cleanroom Processes and Good Laboratory Practices							A	
5.10.	**NETWORK INTERFACE** **TR: IT E-Learning**								
5.10.1.	Network Theory							B	
5.10.2.	System Control							B	
5.10.3.	Perform Remote Troubleshooting							2b	
5.10.4.	Perform Network Troubleshooting							2b	
5.11.	**GROUND BASED COLLECTION PLATFORMS**								
5.11.1.	**Gaseous Collectors** **TR: TI 3D-ACR-1, 3D-ACR-2, 3D-ACR-6; CENI 10-23, 10-23-1**								
5.11.1.1.	Principles of Operation							B	
5.11.1.2.	Relationship of Pressure, Volume, and Temperature							B	
5.11.1.3.	Structural and Facility Power Requirements							B	
5.11.1.4.	Operate Ground Based Collection Platforms							2b	
5.11.1.5.	Use Forms							2b	

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5.11.1.6.	**Operator Maintenance**								
5.11.1.6.1.	Perform Leak Check							2b	
5.11.1.6.2.	Charge Helium System							2b	
5.11.1.6.3.	Replace Air Compressor							2b	
5.11.1.6.4.	Replace Inlet Air Filter							2b	
5.11.1.7.	**Normal Maintenance**								
5.11.1.7.1.	Maintain Sample Air System							2b	
5.11.1.7.2.	Maintain Helium System							2b	
5.11.1.7.3.	Maintain Argon System							2b	
5.11.1.7.4.	Maintain Temperature Sensing System							2b	
5.11.1.7.5.	Maintain Control System							2b	
5.11.1.7.6.	Maintain Power Distribution System							2b	
5.11.1.7.7.	Troubleshoot and Repair							2b	
5.11.1.8.	**Ancillary Equipment**								
5.11.1.8.1.	Principles of Operation **TR: Applicable Manufacturers Manual**							B	
5.11.1.8.2.	Basic Vacuum Theory **TR: Basic Vacuum Practice (3rd Ed), Varian, Inc., 1992**							B	
5.11.1.8.3.	Operate Vacuum Pump **TR: Applicable Manufacturers Manual**							2b	
5.11.1.8.4.	Maintain Ancillary Equipment **TR: Applicable Manufacturers Manual**							2b	
5.11.2.	**Particulate Collection Platforms** **TR: TI 13-AGFU-1, 13-AGFU-2, 13-AGFU-4, 13-AGFU-6; Applicable TR/TM**								
5.11.2.1.	Principles of Operation							B	
5.11.2.2.	Structural and Facility Power Requirements							B	
5.11.2.3.	Perform Remote Monitoring and State of Health							2b	
5.11.2.4.	Operate Particulate Collections Equipment							2b	
5.11.2.5.	**Maintenance**								
5.11.2.5.1	Maintain Blower Assembly							2b	
5.11.2.5.2.	Maintain Filter Paper Path							2b	
5.11.2.5.3.	Maintain Control Subsystem							2b	
5.11.2.5.4.	Maintain Analysis Subsystem							2b	
5.11.2.5.5.	Maintain Calibration Subsystem							2b	
5.11.2.5.6.	Maintain Barcode Subsystem							2b	
5.11.2.5.7.	Maintain Power Subsystem							2b	
5.11.2.5.8.	Troubleshoot and Repair							2b	

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			Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials		
6.1.	**SECURITY**								
6.1.1.	RI9S100 OPSEC **TR: Applicable Security Classification Guide**							B	
6.2.	**SEISMIC** **TR: TI 2-NDC-TNG1; DO OI 10-2; CENI 10-102; Eiby, G.A., Earthquakes. Van Nustrand Reeinhold, 1980.; Richter, Charles F. Elementary Seismology. W.H. Freeman and Company, 1958.; Bolt, Bruce, Nuclear Explosions and Earthquakes. W.H. Freeman and Company, 1976.; Lay, Thorne and Wallace. Modern Global Seismology. Academic Press, 1995.; Simon, Ruth B. Earthquake Interpretations. Woodward-Clyde consultants, 1981.; Dahlman, Olda and hans Israelson. Monitoring Underground Nuclear Explosions. Elseevier Scientific Pub Co, 1977.**								
6.2.1.	**Theory and Application**								
6.2.1.1.	Field Subsystem							B	
6.2.1.2.	HQ Subsystem							B	
6.2.1.3.	Array Characteristics							B	
6.2.2.	**Data Analysis**								
6.2.2.1.	Theory and Application							B	
6.2.2.2.	Distinguish Signal from Noise and Background							2b	
6.2.2.3.	Differentiate Between Natural and Man-made Events							2b	
6.2.2.4.	Perform Signal Measurement							2b	
6.2.2.5.	Recognize/Identify Later Phases							2b	
6.2.2.6.	Determine Signal Types							2b	
6.2.2.7.	Determine Signal Azimuth							2b	
6.2.2.8.	Associate SP and LP Data							2b	
6.2.2.9.	Form Events							2b	
6.2.2.10.	**Apply Event Refinement Techniques**								
6.2.2.10.1	Validity							2b	
6.2.2.10.2.	Location							2b	
6.2.2.10.3.	Distance							2b	
6.2.2.10.4.	Depth							2b	
6.2.2.10.5.	Magnitude							2b	
6.2.2.11.	Use Analysis Tools							2b	
6.2.2.12.	Validate Automatic Signal Detection							2b	
6.2.3.	Use Application Software							2b	
6.2.4.	Workflow Familiarization							A	

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6.3.	**HYDROACOUSTIC** **TR: DO OI 10-1; Paker, Sybil P. Ed. The McGraw Hill Encyclopedia of Ocean and Atmospheric Sciences. McGraw Hill, Inc, 1977.**								
6.3.1.	Theory and Application							A	
6.3.2.	Field Subsystem							A	
6.3.3.	HQ Subsystem							A	
6.3.4.	Locations							A	
6.3.5.	**Data Analysis**								
6.3.5.1.	Theory and Application							A	
6.3.5.2.	Signal Types							A	
6.3.5.3.	Data Processing							A	

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7.1.	**SECURITY**								
7.1.1.	RI9S100 OPSEC **TR: Applicable Security Classification Guide**							B	
7.2.	**WORKSTATION OPERATING SYSTEM FUNDAMENTALS** **TR: Unix in a Nutshell (4th Ed), O'Reilly and Associates, 2005, Arnold Robins; SUN Microsystems Manuals**								
7.2.1.	Identify Basic Characteristics							B	
7.2.2.	File Structure and File System							B	
7.3.	**WORKSTATION OPERATING SYSTEM** **TR: Unix in a Nutshell (4th Ed), O'Reilly and Associates, 2005, Arnold Robins; Using csh & tsch, O'Reilly and Associates, 1995, Paul DuBois; Learning the vi editor (6th Ed), O'Reilly and Associates, 2005, Linda Lamb, Arnold Robins; SUN Microsystems manuals**								
7.3.1.	Use Operating System Commands							2b	
7.3.2.	Use vi Text Editor							2b	
7.3.3.	Customize the Operating System							2b	
7.4.	**SYSTEM ADMINISTRATION** **TR: Essential System Administration, O'Reilly and Associates, 2002, Aeleen Frisch; SUN Microsystems Manuals**								
7.4.1.	Perform Startup/Shutdown Procedures							2b	
7.4.2	Maintain System Configuration							2b	
7.4.3.	Manage System Processes							2b	
7.4.4.	Manage System Devices							2b	
7.4.5.	Use Backup, Restore and Tar Utilities							2b	
7.4.6.	Maintain System Security							2b	
7.4.7.	System Diagnostics							2b	
7.5.	**WORKSTATION NETWORKING** **TR: Managing NFS and NIS, O'Reilly and Associates, 1994, Hal Stern; TCP/IP Network Administration (3rd Ed), O'Reilly and Associates, 2002, Craig Hunt; IP Routing, O'Reilly and Associates, 2002, Ravi Malhotra; Ethernet: The Definitive Guide, O'Reilly and Associates, 2002, Charles Spurgeon; Cisco Systems Inc. Manuals**							2b	
7.6.	**WRITE SHELL SCRIPT** **TR: Using csh & tsch, O'Reilly and Associates, 1995, Paul DuBois, SUN Microsystems manuals**							2b	
7.7.	**INSTALL OPERATING SYSTEM** **TR: Essential System Administration, O'Reilly and Associates, 2002, Frisch, Aeleen.**							2b	

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8.1.	**ISR COMMUNITY STRUCTURE**								
8.1.1.	National Agencies							B	
8.1.2.	Joint Agencies							B	
8.1.3.	Service Organizations							B	
8.1.4.	**9S100 ROLES**								
8.1.4.1.	HQ AFTAC							B	
8.1.4.2.	AFTAC Detachments							B	
8.1.4.3.	NASIC							B	
8.1.4.4.	566 IS / NGA-D							B	
8.1.4.5.	Additional Units							B	
8.2.	**FUNCTIONS & CAPABILITIES OF ISR SYSTEMS**							B	
8.3.	**9S100 MANAGEMENT**								
8.3.1.	**Career Development**								
8.3.1.1.	CFETP							B	
8.3.1.2.	Career Progression							B	
8.3.1.3.	Career Field Management							A	
8.3.1.4.	Retention Rates							A	
8.3.1.5.	Sustainment							A	
8.3.2.	**Manpower**								
8.3.2.1.	UMD and UPMR							B	
8.3.2.2.	ACRs / OCRs							B	
8.3.2.3.	Manning Level / Fill Rates							B	
8.3.2.4.	Manning Assistance							A	
8.3.3.	**Budget**								
8.3.3.1.	Program Funding							A	
8.3.3.2.	Base Level Execution							B	
8.3.3.3.	Unit Level Execution							B	
8.3.3.4.	FIN Plan							B	
8.3.3.5.	Management Control Programs							A	
8.3.4.	**Support Agreements**								
8.3.4.1.	Inter-service							B	
8.3.4.2.	Tenant Responsibilities							B	

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ELECTRICAL KNOWLEDGE									
9.1.	**ELECTRICAL CIRCUIT OPERATION** **TR: TO 31-1-141-2, 31-1-141-9**								
9.1.1.	Direct Current (DC)							B	
9.1.2.	Alternating Current (AC)							B	
9.1.3.	Identify Common Curcuit Component Operating Principles							B	
9.1.4.	Basic Industrial Wiring							A	
9.1.5.	Troubleshooting and Problem Solving **TR: TO 31-1-141-5**							B	
TECHNICAL KNOWLEDGE									
9.2.	**MATH PRINCIPLES** **TR: TO 31-1-141, Vol V; College Algebra, 2nd Edition, Gilbert, Spencer and Gilbert; Elementary Statistics, 3rd Edition, Johnson**								
9.2.1.	Solve Basic Algebraic Equations							B	
9.2.2.	Solve exponential Equations							B	
9.2.3.	Number System Conversions							B	
9.3.	**ORBITAL MECHANICS**								
9.3.1.	Newtons Law							A	
9.3.2.	Keplers Law							A	
9.3.3.	Orbital Elements							A	
9.3.4.	**Orbital Characteristics**								
9.3.4.1.	Ground Tracks							A	
9.3.4.2.	Types of Orbits							A	
9.4.	**WAVE THEORY** **TR: Physics, 5th Edition, Addison-Wesley, 1992; Arthur Beiser**								
9.4.1.	Atomic Structure and Properties of Matter							A	
9.4.2.	Electromagnetic Spectrum							B	
9.4.3.	**Wave Propagation** **TR: Physics for Scientists and Engineers (3rd Ed.), Volume II, Saunders College Publishing, 1990, Serway, Raymond A.**								
9.4.3.1.	Reflection / Refraction							B	
9.4.3.2.	Diffusion / Dispersion							B	
9.4.3.3.	Absorption / Attenuation							B	
9.4.3.4.	Constructive / Destructive Interference							B	
9.4.3.5.	Doppler Shift							B	
9.4.3.6.	Diffraction							B	
9.4.3.7.	Effects of Different Media							B	

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9.5.	**PHENOMENOLOGY**								
9.5.1.	**Geophysical** **TR: Earthquakes, W.H. Freeman and Company, 1988; Richter, Charles F.; Elementary Seismology, W.H. Freeman and Company, 1958; Bolt, Bruce, Seismology, Academic Press, 1995**								
9.5.1.1.	Fundamentals							B	
9.5.1.2.	Sources							A	
9.5.1.3.	Detection							A	
9.5.1.4.	Signal Processing							A	
9.5.2.	**Electro-Optic** **TR: Modern Optical Engineering, 2nd Edition, McGraw-Hill, Inc., 1990, Smith, Warren J.; Lasers, Wiley-Interscience, 1988, Milonni, Peter W. and Eberly, Joseph H., The Infrared Handbook, revised edition, Environmental Research Institute of Michigan, 1985, Wolfe and Zissis, Editors**								
9.5.2.1.	Fundamentals							B	
9.5.2.2.	Sources							A	
9.5.2.3.	Detection							A	
9.5.2.4.	Signal Processing							A	
9.5.3.	**Material: Nuclear Particulate** **TR: AFPAM 32-4019, Chemical-Biological Warfare Commanders Guide; Chemical and Biological Warfare Proliferation Course: Defense Against Toxin Weapons, David R. Franz, US Army; Fundamentals of Microbiology, 4th edition, Bejamin/Cummings Publishing Company, 1994, I. Edward Alcamo**								
9.5.3.1.	Fundamentals							B	
9.5.3.2.	Sources							A	
9.5.3.3.	Detection							A	
9.5.3.4.	Signal Processing							A	
9.5.4.	**Nuclear Radiation** **TR: Effects of Nuclear Weapons, Gladstone & Dolan, US DoD 1977**								
9.5.4.1.	Fundamentals							B	
9.5.4.2.	Sources							A	
9.5.4.3.	Detection							A	
9.5.4.4.	Signal Processing							A	
9.5.5.	**Radar** **TR: Introduction to Radar Systems, McGraw-Hill, 1980, Merrill I.Skolnik; Radar Handbook, 2nd Edition, McGraw-Hill, 1990, Merrill I. Skolnik; Introduction to Airborne Radar, Hughes Aircraft Co, 1983, G. W. Stimson; Principles of Modern Radar, Chapman& Hall, 1987, Edited by Jerry L. Eaves & Edward K. Reedy**								
9.5.5.1.	Fundamentals							B	
9.5.5.2.	Sources							A	
9.5.5.3.	Detection							A	
9.5.5.4.	Signal Processing							A	

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9.5.6.	**Radio Frequency** **TR: High Frequency Techniques: Recent Advances and Applications, Bhattacharyya, A. Wiley and Sons. 1995**								
9.5.6.1.	Fundamentals							B	
9.5.6.2.	Sources							A	
9.5.6.3.	Detection							A	
9.5.6.4.	Signal Processing							A	
9.6.	**NUCLEAR EXPLOSION PHENOMENOLOGY**								
9.6.1.	Phenomena							B	
9.6.2.	Burst Types							B	
9.6.3.	Observables							B	
COMMUNITY MISSION AND ORGANIZATION									
9.7.	**MISSION AND ORGANIZATION**								
9.7.1.	Community Structure							A	
9.7.2.	National Organizations							A	
9.7.3.	Intelligence Cycle							A	
9.7.4.	Collections Management							A	
9.7.5.	Data Distribution Systems							A	
9.7.6.	Missions and Organizations with 9S100 Authorizations							A	
9.8.	**CAREER INFORMATION** **TR: AFI 36-2101; RI 9S100 CFETP; AFECD**								
9.8.1.	History of RI 9S100							A	
9.8.2.	Duties of RI 9S100							A	
9.9.	**SECURITY**								
9.9.1.	COMSEC / COMPUSEC							A	
9.9.2.	RI 9S100 OPSEC							B	
9.9.3.	Information Security							A	
9.10.	**TRAVEL REQUIREMENTS**								
9.10.1.	Foreign Travel Familiarization							A	
9.11.	**WORKCENTERS**								
9.11.1.	AFTAC							A	
9.11.2.	NASIC							A	
9.11.3.	566 IS							A	
9.11.4.	COCOMS							A	
9.11.5.	AFISRA							A	
9.11.6.	DIA							A	
9.11.7.	HAF/A2							A	
9.11.8.	AETC							A	

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TECHNICAL SKILLS									
9.12	**LOGISTICS** **TR: AFI 21-116, 23-215; AFM 23-110**								
9.12.1.	**USAF Supply System**								
9.12.1.1.	Forward Supply Point							A	
9.12.1.2.	Bench Stock System							A	
9.12.1.3.	Equipment Accounts							A	
9.12.2.	Functions and Responsibilities of Maintenance Management **TR: AFI 21-116, Local Guidance**							A	
9.13.	**COMPUTER COMMUNICATIONS AND NETWORKS** **TR: The Complete Modem Reference, Gilbert Held, 3rd Edition, ISBN: 0471154571; Internetworking Lans and Wans, Concepts, Techniques, and Methods, Gilbert Held, ISBN: 0471935689**								
9.13.1.	WAN							A	
9.13.2.	LAN							A	
9.13.3.	Military Networks							A	
9.13.4.	Routers, Hubs, and Switches							A	
9.14.	**BASIC COMMUNICATIONS THEORY**								
9.14.1.	Antennas							B	
9.14.2.	Transmission Lines							B	
9.14.3.	Data Busses							B	
9.14.4.	Waveguides							B	
9.14.5.	Modulation							B	