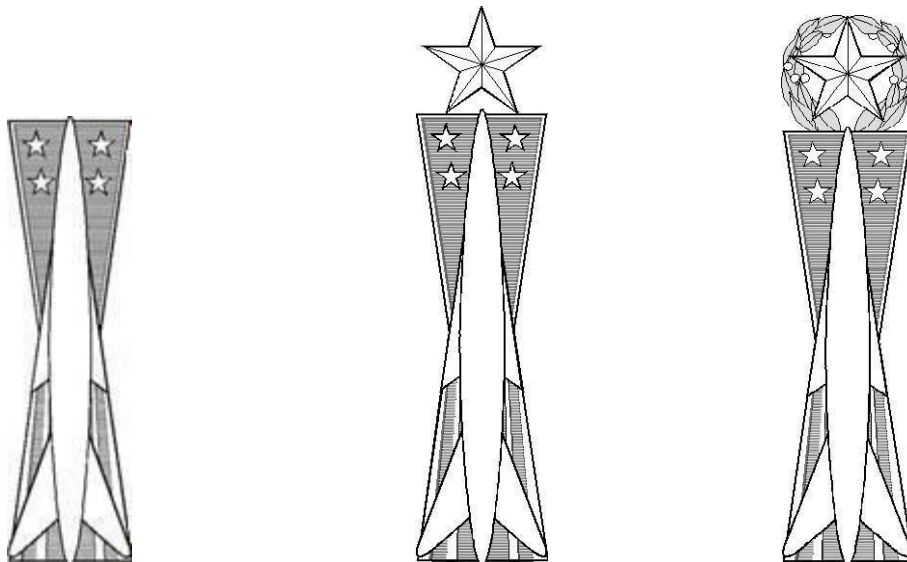


DEPARTMENT OF THE AIR FORCE
Headquarters US Air Force
Washington DC 20330-1030

CFETP 2M0X1
30 Dec 2021

**AFSC
2M0X1**

**MISSILE AND SPACE SYSTEMS ELECTRONIC
MAINTENANCE**



BASIC

SENIOR

MASTER

CAREER FIELD EDUCATION AND TRAINING PLAN

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**CAREER FIELD EDUCATION TRAINING PLAN
MISSILE AND SPACE SYSTEMS ELECTRONIC MAINTENANCE
AFSC 2M0X1**

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PREFACE

1. This Career Field Education and Training Plan (CFETP) is a comprehensive education and training document that identifies life cycle education and training requirements, training support resources, and minimum core task requirements for the 2M0X1, Missile and Space Systems Electronic Maintenance specialty. The CFETP provides personnel a clear career path to success and instills rigor in all aspects of career field training. This CFETP does not apply to uniformed members of the United States Space Force (USSF), Air National Guard (ANG), or Air Force Reserve (AFR). This CFETP was developed in accordance with DDAFI 36-2670, *Total Force Development*.

2. The CFETP consists of two parts; supervisors plan, manage, and control training within the 2M0X1 career field using both parts of the plan.

2.1. Part I provides information necessary for overall management of training in the career field. **Section A** explains how individuals will use the plan; **Section B** identifies career progression information, duties and responsibilities, training strategies, and career field path; **Section C** associates each skill level with specialty qualifications (knowledge, education, experience, training, and other); and **Section D** indicates training resource constraints. Some examples are: funds, manpower, equipment, and facilities. **Section E** identifies transition training guide requirements for SSgt through MSgt (not used).

2.2. At the unit level, supervisors and trainers use Part II to identify, plan, and conduct training commensurate with the overall goals of this plan. Part II includes the following: **Section A** identifies the Specialty Training Standard (STS), its purpose and how to use it, **Section B** contains the Course Objective list and training standards supervisors use to determine if Airmen satisfied training requirements. **Section C** identifies available on-the-job (OJT) support materials. An example is a Qualification Training Package, which may be developed to support proficiency training. **Section D** identifies a training course index supervisors can use to determine resources available to support training. **Section E** can be used to identify Major Command (MAJCOM) unique training requirements supervisors can use to determine additional training required for the associated qualification needs.

2.3. The attachments contain the specific references to tasks and guidance to use for training. It is separated into two separate training standards that are used, depending on whether your agency support Intercontinental Ballistic Missile (ICBM) maintenance of Air-Launched Cruise Missile (ALCM) maintenance.

3. Using guidance provided in the CFETP ensures individuals in this specialty receive effective and efficient training at the appropriate points in their career. This plan enables us to train today's workforce for tomorrow's tasks.

PART I

Section A - GENERAL INFORMATION

1. Purpose. This CFETP provides the information necessary for Air Force Career Field Managers, MAJCOM Functional Managers, commanders, training managers, supervisors, and trainers to plan, develop, manage, and conduct an effective and efficient career field training program. The plan outlines the training individuals in the Missile and Space Systems Electronic Maintenance specialty should receive in order to develop and progress throughout their career. This plan identifies initial skills, upgrade, qualification, advanced, and continuation training. The CFETP has several purposes—some are:

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

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

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

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

2. Uses. The plan is used by MAJCOM Functional Managers and supervisors at all levels to ensure comprehensive and cohesive training programs are available for each individual in the specialty.

2.1. AETC training personnel develop or revise formal resident, nonresident, field and exportable training based upon requirements established by the users and documented in Part II of the CFETP. They also work with the Air Force Career Field Manager to develop acquisition strategies for obtaining resources needed to provide the identified training.

2.2. MAJCOM Functional Managers ensure their training programs complement the CFETP mandatory initial, upgrade, and proficiency requirements. OJT, resident training, and contract training or exportable courses can satisfy identified requirements. Ensure MAJCOM-developed training to support this AFSC is identified for inclusion into the plan.

2.3. Each individual completes the mandatory training requirements specified in this plan. The list of courses in Part II is used as a reference to support training.

3. Coordination and Approval. The Air Force Career Field Manager is the approval authority. Also, the Air Force Career Field Manager will initiate an annual review of this document to ensure currency and accuracy. MAJCOM representatives and AETC training personnel will identify and coordinate on the career field training requirements. Using the list of courses in Part II, ensures elimination of duplicate training.

PART I

Section B - CAREER PROGRESSION AND INFORMATION

1. Specialty Descriptions. This section provides a description of the Missile and Space Systems Electronic Maintenance specialty and the duties and responsibilities performed within.

1.2. Specialty Summary. The Missile and Space Systems Electronic Maintenance specialty maintains, operates, and supervises maintenance on ground and air missiles, space lift boosters, payloads, guidance and control systems, and subsystems. Monitors, analyzes, and compiles system performance data. Performs and supervises maintenance on automated and manual electronic test, launch control, checkout, and support equipment (SE). Related DoD Occupational Subgroup: 112100.

1.3. Duties and Responsibilities. The Missile and Space Systems Electronic Maintenance specialty:

1.3.1. Monitors, operates, and supervises operation of consoles, fault display panels, and checkout equipment. Monitors status of ALCMs, ICBMs, space lift boosters, payloads, subsystems, and SE. Operates or oversees checkout and test equipment operation.

1.3.2. Supervises and performs missile, space lift booster, and payload systems maintenance and launch processing. Coordinates and oversees activities of contractor personnel during space launch activities. Operates, calibrates, inspects, maintains, or oversees these actions on missiles, missile and aircraft integration systems, aerospace vehicle equipment, operational ground equipment, automated and manual test equipment, space lift boosters, and payloads. Diagnoses flight data gathered during operational test launches. Performs ICBM coding activities.

1.3.3. Performs or assists malfunction analysis and repair of missile, space lift booster, and payload systems and subsystems. Determines system status. Operates or supervises operation of automated and manual test and checkout equipment to include performing calibrations. Disassembles, inspects, services, and replaces components and wiring. Modifies and repairs airframe and surfaces. Reassembles and verifies repairs, or supervises these actions, on electronic components of ALCMs, ICBMs, space lift boosters, and payloads. Records findings.

1.3.4. Performs or supervises maintenance on electronic equipment and coordinates launch processing and maintenance activities. Performs or supervises electronic and communication equipment maintenance. Uses or monitors use of manual and automatic checkout and test equipment to check integrated missile, space lift booster, payload systems, subsystems, and related electronic or communication equipment.

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

2.1. Apprentice Training (2M031A/B). Initial skills training in this specialty consists of tasks and knowledge training provided in the Missile and Space Systems Electronic Maintenance Apprentice Course

(2M031A) or the Missile and Space Systems Air-Launched Missile Maintenance Apprentice Course (2M031B). Individuals must successfully complete one of these initial skills courses to be awarded the 3-skill level in their appropriate shred-out.

2.2. Journeyman Training (2M051A). Upgrade training to the 5-skill level in the A-shred of the Missile and Space Systems Electronic Maintenance specialty consists of: (1) completing the mandatory requirements identified in the Air Force Enlisted Classification Directory (AFECD) and DDAFI 36-2670, *Total Force Development*, (2) completing the knowledge training provided in the 2M051A Career Development Course (CDC), (3) obtaining qualification on applicable weapon system and duty section 5-level core tasks identified in the applicable STS, and (4) meeting time in training requirements identified in Section C. Upgrade training can be performed by a qualified shop trainer, Maintenance Training Section (MTS) instructor, or by completing AETC Field Training Detachment (FTD) courses. After award of the 5-skill level, continuation training, when available, should be utilized based on an individual's particular duty position or other needs.

2.3. Journeyman Training (2M051B). Upgrade training to the 5-skill level in the B-shred of the Missile and Space Systems Electronic Maintenance specialty consists of: (1) completing the mandatory requirements identified in the AFECD and DDAFI 36-2670, (2) completing the knowledge training provided in the 2M051B CDC, (3) obtaining qualification on applicable weapon system and duty section 5-level core tasks identified in the applicable STS, and (4) meeting time in training requirements identified in Section C. Upgrade training can be performed by a qualified shop trainer or Training Section instructor. After award of the 5-skill level, continuation training, when available, should be utilized based on an individual's particular duty position or other needs.

2.4. Craftsman Training (2M071). Upgrade training to the 7-skill level in the Missile and Space Systems Electronic Maintenance specialty consists of: (1) completing the mandatory requirements in the AFECD and DDAFI 36-2670, (2) completing the in-resident Missile and Space Craftsman Course, (3) obtaining qualification on all 7-level core tasks identified in the STS, and (4) meeting time in training requirements identified in Section C. After award of the 7-skill level, continuation or advanced training, when available, should be utilized based on an individual's particular training needs.

2.5. Superintendent Training (2M090). Upgrade training to the 9-skill in the Missile and Space Systems Maintenance specialty consists of: (1) completion of the in-resident Senior Non-Commissioned Officer Academy, (2) and promoting to Senior Master Sergeant.

3. Training Decisions. The CFETP uses a building block approach (simple to complex) to encompass the entire spectrum of training requirements for the Missile and Space Systems Electronic Maintenance career field. The spectrum includes a strategy for when, where, and how to meet the training requirements. The strategy should be apparent and affordable to reduce duplication of training and eliminate a disjointed approach to training. The training decision for skill level progression is recommended by the MAJCOMs and AETC training personnel, with the final decision authority resting with the Air Force Career Field Manager.

3.1. Initial Skills. Initial skills (3-level) training is provided by AETC using the Missile and Space Systems Electronics Maintenance Apprentice Course or the Missile and Space Systems Air-Launched Missile Maintenance Course. Completion of the applicable course constitutes qualification on all 3-level core task requirements in that shred, unless course deviations are identified.

3.2. Journeyman Training (5-level). In order to successfully complete journeyman training and be awarded the 2M051A or 2M051B AFSC, personnel must first be awarded the 2M031A or 2M031B AFSC. Upon arrival to their unit of assignment, they are eligible to be enrolled in the 5-skill level upgrade training program. This starts the time-in-training countdown. They must also be qualified on all 5-level cores tasks identified in the STS for their assigned weapon system and duty section and complete the applicable 2M051A **OR** 2M051B CDC. Once they have 12 months' time-in-training (9 months for retrainees) from enrollment, then journeyman training is complete and personnel are awarded the 2M051A or 2M051B AFSC.

3.3. Craftsman Training (7-level). In order to successfully complete craftsman training and be awarded the 2M071 AFSC, personnel must complete journeyman training and have been awarded the 2M051A or 2M051B AFSC. Once they are given a promotion line number to Staff Sergeant, they are automatically enrolled in 7-level upgrade training, where the time-in-training countdown starts. They must also be qualified on all 7-level core tasks identified in the STS, for their assigned weapon system and duty section and complete the in-resident Missile and Space Craftsman Course. Once they have 12 months' time-in-training (6 months for retrainees) from enrollment, then craftsman training is complete.

3.4. Superintendent Training (9-level). In order to successfully complete superintendent training and be awarded the 2M090 AFSC, personnel must complete the Senior Non-Commissioned Officer Academy (SNCOA), and be promoted to Senior Master Sergeant.

4. Community College of the Air Force (CCAF). Enrollment in the CCAF occurs upon completion of Basic Military Training. CCAF provides the opportunity to obtain an Associate of Applied Science Degree. In addition to its associate degree program, CCAF offers the following:

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

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

4.3. Degree Requirements. All Airman are automatically entered in the CCAF program. Prior to completing an associate degree, the 5-level must be awarded and the following requirements must be met. See the current CCAF Course Catalog for specific degree requirements:

<i>Core Area</i>	<i>Semester Hours</i>
Technical Education	24
General Education	15
Program Elective	15
Leadership, Management, and Military Studies	6
Physical Education	4
Total Semester Hours	64

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

5. Career Field Path.

5.1. Table 5-1 provides a list of possible assignments for the 2M0X1 AFSC operating within the ICBM weapon system. Table 5-2 provides a list of possible assignments for the 2M0X1 AFSC operating on the ALCM or associated weapons systems. The assignments are subject to change without notice. Active duty members interested in assignments should consult the Assignment Management System (AMS) for more detailed information.

Table 5.1. Enlisted Assignments (ICBM)

LOCATION	3-Level (AB-A1C)	5-Level (SrA)	5-Level (SSgt)	7-Level (TSgt)	7-Level (MSgt)
Minot AFB, ND	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
FE Warren AFB, WY	X	X	X	X	X
Vandenberg SFB, CA		X	X	X	X
Cape Canaveral SFS, FL			X	X	X
Hill AFB, UT			X		
Los Angeles SFB, CA				X	
Barksdale AFB, LA				X	X
McGuire AFB, NJ					X
Kirtland AFB, NM					X
Peterson SFB, CO					X
Sheppard AFB, TX					X
Offutt AFB, NE					X

Table 5.2. Enlisted Assignments (ALCM)

LOCATION	3-Level (AB-A1C)	5-Level (SrA)	5-Level (SSgt)	7-Level (TSgt)	7-Level (MSgt)
Minot AFB, ND	X	X	X	X	X
Barksdale AFB, LA	X	X	X	X	X
Vandenberg SFB, CA			X	X	X
Cape Canaveral SFS, FL			X	X	X
Hill AFB, UT			X	X	X
Edwards AFB, CA			X		
Tinker AFB, OK				X	X
Los Angeles SFB, CA				X	
Eglin AFB, FL					X

LOCATION	3-Level (AB-A1C)	5-Level (SrA)	5-Level (SSgt)	7-Level (TSgt)	7-Level (MSgt)
Peterson SFB, CO					X

5.2. Table 5.3 depicts a nominal career path for the Missile and Space Systems Electronic Maintenance specialty.

Table 5.3. 2M0X1 Career Path.

Rank	Upgrade Training	Professional Development (Note 1, 3)	Career Ladder (Note 2)
AB, Amn, A1C 	3-Level Apprentice - Complete initial training	- FTAC	- Technical Training Student - Technician
SrA 	5-Level Journeyman - 12 months in training (retrainees 9 months) - 2M051A or B CDC completed - Certified on core tasks	- Airman Leadership School - Air Force Training Course	- Technician - Team Chief - Instructor/Trainer - Evaluator - MMOC/MUNS Controller - Scheduler - Data Analyst - Code Controller
SSgt 	7-Level Craftsman - Minimum rank of SSgt-select - 12 months in training (retrainees 6 months) - Complete Missile and Space Craftsman Course (in-resident) - Certified on core tasks	- Finish CCAF - Air Force Training Course - Career Development Programs (if required) Opportunity to crossflow into Space Lift, Depot and eligible for DSD or AETC Tech Training. Crossflow between ICBM/ALCM possible.	- Team Chief - Instructor/Trainer - Evaluator - MMOC/MUNS Controller - Scheduler - Data Analyst - Code Controller Space Lift - Mission Assurance Technician - Instructor/Trainer

TSgt 		- NCO Academy - SEJPME	- Team Chief - Instructor/Trainer - Evaluator - MMOC/MUNS Controller - Scheduler - Code Controller - Task Supervisor/Bay Chief - Shop Supervisor - Expediter - NCOIC - MAJCOM/NAF Space Lift - Mission Assurance Technician - Instructor/Trainer - FIELDCOM - NCOIC
MSgt 		- SEJPME II	- Evaluator - Instructor/Trainer - Task Supervisor/Bay Chief - Shop Supervisor - Production Superintendent - NCOIC - Flight Chief - MAJCOM/NAF Space Lift - FIELDCOM - NCOIC - Flight Chief - NRO
SMSgt 	9-Level Superintendent - Must sew on SMSgt, complete SNCOA.	- SNCO Academy	- Flight Chief - Manager - Production Superintendent - Senior Enlisted Leader (at Squadron level) - HAF/MAJCOM/NAF
CMSgt 	Chief Enlisted Manager (CEM)	- Chief Leadership Course	- QA Superintendent - Senior Enlisted Leader (at Group or Squadron-level) - MAJCOM Functional Manager - Career Field Manager
Note 1. This should be used as a guide to expand knowledge and increase functional skills. Note 2. This should be used as a guide to provide supervisors and members an idea of what positions they should be striving for to gain experience as they progress through the grade and skill levels Note 3. The opportunity to crossflow exists at all levels at Staff Sergeant and above.			

5.3. Occupational Badge Wear Guidance. The following guidance details which occupational badges are worn by the Missile and Space Systems Electronic Maintenance AFSC and their award criteria.

5.3.1. By HQ USAF direction, personnel no longer earn occupational badges upon graduation from the 3-skill level initial training course.

5.3.2. Upon upgrade to the 5-skill level, personnel earn the Basic Missile Badge and Basic Maintenance Badge.

5.3.3. Upon upgrade to the 7-skill level, personnel earn the Senior Missile Badge and Senior Maintenance Badge.

5.3.4. Upon promotion to Master Sergeant, personnel earn the Master Missile Badge and the Master Maintenance Badge, granted 5-years has passed since upgrade to the 7-skill level.

5.3.5. If worn together, the Missile Badge will be worn above the Maintenance Badge. Otherwise, members may choose which occupational badge (Maintenance or Missile Badge) to wear above the left US Air Force tape.

PART I

Section C - SKILL LEVEL TRAINING REQUIREMENTS

1. Purpose. Skill level training requirements in this specialty are defined in terms of tasks and knowledge requirements. This section outlines the specialty qualification requirements for each skill level in broad, general terms, and establishes the mandatory requirements for entry, award, and retention of each skill level. The specific task and knowledge training requirements are in the STS in Attachment 2 or Attachment 3 of this CFETP.

2. Missile and Space Systems Electronic Maintenance Apprentice (3-skill level).

2.1. Specialty Qualification.

2.1.1. Knowledge. Knowledge is mandatory of electronic theory, circuitry, and schematic diagrams.

2.1.2. Education. For entry into this specialty, completion of high school or a General Educational Development (GED) equivalency is mandatory.

2.1.3. Training. For award of the 2M031A/31B AFSC, completion of a specific basic 3-level apprentice course is mandatory.

2.1.4. Experience. Training and qualification in all 3-level core tasks identified in the STS is mandatory. Completion of the applicable 3-level course satisfies this requirement, thus no further documentation is required.

2.1.5. Other. For entry into this specialty, the following are mandatory:

2.1.5.1. Screened for eligibility and meet requirements of the Personnel Reliability Program (PRP) as outlined in HQ AETC PRP Prescreening Guidance.

2.1.5.2. Passing color vision, as defined by correctly identifying at least 10 of 14 Ishihara Plates.

2.1.5.3. Qualification to operate government vehicles according to AFI 24-301, *Ground Transportation*.

2.1.5.4. Freedom from fear of heights or claustrophobia.

2.1.5.5. Completion of a Tier 5 Investigation according to AFMAN 16-1405, *Air Force Personnel Security Program*. Award of the 3-level is authorized without a completed Single Scope Background Investigation (SSBI) provided an interim Top Secret clearance has been granted IAW AFMAN 16-1405.

2.2. Training Sources and Resources. Mandatory training and experience is provided in the basic 3-level apprentice course.

2.3. Implementation. Award of the 3-level is granted upon completion of the applicable 3-level apprentice course, if all other entry requirements have been satisfied.

3. Missile and Space Systems Maintenance Journeyman (5-skill level).

3.1. Specialty Qualification.

3.1.1. Training. Completion of the specific 2M051 CDC (A or B) is mandatory (ICBM personnel will take the 2M051A CDCs and ALCM personnel will take the 2M051B CDCs). Additionally, qualification on applicable 5-level core tasks for the assigned weapon system (i.e. ALCMs or ICBMs) and duty section is required.

3.1.2. Experience. Qualification in and possession of AFSC 2M031A or 2M031B. Experience is mandatory in maintenance duty sections, such as Electromechanical Maintenance Teams (EMT), Electronics Laboratory (ELAB), Missile Communications Maintenance (MCM), Missile Maintenance, Weapons Handling, or Verification and Checkout Equipment (VACE). Additionally, 12 months of training from the start of Journeyman upgrade training is required (9 months for retrainees).

3.1.3. Other. For award and retention of this specialty, the following are mandatory:

3.1.3.1. Must meet eligibility to requirements to fill critical PRP positions.

3.1.3.2. Must maintain local area network access.

3.1.3.3. Must complete a Tier 5 investigation according to AFMAN 16-1405.

3.2. Training Sources/Resources. The STS identifies all core tasks required for an individual's duty section.

3.3. Implementation. Entry into Journeyman upgrade training will be initiated when an individual possesses the 2M031A or 2M031B AFSC and is assigned to their unit. The individual may then be enrolled in the 2M051A (ICBM) **OR** 2M051B (ALCM) CDC, as applicable. Award of the 5-level is granted upon completion of all training and experience requirements, including time-in-training requirements.

4. Missile and Space Systems Maintenance Craftsman (7-skill level).

4.1. Specialty Qualification.

4.1.1. Training. Completion of the Missile and Space Craftsman Course (in-resident) is mandatory. Additionally, qualification on applicable 7-level core tasks is mandatory.

4.1.2. Experience. Qualification in and possession of AFSC 2M051A/2M051B. Experience is mandatory performing or supervising functions in EMT, ELAB, MCM, Missile Maintenance, Weapons Handling, or VACE. Additionally, 12 months of training from the start of Craftsman upgrade training is required (6 months for retrainees).

4.1.3. Other. For award and retention of this specialty, the following are mandatory:

4.1.3.1. Must meet eligibility requirements to fill critical PRP positions.

4.1.3.2. Must maintain local area network access.

4.1.3.3. Must complete Tier 5 investigation according to AFMAN 16-1405.

4.2. Training Sources/Resources. Mandatory training is provided in the Missile and Space Craftsman Course (in-resident). Other core tasks are identified in the applicable STS.

4.3. Implementation. Entry into Craftsman upgrade training is initiated when the individual possesses the 2M051A/2M051B AFSC and is awarded a promotion sequence number to Staff Sergeant. The individual may then be scheduled to attend the Missile and Space Craftsman Course (in-resident) upon recommendation of the supervisor. Award of the 7-level is granted upon promotion to Staff Sergeant, granted completion of all training and experience requirements, including time-in-training requirements have been met.

5. Missile and Space Systems Superintendent (9-skill level). On their SMSgt promotion effective date, a 2M071 will automatically be awarded the 2M090 AFSC.

PART I

Section D - RESOURCE CONSTRAINTS

1. Purpose. This section identifies known resource constraints that preclude optimal and desired training from being developed or conducted, including information on cost and manpower. This section includes a narrative explanation of each resource constraint and impact statement describing what affect each constraint has on training. Also included in this section are actions required, OPR, and target completion rates. As a minimum, these constraints are reviewed and updated annually.

1.1. The Missile and Space Craftsman Course (in-resident) is awaiting funding approval. Until the course is funded and available for scheduling, the requirements of the course can be taught locally by the supervisor or designated trainer. Evaluation of knowledge objectives is waived, but task performance requirements will be trained in accordance with AFI. This constraint no longer applies when the course is available for scheduling.

PART II

Section A – SPECIALTY TRAINING STANDARD

1. Implementation. This STS will be used for technical training provided by AETC for 2M0X1 courses. The ICBM 3-Level course was implemented January 2021 and the 2M07X 7-Level Course is scheduled for August 2022. The ALCM 3-Level course was previously established. The ICBM STS is contained in Attachment 2 and the ALCM STS is contained in Attachment 3.

2. Purpose. As prescribed, these STS:

2.1. Lists in Column 1 the applicable task numbers, identified sequentially for the most common task and knowledge requirements. Column 2 identifies the specific task or knowledge to be trained and Column 3 identifies the technical references necessary to train those tasks.

2.2. Lists core tasks for 3-, 5- and 7-skill level upgrade for the 2M0X1 AFSCs. The number indicates which skill level the task is applicable for upgrade to.

2.3. Column 4 identifies certification for qualification and is used to record completion of tasks. Use automated training management systems to document training start, training completion, and acknowledgement of trainer and trainee certification. Of note, qualification documentation is not required for subject knowledge line items unless a CDC or formal technical training is not available. Completion of the courses where those line items are identified completes the subject knowledge training and no documentation is required, unless there is an accompanying task performance requirement.

2.4. Column 5 identifies formal training and CDC requirements.

2.4.1. 3LVL identifies 3-skill level apprentice course requirements.

2.4.2. 5LVL CDC identifies knowledge requirements for the advancement to the 5-skill level.

2.4.3. 7LVL identifies task/knowledge requirements for the advancement to the 7-skill level.

2.5. Used to document task qualifications when placed in an automated system (TBA, TFTR, etc) and used according to DAFI 36-2670. For documentation, decertification/recertification, and transcribing procedures see DAFI 36-2670.

2.6. IAW DAFI 36-2670, the 2M0 AFCFM has directed that no core tasks require third-party certifications.

2.7. All 2M0X1 SNCOs, who are qualified on and are currently performing technical tasks (e.g. technician, team chiefs, instructors, evaluators), must maintain a CFETP within TBA or TFTR.

2.8. Qualification training will be documented in TBA or TFTR.

2.9. Space lift Tasks. Common Space lift tasks can be found in the TBA or TFTR database titled

2M0XX-000. These tasks apply to those 2M0s assigned to Space lift positions.

2.10. Recommendations.

2.10.1. For comments and recommendations concerning quality of AETC training, or if you need to report unsatisfactory performance of individual course graduates, please contact “532 TRS/TTV, 1472 Nevada Avenue, Vandenberg SFB, California 93437-5305,” and identify the applicable STS items and comments.

2.10.2. Additionally, a 24-hour Customer Service Information Line has been developed to report over- or under-training on task/knowledge items listed in the STS. For a quick response to any AETC training problem, call DSN 276-7039 (Comm 805-606-7039).

2.10.3. Report inadequacies and suggested corrections to this CFETP or STS to the 2M0 AFCFM (DSN 222-9941) through your MAJCOM functional manager. You may also identify suggested corrections or inadequacies on the 2M0 Sharepoint site at the following link:
<https://usaf.dps.mil/teams/11262/HAF/HAF-A4LW/2M0EDT/SitePages/Home.aspx>

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PART II

Section B - COURSE OBJECTIVE LISTING

There are currently no course objective requirements. This area is reserved.

Section C - SUPPORT MATERIALS

There are currently no support material requirements. This area is reserved.

Section D - TRAINING COURSE INDEX

1. Purpose. This section identifies mandatory and optional training courses available in the Missile and Space Systems Maintenance specialty.

2. Skill Level Awarding Courses. Completion of the following course is mandatory for the award of the 3- and 7-skill level.

<i>CRS NO./TITLE</i>	<i>MDS/EQUIP</i>	<i>LOCATION</i>	<i>USER</i>
V3ABR2M031A 088D Missile and Space Systems Electronic Maintenance Apprentice	ICBM	Vandenberg	AFGSC
V3ABR2M031B 089C Missile and Space Systems Electronic Maintenance Apprentice	ALCM	Vandenberg	AFGSC
V3ACR2M07X 088A Missile and Space Maintenance Craftsman (available August 2021)	ICBM/ ALCM	Vandenberg	All

3. Other In-Residence Courses. These courses are optional courses, however, may be mandatory depending on what qualification training is needed.

<i>CRS NO./TITLE</i>	<i>MDS/EQUIP</i>	<i>LOCATION</i>	<i>USER</i>
J4AMP2M0X1 A88B/ PDS Code: 1WR MMIII – Electromechanical Technician Journeyman	ICBM	FE Warren Minot Malmstrom	AFGSC
J4AMP2M0X1 B88A/ PDS Code: 1WS MMIII – Electromechanical Technician Advanced Skills Course	ICBM	FE Warren Minot Malmstrom	AFGSC
J4AMP2M0X1 C88A/ PDS Code: 1WT EMT – Hardness Surveillance Electromagnetic Pulse (HSEP) Program	ICBM	FE Warren Minot Malmstrom	AFGSC
J4AMP2M0X1 D88A/ PDS Code: 1WU MMIII EMT/FMT – Simulated Electronic Launch Minuteman (SELM)	ICBM	FE Warren Minot Malmstrom	AFGSC

J4AMP2M0X1 E88A/ PDS Code: 1WV MMIII – Electromechanical Technician Fundamentals Course	ICBM	FE Warren Minot Malmstrom	AFGSC
J4AMP2M0XX A88A/ PDS Code: 1X7 Special Purpose Vehicle Operators Military Diving Familiarization	ICBM	FE Warren Minot Malmstrom	AFGSC
J4AMP2M0XX B88A PDS Code: 1X8 Special Purpose Vehicle Operators Fork Lift	ICBM	FE Warren Minot Malmstrom	AFGSC
J4AMP2M0XX C88A PDS Code: 1X9 Commercial Vehicle Operations Training Fundamentals Course	ICBM	FE Warren Minot Malmstrom	AFGSC
J4AMP2M0XX E88APDS Code: 1XB Special Purpose Vehicle Operators Crane Manual Transmission	ICBM	FE Warren Minot Malmstrom	AFGSC
J4AMP2M0XX F88APDS Code: 1XC Special Purpose Vehicle Operators Crane Automatic Transmission	ICBM	FE Warren Minot Malmstrom	AFGSC
J4AMP2M0XX G88A PDS Code: 1Z6 Special Purpose Vehicle Operators Skid and Gravel Refresher	ICBM	FE Warren Minot Malmstrom	AFGSC
J4AMP2M0XX I88A PDS Code: 1Z8 Special Purpose Vehicle Operators Crane Refresher	ICBM	FE Warren Minot Malmstrom	AFGSC
J4AMP2M0XX J88A PDS Code: 1Z9 Special Purpose Vehicle Operators Compact Loader Course	ICBM	FE Warren Minot Malmstrom	AFGSC
MNUC200, MILPDS: 2X1 AF Nuclear Fundamentals Course (Nuclear 200)	ICBM ALCM	Kirtland AFB	All
MNUC300, MILPDS: 0I5 Advanced Nuclear Concepts Course (Nuclear 300)	ICBM ALCM	Kirtland AFB	All
CKVNUC0000600SU, MILPDS: 05G AF Nuclear Certified Equipment (NCE) Users Course	ICBM ALCM	Kirtland AFB	AFGSC AFMC
V3AZR2M071 088B MILPDS: 07B Technical Engineering Course	ICBM	Vandenberg	AFGSC AFMC

V3AZR2M051 089C MILPDS: V6U Verification and Checkout Equipment (Support Equipment Maintenance)	ALCM	Vandenberg	AFGSC AFMC
MSPACE 200, MILPDS: OTR Space 200	Space	Peterson SFB	USSF
MSPACE300, MILPDS: OTS Space 300	Space	Peterson SFB	USSF
WNC200: MILPDS: 2A6 NC3 200 - AF Nuclear Command, Control, and Communications (NC3)	ICBM ALCM	Barksdale AFB	AFGSC
WNC300, MILPDS: 2A3 NC3 300 – AF Nuclear Command, Control, and Communications (NC3)	ICBM ALCM	Barksdale AFB	AFGSC

4. Distance Learning/Distributed Learning Courses. These courses are mandatory for upgrade to the 5-skill in the applicable shred-out.

<i>CRS NO.</i>	<i>COURSE TITLE</i>
CDC 2M051A	Missile and Space Systems Electronics Maintenance Journeyman (ICBM)
CDC 2M051B	Missile and Space Systems Electronics Maintenance Journeyman (ALCM)

5. Other Distance Learning Courses. These are courses are optional, but may be mandatory, as determined by unit of assignment.

<i>CRS NO.</i>	<i>COURSE TITLE</i>
ACQ 1010	Fundamentals of Systems Acquisition Management (Defense Acquisition University)
LOG 1000	Life Cycle Logistics Fundamentals (Defense Acquisition University)
LOG 105	Fundamentals of System Sustainment Management (Defense Acquisition University)
LOG 104	Reliability, Availability, and Maintainability (RAM) (Defense Acquisition University)
LOG 0080	Designing for Supportability in DoD Systems (Defense Acquisition University)
CLL 011	Performance Based Logistics (PBL) (Defense Acquisition University)
SPACE 100	Space 100 Course (USSF) (National Security Space Institute)

Section E – MAJCOM UNIQUE REQUIREMENTS

1. **AFGSC Unique Courses.** These courses are optional, but may be mandatory based on position.

<i>CRS NO./TITLE</i>	<i>MDS/EQUIP</i>	<i>LOCATION</i>
GSC MSL MSPC, PDS Code 00Z Missile Maintenance Supervision and Production Course	ICBM	McGuire AFB
ICBM Maintenance Instructor Techniques Course	ICBM	FE Warren AFB
ICBM Maintenance Evaluator Course	ICBM	FE Warren AFB

Attachment 1. Proficiency Code Key

A1. Table A.1.1. contains the Proficiency Code Key (PCK) that corresponds to Column 5 in the STS and is used to indicate the level of training knowledge provided by resident technical schools and career development courses.

Table A.1.1. 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 CDC. - (X) This mark is used alone in course columns to show that training required but not given due to limitations in resources. NOTE: All tasks and knowledge items shown with a proficiency code are trained during war time.		

Attachment 2

2M0X1 (ICBM) SPECIALTY TRAINING STANDARD

1. Task ID	2. Knowledge	3. REFERENCE	CORE TASK	4. TRAINING CERTIFICATION				5. PROFICIENCY CODES		
				TRNG START	TRNG COMP	TRAINEE INITIALS	TRAINER INITIALS	3LVL CRSE	5 CDC	7LVL CRSE
1	SPECIALTY INTRODUCTION									
1.1	Progression in career ladder (2M0X1A)	2M0X1 CFETP						A	-	-
1.2	Duties of AFSs 2M0X1A/B	AFMAN 21-202, AFECD						A	A	-
2	ORGANIZATION									
2.1	Organizational structure	AFI 38-101 / AFMAN 21-200						A	B	-
2.2	Functions and responsibilities of missile organizations	AFMAN 21-202						-	A	-
3	DOCTRINE									
3.1	Description	Basic Doctrine, Volume 1						A	-	B
3.2	Nuclear Operations Overview	Annex 3-72						A	-	B
3.3	AFTTP 3-3. Muns and Missile Mx Overview	AFTTP 3-3						-	-	B
3.4	AFTTP 3-3. ICBM Overview	AFTTP 3-3						-	-	B
4	ADMINISTRATION	DAFI 36-2670, AFMAN 21-202								
4.1	Perform initial eval/work center orientation		7					-	-	3c
4.2	Conduct pre-dispatch/pre-task maintenance briefings		7					-	-	3c
4.3	Team chief duties							-	B	B
4.4	Task supervisor duties							-	-	B
4.5	Technician duties							B	-	-
5	TRAINING	AF Training Course, AFMAN 21-202, DAFI 36-2670								
5.1	Plan and supervise training programs		7					-	-	3c
5.2	Instructor/trainer duties							-	B	-
5.3	Conduct qualification training	ICBM Trainer Course	7					-	-	-
5.4	Maintain training records		7					-	-	3c
6	PUBLICATIONS									
6.1	Description of standard publications	DAFI 33-360						A	-	-
6.2	Use standard publications	DAFI 33-360						-	-	-
6.3	Technical Order (TO) System	TO 00-5-1, AFGSCI 32-1005								
6.3.1	TO System Description							A	-	B
6.3.2	Use technical orders							2b	-	-
6.3.3	Use Civil Engineering Manual (CEMs)							-	-	-
6.3.4	Isolate faults using TO fault flow	21M-LGM30G-2-1-X						-	-	2b
6.3.5	Initiate TO improvement report							-	b	-
6.3.6	Initiate CEM improvement report							-	b	-
7	SAFETY	AFI 91-114, 91-202, TOs 00-25-245, 31-1-141, 21M-LGM30G-2-10, AFMAN 91-203								
7.1	Hazards of AFSC							B	-	-
7.2	Inspect personal safety equipment							2b	-	-
7.3	Use emergency breathing apparatus	TOs 14S5-11-11, 14S5-18-1, 14S5-19-11, 14S5-30-2, 14S5-32-1, Applicable Manufacturers Operation and Service Instructions						-	-	-
7.4	Hazardous Communication (HAZCOM)	AFI 90-821						A	-	-
7.5	USAF Mishap Prevention Program	AFI 91-202								
7.5.1	Description							A	-	-
7.5.2	Hazard identification and reporting process							A	-	-
8	NUCLEAR WEAPONS SURETY	AFI 91-101, 91-114, AFMAN 91-221								
8.1	Nuclear Surety									
8.1.1	Nuclear Surety Program							A	-	-
8.1.2	Two Person Concept							A	-	-

8.1.3	Weapon System Safety Rules							-	A	B
8.1.4	Nuclear deficiency reports							-	A	-
8.1.5.	Report nuclear surety deficiencies (DULL SWORD)							-	-	2b
8.2	Nuclear Certified Equipment (NCE)	AFI 63-125, MNCL								
8.2.1	Description/Positive Identification /Restrictions							A	-	-
8.2.2	NCE Management							-	-	B
8.2.3	Perform nuclear certification verification using MNCL							2b	-	-
9	MAINTENANCE DATA DOCUMENTATION (MDD)									
9.1	Purpose & Description	TO 00-20-2						A	B	B
9.2	Use work unit code manuals	21M-LGM30F-06-1, 21M-LGM30F-06-3, 21M-LGM30F-06-4, 21M-LGM30F-06-5	7					2b	-	3c
9.3	Complete AFTO 350 tags	TO 00-20-2						2b	-	-
9.4	Complete DD Form 1500-series tags	TO 00-20-3						-	-	-
9.5	Evaluate MDC tags	TOs 00-20-1, 00-20-2						-	-	2b
9.6.	Use alternate MDD forms & methods	TO 00-20-2						-	-	-
9.2	Integrated Maintenance Data System (IMDS)	IMDS User's Guide, TO 00-20-2								
9.2.1	Description							A	-	-
9.2.2	Use IMDS		5					-	-	-
9.2.3	Perform supervisory data review		7					-	-	3c
9.3	Deficiency report (DR)	TO 00-35D-54								
9.3.1	Description							-	B	-
9.3.2	Initiate deficiency report		7					-	b	3c
9.4	Maintenance/Engineering Technical Assistance (MAR/TAR) Request	TO 00-25-107								
9.4.1	Description							-	B	-
9.4.2	Submit MAR/TAR		7					-	b	3c
10	MATERIEL MANAGEMENT AND SUPPLY DISCIPLINE									
10.1	Supply system description	AFI 23-101, 23-111, AFMAN 23-122, AFH 23-123						-	B	B
10.2	Use illustrated parts breakdown (IPB)	TO 21M-LGM30G-4(X)						2b	-	-
10.3	Supply Forms	AFI 23-101								
10.3.1	Complete AF Form 2005		5					-	b	-
10.3.2	Complete DD Form 1348-6		5					-	b	-
10.4	Materiel management/stock	AFI 23-101								
10.4.1	Description							A	B	-
10.4.2	Issue/Inventory/Maintain							-	b	-
11	TOOLS AND EQUIPMENT	TOs 00-25-234, 32-1-2, 32-2-101, 32-1-151, 32B14-3-1-101, 1-1-2, 1-1A-8, 1-1A-14, 1-1A-15, 21M- LGM30G-2-10, 21M-LGM3 0F-112, 31-1-141 series, 33A1 series								
11.1	Tools									
11.1.1	Use tools	TO 32-1-101						3c	-	-
11.1.2	Manage tools	DAFI 21-101, AFMAN 21-200						2b	-	-
11.1.3	Use torque wrenches	TO 32B14-3-1-101						3c	-	-
11.2	Test equipment	TO 33-1-21; Applicable Manufacturers Operation and Service Instructions								
11.2.1	Use analog multimeters	TOs 33A1-12-2-1, 33A1-12-216- 1, 33A1-12-773-1, 33A1-12-933-1						2b	-	-
11.2.2	Use bridge meters	TOs 33A1-6-63-1						-	-	-
11.2.3	Use counters							-	-	-
11.2.4	Use digital multimeters	TOs 33A1-12-1177-1, 33A1-12-1198-1, 33A1-12-1199-1						3c	-	-
11.2.5	Use gas monitor							1a	-	-
11.2.6	Use oscilloscopes							-	-	-
11.2.7	Use power meters							-	-	-
11.2.8	Use power supplies	Applicable Manufacturers Operation and Service Instructions						-	-	-
11.2.9	Use signal generators							-	-	-
11.2.10	Use megohmmeters	TOs 33A1-4-35-1,33A1-12-1212-1C, Applicable						2b	-	-

		Manufacturers Operation and Service Instructions								
11.2.11	Use bonding meters	TO 33A1-12-1124-1, Applicable Manufacturers Operation and Service Instructions						-	-	-
11.2.12	Use ammeters/current probes	TOs 33DA98-15-1, Applicable Manufacturers Operation and Service Instructions						-	-	-
11.2.13	Use milliohm meter	TO 33A1-12-1124-1, Applicable Manufacturers Operation and Service Instructions						-	-	-
11.2.14	Use test set semiconductor device	Applicable Manufacturers Operation and Service Instructions						-	-	-
11.2.15	Operate Maintenance and Security Alarm Monitor II	TOs 21M-LGM30G-2-35, 21M-LGM30G-2-10; Applicable Manufacturers Operation and Service Instructions						-	-	-
11.3	Portable Equipment									
11.3.1	Operate portable heaters	TO 35E7-2-11-21, Applicable Manufacturers Operation and Service Instructions						-	-	-
11.3.2	Operate portable pumps	TOs 21M-LGM30G-2-10; Applicable Manufacturers Operation and Service Instructions						-	-	-
12	GENERAL MAINTENANCE	TOs 00-25-234, 1-1A-1, 1-1A-8, 1- 1A-14, 1-1A-15, 33D9-61-58-2, applicable owners manual								
12.1	Troubleshooting techniques							-	B	B
12.2	Operate M-Van hoist	TOs 21M-LGM30G-2-10, 35D4-7-4-2, 36A12-24-3-1, 21M-LGM30F-2-17-9						-	-	-
12.3	Hardness assurance	TOs 21M-LGM30G-2-31, 21M-LGM30G-2-10								
12.3.1.	Description							A	B	-
12.3.2.	Nuclear weapons effects & design considerations	TO 21M-LGM30G-1-1						A	-	-
12.3.3.	Hardness preservation	AFMAN 21-202_AFGSCSUP						-	B	B
12.4	Aerospace hardware (AN/MS)									
12.4.1	Description							A	-	-
12.4.2	Use aerospace hardware							3c	-	-
12.5	RFI/EMI gaskets	TO 21M-LGM30F-112								
12.5.1	Inspect							-	b	-
12.5.2	Repair							-	-	-
12.6	Electrostatic discharge (ESD) control procedures	TO 00-25-234								
12.6.1	Description							A	-	-
12.6.2	Perform ESD procedures							3c	-	-
12.7	Common electrical practices	TOs 00-25-234, 00-25-259, 1-1A-14, 1-1A-15, 21M-LGM30G-12, 31-1-141-15, 31-10-7, 34W4-1-5, 34W4-1-8								
12.7.1	Perform soldering/desoldering procedures							-	-	-
12.7.2	Assemble simple connectors							-	-	-
12.7.3	Repair wiring							-	-	-
12.7.4	Repair general connectors							-	-	-
12.7.5	Repair shielded and coaxial connectors							-	-	-
12.7.6	Perform cable binding and lacing							-	-	-
12.7.7	Qualify solderless wire wrapping tool kit (TK- 148/g)							-	-	-
12.7.8	Perform wire wrapping							-	-	-
12.7.9	Clean electronic equipment							-	-	-
12.7.10.	Perform visual inspection							-	-	-
13	WEAPON SYSTEMS DESCRIPTION									
13.1	Nuclear theory and components	TO 21M-LGM30G-1-1						A	-	-
13.2	ALCM (AGM-86B) description	TO 21M-AGM86-2-1						A	B	-

13.3	Nuclear command/control/communications (NC3) system description	TO 21M-LGM30G-2-5-4						A	B	-
13.4	ICBM (WS 133AM)	TOs 21M-LGM30G-1-1, 21M-LGM30G-2-10								
13.4.1	Missile							A	B	-
13.4.2	Launch facility							A	B	-
13.4.3	Missile alert facility							A	B	-
13.4.4	Missile support base							A	B	-
14	TEST AND EVALUATION	AFGSCI 99-102, AFI 99-103								
14.1	Mission of Air Force Operational Test and Evaluation Centers							-	-	A
14.2	Operational Test Launch							-	A	B
14.3	Weapon System Evaluation Program (WSEP and NucWSEP)							-	-	B
14.4	Simulated Electronic Launch Minuteman (SELM)	TO 21M-LGM30G-1-17								
14.4.1	Description							-	A	B
14.4.2	Posture							-	-	-
14.4.3	Deposture							-	-	-
14.4.4	Enter/Exit SELM configured LF							-	-	-
14.5	Hardness Surveillance EMP Program (HSEP)	TO 21M-LGM30G-2-34								
14.5.1	Description							-	A	B
14.5.2	Posture							-	-	-
14.5.3	Deposture							-	-	-
15	SPACELIFT MISSION	AU-18, Space Primer, Space Force Captsone Doctrine Document*								
15.1	Space domain overview							A	-	A
15.2	Roles and responsibilities							-	-	A
15.3	Launch vehicle characteristics							-	-	A
15.4	Spacecraft characteristics							-	-	A
15.5	Processing and infrastructure overview							-	-	A
15.6	Launch Enterprise overview							-	-	A
16	MISSILE ELECTRONIC FUNDAMENTALS									
16.1	Electromagnetic effects							B	-	-
16.2	Electrical prefixes							B	-	-
16.3	Direct current theory							B	-	-
16.4	Alternating current theory							B	-	-
16.5	Basic circuit components									
16.5.1	Resistors									
16.5.1.1	Description and operation							B	-	-
16.5.1.2	Troubleshoot							-	-	-
16.5.2	Inductors									
16.5.2.1	Description and operation							B	-	-
16.5.2.2	Troubleshoot							-	-	-
16.5.3	Capacitors									
16.5.3.1	Description and operation							B	-	-
16.5.3.2	Discharging							2b	-	-
16.5.3.3	Troubleshoot							-	-	-
16.6	Electromagnetic devices									
16.6.1	Transformers									
16.6.1.1	Description and operation							B	-	-
16.6.1.2	Troubleshoot							-	-	-
16.6.2	Relays and solenoids									
16.6.2.1	Description and operation							B	-	-
16.6.2.2	Troubleshoot							-	-	-
16.6.3	Motor theory									
16.6.3.1	DC							B	-	-
16.6.3.2	AC							B	-	-
16.6.4	Generator theory									
16.6.4.1	DC							B	-	-
16.6.4.2	AC							B	-	-
16.7	Solid state devices									
16.7.1	Diodes									
16.7.1.1	Description and operation							B	-	-
16.7.1.2	Troubleshoot							-	-	-
16.7.2	Transistors									
16.7.2.1	Description and operation							A	-	-
16.7.3	Special purpose devices description and operation									
16.7.3.1	Zener diode							A	-	-
16.7.3.2	Integrated circuit (IC)							A	-	-

16.7.3.3	Operational amplifiers							A	-	-
16.7.3.4	Transistor amplifier circuits							-	-	-
16.7.4	Power supply circuit description and operation									
16.7.4.1	Rectifiers							B	-	-
16.7.4.2	Filters							B	-	-
16.7.4.3	Voltage regulators							B	-	-
16.7.4.4	Troubleshoot power supplies							-	-	-
16.7.5	Oscillator description and operation							-	-	-
16.8	Basic communications theory									
16.8.1	Antenna							-	B	-
16.8.2	Transmission lines							-	B	-
16.8.3	Data bus							-	B	-
16.8.4	Waveguide							-	B	-
16.8.5	Cryptology							-	B	-
16.9	Transmitters									
16.9.1	FM							-	B	-
16.9.2	AM							-	B	-
16.10	Receivers									
16.10.1	FM							-	B	-
16.10.2	AM							-	B	-
17	ICBM MAINTENANCE									
17.1	Code handling procedures	AFGSCI 13-5301V5, EAP-STRAT VOL 16						A	-	-
17.2	Access system									
17.2.1	Description							A	B	-
17.2.2	Remove and replace hand driven linear actuator	TO 21M-LGM30G-2-19						-	-	-
17.2.3	Repair personnel access system hardware	TO 21M-LGM30G-2-19						-	-	-
17.2.4	Secondary access system	TOs 21M-LGM30G-2-19, 21M LGM20G-2-10								
17.2.4.1	Startup and shutdown							1a	-	-
17.2.4.2	Checkout							1a	-	-
17.2.4.3	Troubleshoot							-	-	-
17.2.4.4	Repair motor drive cabinet							-	-	-
17.2.4.5	Repair wiring and control set							-	-	-
17.2.5	Energy storage system									
17.2.5.1	Repair							-	-	-
17.2.5.2	Replace							-	-	-
17.2.5.3	Operate ESS readiness device							-	-	-
17.2.5.4	Service							-	-	-
17.2.6	Electro-mechanical actuator	TOs 21M-LGM30G-2-19, 21M LGM20G-2-10								
17.2.6.1	Repair							-	-	-
17.2.6.2	Replace							-	-	-
17.2.6.3	Service							-	-	-
17.2.6.4	Adjust							-	-	-
17.2.7	Forced entry of LF	TOs 21M-LGM30G-2-19, 21M LGM20G-2-10, 35M37-4-12								
17.2.7.1	Perform break-in procedures for secondary door lockout							-	-	-
17.2.7.2	Perform break-in procedures for security pit lockout							-	-	-
17.2.7.3	Perform nondestructive procedures							-	-	-
17.2.8	Secondary door	TOs 21M-LGM30G-2-19, 21M LGM20G-2-10								
17.2.8.1	Change lock combination							1a	-	-
17.2.8.2	Troubleshoot (EMT core)		5					-	-	-
17.2.8.3	Repair							-	-	-
17.2.8.4	Replace							-	-	-
17.2.9	Telescoping ladder	TOs 21M-LGM30G-2-19, 21M LGM20G-2-10								
17.2.9.1	Inspect							-	-	-
17.2.9.2	Repair							-	-	-
17.2.9.3	Replace							-	-	-
17.2.9.4	Replace folding ladder							-	-	-
17.2.10	Security pit	TOs 21M-LGM30G-2-19, 21M LGM20G-2-10								
17.2.10.1	Repair							-	-	-
17.2.10.2	Service							-	-	-
17.2.10.3	Perform electrical test							-	-	-
17.2.10.4	Troubleshoot							-	-	-
17.2.11	Security pit vault door	TOs 21M-LGM30G-2-19, 21M LGM20G-2-10								

17.2.11.1	Change lock combination							-	-	-
17.2.11.2	Troubleshoot							-	-	-
17.2.11.3	Repair							-	-	-
17.2.11.4	Replace							-	-	-
17.2.12	Alternate opening of LF	TOs 21M-LGM30G-2-19, 21M LGM20G-2-10								
17.2.12.1	Perform primary door procedures							-	-	-
17.2.12.2	Perform secondary door procedures							-	-	-
17.3	Command and Control (WS-133AM)	TOs 21M-LGM30G-2-1-(x), 21M-LGM30G-1-1, 21M-LGM30G-2-12-2, 21M-LGM30G-2-12-4								
17.3.1	Description							A	B	-
17.3.2	Communication Equipment Interface Unit (CEIU) Portable Terminal	TO 33D9-74-42-2								
17.3.2.1	Install							-	-	-
17.3.2.2	Remove							-	-	-
17.3.2.3	Repair digital data group							-	-	-
17.3.3	Command message processing group	TO 21M-LGM30G-2-12-4								
17.3.3.1	Checkout							-	-	-
17.3.3.2	Repair							-	-	-
17.3.4	Programmer group	TO 21M-LGM30G-2-12-2								
17.3.4.1	Checkout							-	-	-
17.3.4.2	Repair							-	-	-
17.3.5	Secure Data Unit	TOs 21M-LGM30G-2-12-2, 21M-LGM30G-2-12-4								
17.3.5.1	Repair							-	-	-
17.3.5.2	Replace							-	-	-
17.3.5.3	Load/Query							-	-	-
17.3.6	UHF receiver									
17.3.6.1	Checkout							-	-	-
17.3.6.2	Repair							-	-	-
17.3.6.3	Inspect antenna							-	-	-
17.3.7	REACT console	TO 21M-LGM30G-2-12-4								
17.3.7.1	Checkout							-	-	-
17.3.7.2	Repair							1a	-	-
17.3.7.3	Replace circuit card assembly							-	-	-
17.3.8	Intrasite cabling system (WS133AM)	TOs 21M-LGM30G-1-1, 21MLGM30G-2-1-(x), 21M-LGM30G-2-21-(x)								
17.3.8.1	Description							A	B	-
17.3.8.2	Checkout intra-site cables							-	-	-
17.3.8.3	Repair intra-site cables							-	-	-
17.3.8.4	Certify critical component cables	TO 21M-LGM30F-12-1						-	-	-
17.3.9	Perform command line tone/resistance checkout									
17.3.9.1	Launch facility							-	-	-
17.3.9.2	Launch control center							-	-	-
17.3.10	LF electrical filter assembly F-1343/F-1344/F-1345/F-1431/F-1432									
17.3.10.1	Checkout							-	-	-
17.3.10.2	Repair							-	-	-
17.3.10.3	Troubleshoot							-	-	-
17.3.11	LCC electrical surge arrester									
17.3.11.1	Checkout							-	-	-
17.3.11.2	Replace							-	-	-
17.3.12	LCC ESA - Circuit Card Assembly									
17.3.12.1	Checkout							-	-	-
17.3.12.2	Replace							-	-	-
17.3.13	LCC Radio/TV ESA									
17.3.13.1	Checkout							-	-	-
17.3.13.2	Replace							-	-	-
17.3.14	LF electrical surge arrester									
17.3.14.1	Checkout							-	-	-
17.3.14.2	Replace							-	-	-
17.3.15	LCC interconnecting box									
17.3.15.1	Checkout							-	-	-
17.3.15.2	Repair							-	-	-
17.3.16	LF interconnecting box									
17.3.16.1	Checkout							-	-	-
17.3.16.2	Troubleshoot							-	-	-
17.3.16.3	Repair							-	-	-

17.3.16.4	Isolate and restore LF and MAF communications	TO 21M-LGM30G-12						-	-	-
17.3.16.5	Perform GMR 3 or GMR 5 monitor circuits checkout							-	-	-
17.3.17	Facility Alarm Protection Assembly/Door Alarm Protection Assembly	TO 21M-LGM30G-2-28								
17.3.17.1	Checkout							-	-	-
17.3.17.2	Repair							-	-	-
17.3.17.3	Troubleshoot							-	-	-
17.3.18	LCC High Energy Spark Gap									
17.3.18.1	Checkout							-	-	-
17.3.18.2	Replace							-	-	-
17.3.19	LCC Power Junction Box									
17.3.19.1	Checkout							-	-	-
17.3.19.2	Repair							-	-	-
17.3.20	LCC Security/Monitor Junction Box									
17.3.20.1	Checkout							-	-	-
17.3.20.2	Repair							-	-	-
17.4	Missile alert facility (WS-133AM)	TO 21M-LGM30G-2-11								
17.4.1	Launch control center motor generator									
17.4.1.1	Start up and load							1a	-	-
17.4.1.2	Unload and shut down							1a	-	-
17.4.2	Power signal distribution unit									
17.4.2.1	Checkout							-	-	-
17.4.2.2	Replace							-	-	-
17.4.2.3	Replace electrical cabinet	TOs 21M-LGM30G-2-12-X, 36A12-24-3-1						-	-	-
17.4.3	LCC operator chair	TOs 21M-LGM30G-2-28								
17.4.3.1	Replace							-	-	-
17.4.3.2	Checkout							-	-	-
17.5	LCC Survival Lighting Repair	TO 21M-LGM30G-2-11						-	-	-
17.6	Launch facility	TOs 21M-LGM30F-2-17-9, TOs 21M-LGM30G-2-1-X, 21M-LGM30X-2-21-X, 21M-LGM30G-1-1, 21M-LGM30G-2-11-(X), 21M-LGM30G-2-10-(X), 21M-LGM30G-2-12-X, 21M-LGM30G-2-4, 21M-LGM30G-2-19, 21M-LGM30G-2-6, 1-1A-14, 31X2-56-8-1, 31X3-6-9-1, 31X4-1-102, 31X4-1-142								
17.6.1	LSB									
17.6.1.1	Enter (EMT/MCM Core)		5					1a	-	-
17.6.1.2	Exit (EMT/MCM Core)		5					1a	-	-
17.6.1.3	LASB Enter/Exit							-	-	-
17.6.1.4	Perform emergency procedures for electrical isolation of LSB (EMT/MCM Core)		5					-	-	-
17.6.1.5	Restart LF ECS/brine chiller							-	-	-
17.6.1.6	Operate diesel electric unit	TO 21M-LGM30G-2-10, CEM 21-SM80X-2-21-X						-	-	-
17.6.2	LER									
17.6.2.1	Enter (EMT Core)		5					1a	-	-
17.6.2.2	Exit (EMT Core)		5					1a	-	-
17.6.2.3	Perform emergency shutdown procedures (EMT Core)		5					-	-	-
17.6.2.4	Evacuate LF for EWO launch (EMT Core)		5					-	-	-
17.6.2.5	Perform LF hostile securing procedures (EMT Core)		5					-	-	-
17.6.2.6	Raise/lower equipment							2b	-	-
17.6.2.7	Perform emergency response for loss of ESS power							-	-	-
17.6.2.8	Perform Contaminated Atmosphere Purge							-	-	-
17.6.3	Power signal distribution unit	TOs 1-1A-14, 21M-LGM30GX-2-11, 21M-LGM30GX-2-1-X, 21M-LGM30GX-2-12-X, 31X2-56-8-1, 31X3 6-9-1, 31X4-1-102, 31X4-1-142, 31X4-1-152								
17.6.3.1	Checkout							-	-	-

17.6.3.2	Replace							-	-	-
17.6.3.3	Certify critical component PSDUs	TOs 21M-LGM30F-12-1						-	-	-
17.6.3.4	Cleaning	TO 21M-LGM30F-2-17-9						-	-	-
17.6.3.5	Perform primary power restart	TOs 21M-LGM30G-2-10, 21M-LGM30F-2-17-9						-	-	-
17.6.3.6	Perform LER electronic rack power removal/application	TOs 21M-LGM30G-2-10, 21M-LGM30F-2-17-9						-	-	-
17.6.4	Missile (WS-133AM)	TOs 21M-LGM30G-2-12, 21M-LGM30G-2-1-X								
17.6.4.1	Startup and coding operations description							A	B	-
17.6.4.2	Change command signal decoder Missile, CSD(M) code (EMT Core)		5					1a	-	-
17.6.4.3	Downgrade computer memory information							-	-	-
17.6.4.4	Perform normal shutdown AVE/OGE (EMT Core)		5					1a	-	-
17.6.4.5	Perform AVE/OGE startup (EMT Core)		5					1a	-	-
17.6.4.6	Load computer memory (EMT Core)		5					1a	-	-
17.6.4.7	Readout and record local data/dedicated data							-	-	-
17.6.5	Missile guidance set cooling system	TOs 21M-LGM30G-1-1, 21M-LGM30G-2-1-X, 21M-LGM30G-2-6								
17.6.5.1	Description							A	B	-
17.6.5.2	Checkout							-	-	-
17.6.5.3	Troubleshoot							-	-	-
17.6.5.4	Repair							-	-	-
17.6.5.5	Service							-	-	-
17.7	Power system (WS-133AM)	TOs 21M-LGM30G-1-1, 21M-LGM30G-2-11, 21M-LGM30G-2-1-7, CEM 21M-SM80X-2-21-X, 21M-LGM30G-2-11								
17.7.1	Description							B	B	-
17.7.2	LF storage batteries									
17.7.2.1	Checkout (EMT Core)		5					2b	-	-
17.7.2.2	Replace							2b	-	-
17.7.2.3	Service							-	-	-
17.7.2.4	Troubleshoot (EMT Core)		5					-	-	-
17.7.2.5	Repair							-	-	-
17.7.3	LF battery charger set									
17.7.3.1	Checkout							-	-	-
17.7.3.2	Replace							-	-	-
17.7.3.3	Repair							-	-	-
17.7.3.4	Troubleshoot							-	-	-
17.7.4	LF distribution box									
17.7.4.1	Checkout							2b	-	-
17.7.4.2	Repair							-	-	-
17.7.4.3	Troubleshoot							-	-	-
17.7.4.4	Certify	TO 21M-LGM30F-12-1						-	-	-
17.7.5	LCC motor generator set									
17.7.5.1	Checkout							1a	-	-
17.7.5.2	Repair							-	-	-
17.7.5.3	Replace							-	-	-
17.7.5.4	Service							-	-	-
17.7.5.5	Troubleshoot							-	-	-
17.7.6	LF motor generator set									
17.7.6.1	Checkout (EMT Core)		5					-	-	-
17.7.6.2	Repair (EMT Core)		5					-	-	-
17.7.6.3	Replace							-	-	-
17.7.6.4	Service							-	-	-
17.7.6.5	Troubleshoot							-	-	-
17.7.6.6	Replace MG DC switch box							-	-	-
17.7.6.7	Operate Pre-installation Test Set (PITS)							-	-	-
17.7.6.8	Perform power fault to ground check (EMT Core)		5					b	-	-
17.7.7	LCC power supply group									
17.7.7.1	Checkout							-	-	-
17.7.7.2	Repair							2b	-	-
17.7.7.3	Troubleshoot							-	-	-
17.7.8	LF power supply group									
17.7.8.1	Checkout							2b	-	-
17.7.8.2	Repair							-	-	-

17.7.8.3	Troubleshoot							-	-	-
17.7.8.4	Restore LF power							-	-	-
17.7.9	LCC storage batteries									
17.7.9.1	Checkout							-	-	-
17.7.9.2	Replace							-	-	-
17.7.9.3	Service							-	-	-
17.7.9.4	Troubleshoot							-	-	-
17.7.9.5	Isolate							-	-	-
17.7.9.6	Repair							-	-	-
17.7.9.7	Install/remove LCC bathroom door/wall	TO 21M-LGM30G-2-11						-	-	-
17.7.10	LCC distribution box									
17.7.10.1	Checkout							-	-	-
17.7.10.2	Repair							-	-	-
17.8	Security system (WS-133AM)	TOs 21M-LGM30G-2-19, 21M-LGM30G-1-1, 21M-LGM30G-2-4, 21M-LGM30G-2-1-(X)								
17.8.1	Description							A	B	-
17.8.2	Perform system checkout (EMT Core)		5					1a	-	-
17.8.3	Repair							-	-	-
17.8.4	Troubleshoot (EMT Core)		5					-	-	-
17.8.5	Perform TDR test							-	-	-
17.8.6	Replace antenna nose cap							-	-	-
18	ICBM Missile Communications									
18.1	Familiarization	TO 21M-LGM30F-2-5-4								
18.1.1	SACCS							-	A	-
18.1.2	MCCS							-	A	-
18.1.3	REACT							-	A	-
18.1.4	Minuteman MEECN							-	A	-
18.1.5	UHF Milstar							-	A	-
18.1.6	UHF Radio							-	A	-
18.2	UHF Communication System	TO 21M-LGM30F-2-5-5								
18.2.1	AN/GRC-208 UHF Radio System On Equipment									
18.2.1.1	Checkout & Troubleshoot (MCM Core)		5					-	-	-
18.2.1.2	Repair (MCM Core)		5					-	-	-
18.2.1.3	Perform preventative maintenance							-	-	-
18.2.2	UHF Dual Mode Antenna AS-3517/FRC	TO 21M-LGM30F-2-5-5								
18.2.2.1	Checkout & Troubleshoot							-	-	-
18.2.2.2	Troubleshoot							-	-	-
18.2.2.3	Repair							-	-	-
18.2.2.4	Perform preventative maintenance							-	-	-
18.2.3	UHF Control Panel (UCP)	TO 21M-LGM30F-2-5-5								
18.2.3.1	Replace							-	-	-
18.2.4	UHF Radio Off Equipment Maintenance									
18.2.4.1	Transceiver RT-980/GRC-171	TO 31R-2GRC171-2								
18.2.4.1.1	Checkout & Troubleshoot							-	-	-
18.2.4.1.2	Repair							-	-	-
18.2.4.2	Power Amplifier AM-6987/GR	TO 31R-2GR-1101								
18.2.4.2.1	Checkout & Troubleshoot							-	-	-
18.2.4.2.2	Repair							-	-	-
18.2.4.3	Frequency Code Converter CV-3450/GRC-171	TO 31R-2GRC171-12								
18.2.4.3.1	Checkout & Troubleshoot							-	-	-
18.2.4.3.2	Repair							-	-	-
18.2.4.4	Control Power Supply C-6178/GRC-130	TO 31R-2GRC-1192								
18.2.4.4.1	Checkout & Troubleshoot							-	-	-
18.2.4.4.2	Repair							-	-	-
18.3	MMP Extremely High Frequency (EHF) Communications System Rack	TOs 21M-LGM30F-2-5-13, 21M-LGM30F-2-5-14, 21M-LGM30F-2-5-15								
18.3.1	Startup (MCM Core)		5					-	-	-
18.3.2	Shutdown (MCM Core)		5					-	-	-
18.3.3	Checkout (MCM Core)		5					-	-	-
18.3.4	Troubleshoot							-	-	-
18.3.5	Repair (MCM Core)		5					-	-	-
18.3.6	Perform preventive maintenance		-	-	-	-	-	-	-	-
18.4	MMPU Extremely High Frequency (EHF) Communications System Rack									
18.4.1	Operate (MCM Core)		5					-	-	-

18.4.2	Checkout (MCM Core)		5					-	-	-
18.4.3	Troubleshoot							-	-	-
18.4.4	Repair (MCM Core)		5					-	-	-
18.4.5	Perform preventive maintenance							-	-	-
18.5	EHF Antenna Shelter	TO 21M-LGM30F-2-5-15								
18.5.1	Perform entry/exit procedures (MCM Core)		5					-	-	-
18.5.2	Perform fault isolation procedures							-	-	-
18.5.3	Repair (MCM Core)		5					-	-	-
18.5.4	Perform preventive maintenance							-	-	-
18.6	Antenna/Pedestal Assembly (A/PA)	TO 21M-LGM30F-2-5-15								
18.6.1	Perform A/PA pre-maintenance shutdown							-	-	-
18.6.2	Perform A/PA post-maintenance startup							-	-	-
18.6.3	Repair							-	-	-
18.6.4	Replace							-	-	-
18.6.5	Perform preventive maintenance							-	-	-
18.7	EHF Electrical Surge Arrestor (ESA) and Metal Oxide Varistor (MOV) Assembly	TO 21M-LGM30F-2-5-15								
18.7.1	Checkout							-	-	-
18.7.2	Troubleshoot							-	-	-
18.7.3	Repair							-	-	-
18.8	MMP VLF/LF Assemblies	TO 21M-LGM30F-2-5-15								
18.8.1	Operate							-	-	-
18.8.2	Checkout and troubleshoot (MCM Core)		5					-	-	-
18.8.3	Repair (MCM Core)		5					-	-	-
18.8.4	Perform preventive maintenance							-	-	-
18.9	Operate VLF/LF System Test Set (VSTS) (MCM Core)	TO 33D7-71-88-8-1	5					-	-	-
18.10	Organizational Maintenance System (OMS)	TO 21M-LGM30F-2-5-14								
18.10.1	Operate							-	-	-
18.10.2	Checkout							-	-	-
18.10.3	Troubleshoot							-	-	-
18.10.4	Repair							-	-	-
18.10.5	Perform preventive maintenance							-	-	-
18.11	Air Force Satellite Communications (AFSATCOM) Systems									
18.11.1	AFSATCOM Terminal AN/GSC-42(V)	TOs 31R5-2GSC42-1, 31R5-2GSC42-6WC								
18.11.1.1	Checkout & Troubleshoot (MCM Core)		5					-	-	-
18.11.1.2	Repair (MCM Core)		5					-	-	-
18.11.1.3	Perform preventive maintenance							-	-	-
18.11.2	AFSATCOM AN/FRC-175	TO 21M-LGM30F-2-5-5								
18.11.2.1	Operate							-	-	-
18.11.2.2	Checkout & Troubleshoot (MCM Core)		5					-	-	-
18.11.2.3	Repair (MCM Core)		5					-	-	-
18.11.3	AN/GRC-228(v) Time Distribution System (TDS)	TOs 31R2-2GRC228-1, TO 31R2-2GRC228-11, TO 35C-2-117-1								
18.11.3.1	Checkout							-	-	-
18.11.3.2	Troubleshoot							-	-	-
18.11.3.3	Repair							-	-	-
18.11.4	TDS Pre-Processor (TDSPP)	TO 31R2-2GRC228-31								
18.11.4.1	Setup hardware and install operating system							-	-	-
18.11.4.2	Operate							-	-	-
18.11.4.3	Troubleshoot (MCM Core)		5					-	-	-
18.12	Strategic Automated Command and Control System (SACCS) On Equipment Maintenance									
18.12.1	Base Communication Processor (BCP)									
18.12.1.1	Startup (MCM Core)	TO 31S5-2FSC85-12	5					-	-	-
18.12.1.2	Checkout (MCM Core)	TO 31S5-2FSC85-12	5					-	-	-
18.12.1.3	Power up and operate Port Expansion Processor (PEP)	TO 31S5-2FSC89-1						-	-	-
18.12.1.4	Power up and operate SACCS Desktop Terminal (SDT)	TO 31S5-2FSC89-1						-	-	-
18.12.1.5	Checkout SDT	TO 31S5-2FSC89-1						-	-	-
18.12.1.6	Troubleshoot BCP	TO 31S5-2FSC85-12						-	-	-
18.12.1.7	Troubleshoot PEP	TO 31S5-2FSC89-1						-	-	-

18.12.1.8	Troubleshoot SDT	TO 31S5-2FSC89-1						-	-	-
18.12.1.9	Repair	TOs 31S5-2FSC85-12						-	-	-
18.12.2	Missile Base Communications Processor (MBCP)									
18.12.2.1	Startup	TO 31S5-2FSC87-1						-	-	-
18.12.2.2	Checkout (MCM Core)	TO 31S5-2FSC87-2	5					-	-	-
18.12.2.3	Repair	TO 31S5-2FSC87-2						-	-	-
18.12.2.4	Troubleshoot	TO 31S5-2FSC87-2						-	-	-
18.12.3	Hard User Terminal Element (HUTE)									
18.12.3.1	Startup	TO 31S5-2FSC88-1						-	-	-
18.12.3.2	Checkout (MCM Core)	TO 31S5-2FSC88-2	5					-	-	-
18.12.3.3	Repair	TO 31S5-2FSC88-2						-	-	-
18.12.3.4	Install/Remove SAC/CTE Alternate Power Supply	TO 21M-LGM30F-2-5-6						-	-	-
18.12.3.5	Troubleshoot	TO 31S5-2FSC88-2						-	-	-
18.13	WS-133A Missile Control Communications Systems On-Equipment Maintenance									
18.13.1	Support Information Network (SIN) Equipment MAF/LF Telephone Maintenance	TO 21M-LGM30F-2-5-6								
18.13.1.1	Checkout (MCM Core)		5					-	-	-
18.13.1.2	Repair (MCM Core)		5					-	-	-
18.13.1.3	Troubleshoot							-	-	-
18.13.1.4	Adjust Digital Data Receiver							-	-	-
18.13.1.5	Adjust Audio Frequency Detector, DT-252/DT-312							-	-	-
18.13.2	MAF Interphone Circuit Maintenance	TO 21M-LGM30F-2-5-6								
18.13.2.1	Checkout & Troubleshoot							-	-	-
18.13.2.2	Repair							-	-	-
18.13.3	LF Interphone Circuit Maintenance	TO 21M-LGM30F-2-5-6								
18.13.3.1	Checkout & Troubleshoot							-	-	-
18.13.3.2	Repair							-	-	-
18.13.4	Dial Lines 1 and 2 Maintenance	TO 21M-LGM30F-2-5-6								
18.13.4.1	Checkout & Troubleshoot							-	-	-
18.13.4.2	Repair							-	-	-
18.13.5	Launch Control Center - Security Control Center (LCC-SCC) Telephone Maintenance	TO 21M-LGM30F-2-5-6								
18.13.5.1	Checkout & Troubleshoot							-	-	-
18.13.5.2	Repair							-	-	-
18.13.6	SIN Jackboxes and Wall phones	TO 21M-LGM30F-2-5-6								
18.13.6.1	Replace MAF and LF jack boxes							-	-	-
18.13.6.2	Replace MAF and LF wall phones							-	-	-
18.13.7	Hardened Voice Channel (HVC) Equipment Maintenance	TO 21M-LGM30F-2-5-6								
18.13.7.1	Checkout & Troubleshoot							-	-	-
18.13.7.2	Repair							-	-	-
18.13.8	EWO-1 Equipment Maintenance	TO 21M-LGM30F-2-5-6								
18.13.8.1	Checkout & Troubleshoot							-	-	-
18.13.8.2	Repair							-	-	-
18.13.9	EWO-2 Equipment Maintenance	TO 21M-LGM30F-2-5-6								
18.13.9.1	Checkout & Troubleshoot							-	-	-
18.13.9.2	Adjust							-	-	-
18.13.9.3	Repair							-	-	-
18.13.10	LCC to Land Mobile Radio (LCC-LMR) Interface Equipment	TO 21M-LGM30F-2-5-6								
18.13.10.1	Checkout & Troubleshoot							-	-	-
18.13.10.2	Repair							-	-	-
18.13.11	SAC/CTE Maintenance	TO 21M-LGM30F-2-5-6								
18.13.11.1	Checkout & Troubleshoot (MCM Core)		5					-	-	-
18.13.11.2	Repair (MCM Core)		5					-	-	-
18.13.11.3	Adjust							-	-	-
18.13.11.4	Perform SACCS Circuit Switching Unit (SCSU) checkout and troubleshooting procedures							-	-	-
18.13.12	Voice Control Panel (VCP) Maintenance	TO 21M-LGM30F-2-5-6								
18.13.12.1	Checkout & Troubleshoot (MCM Core)		5					-	-	-
18.13.12.2	Replace							-	-	-
18.13.12.3	Repair							-	-	-
18.13.13	Voice Communications Control Panel (VCCP) Repeater Maintenance	TO 21M-LGM30F-2-5-6, Ch. 4								

18.13.13.1	Replace							-	-	-
18.13.13.2	Repair							-	-	-
18.13.14	Higher Authority Communication/Rapid Message Processing Element (HAC/RMPE) Maintenance (RMP) CP-2115/G	TO 31R2-2G-402								
18.13.14.1	Initialize, restart, and shutdown (MCM Core)		5					-	-	-
18.13.14.2	Checkout (MCM Core)		5					-	-	-
18.13.14.3	Replace							-	-	-
18.13.14.4	Perform RMP firmware update							-	-	-
18.13.15	Communications Gateway Rapid Message Processor Backup (RMPB)CP-2116/G Maintenance	TO 31R2-2G-402								
18.13.15.1	Initialize, restart, and shutdown (MCM Core)		5					-	-	-
18.13.15.2	Checkout (MCM Core)		5					-	-	-
18.13.15.3	Replace							-	-	-
18.13.15.4	Perform RMPB firmware update							-	-	-
18.13.16	Secure Voice Panel (SVP) Maintenance	TO 21M-LGM30F-2-5-6								
18.13.16.1	Replace							-	-	-
18.14	SACCS Off Equipment Maintenance/Test Equipment	Okidata ML590 Printer Handbook								
18.14.1	Keyboard Send Receive									
18.14.1.1	Checkout							-	-	-
18.14.1.2	Repair							-	-	-
18.14.2	Control Electronic Drawer (CED) (CP-1523/CP-1524)	TO 31S1-4-250-1								
18.14.2.1	Checkout							-	-	-
18.14.2.2	Troubleshoot							-	-	-
18.14.2.3	Repair							-	-	-
18.14.3	Summary Fault Unit (SFU) (ID-2295)	TO 31S5-2FSC83-11								
18.14.3.1	Checkout							-	-	-
18.14.3.2	Troubleshoot							-	-	-
18.14.3.3	Repair							-	-	-
18.14.4	Summary Fault Unit (SFU) (ID-2296)	TO 31S5-2FSC83-21								
18.14.4.1	Checkout							-	-	-
18.14.4.2	Troubleshoot							-	-	-
18.14.4.3	Repair							-	-	-
18.14.5	Power Supply (P-7811)	TO 31S5-2FSC83-31								
18.14.5.1	Checkout							-	-	-
18.14.5.2	Troubleshoot							-	-	-
18.14.5.3	Repair							-	-	-
18.14.6	Modulate/Demodulate (MODEM) (MO-1140)	TO 31S1-4-246-1								
18.14.6.1	Checkout							-	-	-
18.14.6.2	Troubleshoot							-	-	-
18.14.6.3	Repair							-	-	-
18.14.7	Red Direct Current (DC) Patch (SB-4144)	TO 31S5-2FSC83-51								
18.14.7.1	Checkout							-	-	-
18.14.7.2	Troubleshoot							-	-	-
18.14.7.3	Repair							-	-	-
18.14.8	Black DC/Voice Frequency (VF) Patch (SB-4143)	TO 31S5-2FSC83-41								
18.14.8.1	Checkout							-	-	-
18.14.8.2	Troubleshoot							-	-	-
18.14.8.3	Repair							-	-	-
18.14.9	Blower (HD-1102)	TO 31S5-2FSC83-72, 31S5-2FSC83-76WC-1								
18.14.9.1	Checkout							-	-	-
18.14.9.2	Troubleshoot							-	-	-
18.14.9.3	Repair							-	-	-
18.14.9.4	Perform preventive maintenance							-	-	-
18.14.10	MMTS	TO 33A1-3-522-1								
18.14.10.1	Function and operation							-	-	-
18.14.10.2	Checkout							-	-	-
18.14.10.3	Troubleshoot							-	-	-
18.14.10.4	Repair							-	-	-
18.14.10.5	Align							-	-	-
18.14.11	PSTS	TO 33D7-6-246-1								
18.14.11.1	Troubleshoot							-	-	-
18.14.11.2	Repair							-	-	-
18.14.11.3	Align							-	-	-

18.14.12	KIV-7M/FFA	TOs KA O-184, KAM-330, LMN-2A, LMM-5A, EGAZS2E251 01CA TSEC/KG 84 Series Limited Maintenance, CQTP2E251 01CA TSEC/KG-84 Strapping Options								
18.14.12.1	Checkout							-	-	-
18.14.12.2	Troubleshoot							-	-	-
18.14.12.3	Repair							-	-	-
18.14.12.4	Configure							-	-	-
18.15	Missile Control Communications System Off- Equipment Maintenance (WS-133A)									
18.15.1	Telephone Repeater (TA-463)	TO 31X1-8-6-2								
18.15.1.1	Checkout							-	-	-
18.15.1.2	Troubleshoot							-	-	-
18.15.1.3	Repair							-	-	-
18.15.2	Telephone Repeater (TA-464)	TO 31X1-8-6-2								
18.15.2.1	Checkout (MCM Core)		5					-	-	-
18.15.2.2	Troubleshoot (MCM Core)		5					-	-	-
18.15.2.3	Repair (MCM Core)		5					-	-	-
18.15.3	Power Supply (PP-3185/PP-3185A)	TO 31X1-8-6-2								
18.15.3.1	Checkout							-	-	-
18.15.3.2	Troubleshoot							-	-	-
18.15.3.3	Repair							-	-	-
18.15.4	Telephone Repeater (TA-465)	TO 31X1-8-6-2								
18.15.4.1	Checkout							-	-	-
18.15.4.2	Troubleshoot							-	-	-
18.15.4.3	Repair							-	-	-
18.15.5	Power Supply (PP-3186/PP-3186A)	TO 31X1-8-6-2								
18.15.5.1	Checkout							-	-	-
18.15.5.2	Troubleshoot							-	-	-
18.15.5.3	Repair							-	-	-
18.15.6	Telephone Repeater (TA-493)	TO 31W2-2GTC-42								
18.15.6.1	Checkout							-	-	-
18.15.6.2	Troubleshoot							-	-	-
18.15.6.3	Repair							-	-	-
18.15.7	Telephone Receiver-Repeater-Transmitter (TA-501)	TO 31W2-2GTC-42								
18.5.7.1	Checkout							-	-	-
18.5.7.2	Troubleshoot							-	-	-
18.5.7.3	Repair							-	-	-
18.15.8	Telephone Line Equalizer TA-503/Equalizer Modules	TO 31W2-2GTC-42								
18.15.8.1	Checkout							-	-	-
18.15.8.2	Troubleshoot							-	-	-
18.15.8.3	Repair							-	-	-
18.15.8.4	Adjust Equalizer Modules							-	-	-
18.15.8.5	Troubleshoot Equalizer							-	-	-
18.15.9	Fault Locating Indicators ID-1035/ID-1199	TO 31W2-2GTC-42								
18.15.9.1	Function and operation							-	-	-
18.15.9.2	Checkout							-	-	-
18.15.9.3	Troubleshoot							-	-	-
18.15.9.4	Repair							-	-	-
18.15.10	LF/MAF System Handsets and Headsets	TO 31X1-8-6-2								
18.15.10.1	Checkout							-	-	-
18.15.10.2	Modify							-	-	-
18.15.11	LF/MAF System Wall Phones	TO 31X1-8-6-2								
18.15.11.1	Checkout							-	-	-
18.15.11.2	Troubleshoot							-	-	-
18.15.11.3	Repair							-	-	-
18.15.12	LF/MAF System Jackboxes	TO 31X1-8-6-2								
18.15.12.1	Checkout							-	-	-
18.15.12.2	Troubleshoot							-	-	-
18.15.12.3	Repair							-	-	-
19	ICBM Test & Support Equipment									
19.1	Ground minuteman automatic test station (GMATS) (AN/GSM-315A)	TOs 33D9-61-57-31, 33D9-61-117-2, 21M-LGM30F-6WC-3								
19.1.1	Description							-	A	-
19.1.2	Perform operating instructions (ELAB Core)		5					-	-	-

19.1.3	Perform power and wake-up (ELAB Core)		5					-	-	-
19.1.4	Use test flow diagrams							-	-	-
19.1.5	Perform inspection and preventive maintenance							-	-	-
19.2	Coding equipment									
19.2.1	Hardware certification verification equipment (HCVE)	TO 31X8-2-3-1								
19.2.1.1	Description							-	A	-
19.2.1.2	Perform on-line diagnostics (ELAB Core)		5					-	-	-
19.2.1.3	Perform off-line diagnostics (ELAB Core)		5					-	-	-
19.2.1.4	Perform system configuration							-	-	-
19.2.1.5	Repair							-	-	-
19.2.1.6	Use programmable read-only memory programmer							-	-	-
19.2.1.7	Perform preventive maintenance							-	-	-
19.2.2	Wing Code Processing System	TOs 31X8-2-2-1, 31X8-2-2-2								
19.2.2.1	Description							-	A	-
19.2.2.2	Perform common certification operating system procedures (ELAB Core)		5					-	-	-
19.2.2.3	Troubleshoot							-	-	-
19.2.2.4	Repair							-	-	-
19.2.2.5	Perform preventive maintenance							-	-	-
19.2.2.6	Certify (ELAB Core)		5					-	-	-
19.3	Shielded enclosure	TO 31X8-2-2-2								
19.3.1	Door seal/fire alarm/communications panel circuitry									
19.3.1.1	Checkout							-	-	-
19.3.1.2	Troubleshoot							-	-	-
19.3.1.3	Repair							-	-	-
19.3.2	Fiber optics									
19.3.2.1	Checkout							-	-	-
19.3.2.2	Troubleshoot							-	-	-
19.3.2.3	Repair							-	-	-
19.3.2.4	Description of the nuclear certification of critical components	TOs 21M-LGM30F-12-1, 33D9-54-100-1						-	A	-
19.4	Nuclear Certification Test Station (AN/GSM-374) (WS-133AM)	TOs 33D9-54-100-1, 21M- LGM30F-12-1								
19.4.1	Description							-	A	-
19.4.2	Initialize and certify (ELAB Core)		5					-	-	-
19.4.3	Checkout (ELAB Core)		5					-	-	-
19.4.4	Troubleshoot							-	-	-
19.4.5	Repair							-	-	-
19.4.6	Calibrate							-	-	-
19.4.7	Disk Copy/Partition							-	-	-
19.4.8	Program/erase SMC-810 card							-	-	-
19.4.9	Certify SMC-810 card							-	-	-
19.4.10	Certify EMAD card							-	-	-
19.4.11	Verify RMB 32 card							-	-	-
19.4.12	Certify WSP drawer							-	-	-
19.4.13	Decertify WSP drawer							-	-	-
19.4.14	Decertify CDA assemblies							-	-	-
19.4.15	Decertify CDA/IPD card							-	-	-
19.5	Portable IPD Terminal									
19.5.1	Checkout							-	-	-
19.5.2	Troubleshoot							-	-	-
19.5.3	Repair							-	-	-
19.6	Alarm set test set (AN/GSM-319)	TO 33D9-137-20-1								
19.6.1	Checkout							-	-	-
19.6.2	Troubleshoot							-	-	-
19.6.3	Repair							-	-	-
19.7	Cable assembly set, electrical, models SE214A, SE536A1 (AN/GJA28A) (AN/GJQ-33) (ON-146/G)	TOs 21M-LGM30F-12-1								
19.7.1	Checkout							-	-	-
19.7.2	Certify W-5 cable							-	-	-
19.8	Code change verifier (KY-930/AJQ-21/SM- 876/G)	TOs 31X2-24-31-2, 21M-LGM30F- 12-1								
19.8.1	Self-test							-	-	-
19.8.2	Troubleshoot							-	-	-
19.8.3	Repair							-	-	-

19.8.4.	Certify (ELAB Core)		5					-	-	-
19.9.	Code change verifier test set	TOs 33D9-107-13-2, 21M- LGM30F-12-1								
19.9.1	Certify Program Memory Comparator							-	-	-
19.9.2	Checkout							-	-	-
19.9.3	Troubleshoot							-	-	-
19.9.4	Repair							-	-	-
19.10.	Connector adapter set (AN/GSM-85)	TO 31X2-56-8-1								
19.10.1	Perform continuity checks							-	-	-
19.10.2	Troubleshoot							-	-	-
19.10.3	Repair							-	-	-
19.11.	Connector adapter test set AN/GSM-94	TO 31X2-56-8-1								
19.11.1	Select connectors							-	-	-
19.11.2	Repair							-	-	-
19.12.	Controller Monitor (YG 9638A2)	TOs 33D9-111-35- 2,33D9-61-57-31								
19.12.1	Checkout							-	-	-
19.12.2	Troubleshoot							-	-	-
19.12.3	Repair							-	-	-
19.13.	Electrical cable assembly set (A/E 24A-148A) (A/E 24T-52) (A/E 24T-176) electrical lead assembly (HRK-465/E25T-1)	TOs 33D9-38-15-2								
19.13.1	Checkout							-	-	-
19.13.2	Troubleshoot							-	-	-
19.13.3	Repair							-	-	-
19.14.	Electrical power test set (AN/GJM-42) (AN/GJM-26) (AN/GJM-52) (AN/GJM-53)	TO 33D9-6-93-1								
19.14.1	Checkout							-	-	-
19.14.2	Troubleshoot							-	-	-
19.14.3	Repair							-	-	-
19.15.	Electronic facility-base maintenance test equipment (AN/GSM-82)	TO 33D9-6-21-1								
19.15.1	Description							-	A	-
19.15.2	Checkout							-	-	-
19.15.3	Troubleshoot							-	-	-
19.15.4	Repair							-	-	-
19.16.	R/T alarm set test set adapter (MX-18317/GSM-82)									
19.16.1	Checkout							-	-	-
19.16.2	Troubleshoot							-	-	-
19.16.3	Repair							-	-	-
19.16.4	Certify Digital Data Comparator W1 Cable	TO 21M-LGM30F-12-1						-	-	-
19.17.	Explosive Set Circuitry Test Set	TO 33D9-38-15-2								
19.17.1	Perform self-test							-	-	-
19.17.2	Troubleshoot							-	-	-
19.17.3	Repair							-	-	-
19.18.	Fault Locating Indicator (ID-2288/GSW)	TO 33D9-29-14-1								
19.18.1	Checkout							-	-	-
19.18.2	Troubleshoot							-	-	-
19.18.3	Repair							-	-	-
19.19.	Guidance section liquid cooler test set (TTU- 367A/E)	TO 33D9-17-81-2								
19.19.1	Checkout							-	-	-
19.19.2	Troubleshoot							-	-	-
19.19.3	Repair							-	-	-
19.19.4	Adjust							-	-	-
19.19.5	Perform waveform checkout of guidance set cooler test bench (A/E-47T-23)	TO 33D9-17-89-1						-	-	-
19.20.	Minuteman power processor/power system verification boxes	CEM 21-SM80-2-22								
19.20.1	Checkout							-	-	-
19.20.2	Troubleshoot							-	-	-
19.20.3	Repair							-	-	-
19.21.	RFI filter unit	TO 21M-LGM30F-112								
19.21.1	Checkout							-	-	-
19.21.2	Troubleshoot							-	-	-
19.21.3	Repair							-	-	-
19.22.	Site Activated Remote Controller (SARC)	TO 35M1-9-2-2								
19.22.1	Checkout							-	-	-

19.22.2	Repair							-	-	-
19.23.	Missile Systems Components Test Set	TO 33D9-9-9-1, 33D9-9-9-2								
19.23.1	Check out							-	-	-
19.23.2	Troubleshoot							-	-	-
19.23.3	Repair							-	-	-
19.23.4	Calibrate							-	-	-
19.24.	Guided Missile Launcher Electrical Circuit Test Set									
19.24.1	Checkout							-	-	-
19.24.2	Troubleshoot							-	-	-
19.24.3	Repair							-	-	-
19.24.4	Calibrate							-	-	-
19.24.5	Software maintenance							-	-	-
19.25.	Operational ground equipment (OGE)									
19.25.1	Common LF and MAF Equipment									
19.25.1.1	Strap/adjust electronic drawers (ELAB Core)	TO 3D9-61-58-2	5					-	-	-
19.25.1.2	Distribution box assemblies	TO 35M1-1-101								
19.25.1.2.1	Checkout							-	-	-
19.25.1.2.2	Troubleshoot							-	-	-
19.25.1.2.3	Repair							-	-	-
19.25.1.3	Minuteman power processor	CEM 21-SM80-2-22								
19.25.1.3.1	Checkout							-	-	-
19.25.1.3.2	Troubleshoot							-	-	-
19.25.1.3.3	Repair							-	-	-
19.25.1.4	Power signal distribution units, distribution boxes, and cable assemblies	TO 31X4-1-102								
19.25.1.4.1	Checkout							-	-	-
19.25.1.4.2	Troubleshoot							-	-	-
19.25.1.4.3	Repair							-	-	-
19.25.1.5	Wire assemblies	TO 31X4-1-142								
19.25.1.5.1	Perform continuity checks							-	-	-
19.25.1.5.2	Repair							-	-	-
19.25.2	LF Equipment (WS-133AM)									
19.25.2.1	Audio frequency detector (DT-252/GYK-2 and DT-312/GYK-2) URD 403A2	TOs 33D9-61-57-31, 33D9-61-58- 2								
19.25.2.1.1	Checkout							-	-	-
19.25.2.1.2	Troubleshoot							-	-	-
19.25.2.1.3	Repair							-	-	-
19.25.2.2	Control monitor (C-9212A/GSW-13, C- 10153A/GSW-13) URD 403A6	TOs 33D9-61-57-31, 33D9-61-58- 2, 21M-LGM30F-12-1								
19.25.2.2.1	Checkout (ELAB Core)		5					-	-	-
19.25.2.2.2	Troubleshoot							-	-	-
19.25.2.2.3	Repair							-	-	-
19.25.2.2.4	Certify (ELAB Core)		5					-	-	-
19.25.2.3	Digital data receiver-transmitter (RT-646/GYK-2) URD 403A3	TOs 33D9-61-57-31, 33D9-61-58- 2								
19.25.2.3.1	Checkout							-	-	-
19.25.2.3.2	Troubleshoot							-	-	-
19.25.2.3.3	Repair							-	-	-
19.25.2.4	Electronic equipment drawer (MX-9334/GSW-13) URD 403A1	TOs 33D9-61-57-31, 33D9-61-58- 2, 21M-LGM30F-12-1								
19.25.2.4.1	Perform continuity checks							-	-	-
19.25.2.4.2	Repair							-	-	-
19.25.2.5	Command Signal Decoder/Ground (KY-412/GYK-2)									
19.25.2.5.1	Reset/purge							-	-	-
19.25.2.6	Guidance and control coupler unit (CU- 2063/G) URD 403A5)	TOs 31R3-4-24-2, 33D9-61-57- 31, 21M-LGM30F-12-1								
19.25.2.6.1	Checkout (ELAB Core)		5					-	-	-
19.25.2.6.2	Troubleshoot							-	-	-
19.25.2.6.3	Repair							-	-	-
19.25.2.6.4	Certify (ELAB Core)		5					-	-	-
19.25.2.7	Guidance section liquid cooler electronic control amplifier URD 413A1	TO 35E9-35-22								
19.25.2.7.1	Checkout							-	-	-
19.25.2.7.2	Troubleshoot							-	-	-
19.25.2.7.3	Repair							-	-	-

19.25.2.8	Message processor (C-9211A/GSW-13) URD 403A4	TOs 33D9-61-57-21, 33D9-61-58- 2, 21M-LGM30F-12-1, 33D9-61-57-31							
19.25.2.8.1	Checkout (ELAB Core)		5					-	-
19.25.2.8.2	Troubleshoot							-	-
19.25.2.8.3	Repair							-	-
19.25.2.8.4	Certify (ELAB Core)		5					-	-
19.25.2.9	Power supply (PP-3030C/GSW-4) URD 406A1	TOs 33D9-61-57-31, 35C2-2-63-1							
19.25.2.9.1	Checkout							-	-
19.25.2.9.2	Troubleshoot							-	-
19.25.2.9.3	Repair							-	-
19.25.2.10	Power supply (PP-6879/GSW-13) URD 403A7	TO 31X3-12-13-2							
19.25.2.10.1	Checkout							-	-
19.25.2.10.2	Troubleshoot							-	-
19.25.2.10.3	Repair							-	-
19.25.2.11	Receiver-transmitter alarm set (RT-1533/FSQ-149) URD 475A1	TOs 31X3-31-9-2, 21M-LGM30F- 12-1							
19.25.2.11.1	Checkout (ELAB Core)		5					-	-
19.25.2.11.2	Troubleshoot							-	-
19.25.2.11.3	Repair							-	-
19.25.2.11.4	Certify (ELAB Core)		5					-	-
19.25.2.12	UHF radio receiver (R-1358A/B/GSW-10) URD 1475A1	TOs 33D9-61-57-31, 33D9-61-58- 2, 31X2-19-3-2							
19.25.2.12.1	Checkout							-	-
19.25.2.12.2	Troubleshoot							-	-
19.25.2.12.3	Repair							-	-
19.25.2.12.4	Adjust							-	-
19.25.2.12.5	Change frequency/address (ELAB Core)		5					-	-
19.25.3	MAF equipment (WS-133AM)								
19.25.3.1	Audio frequency amplifier (AM-3159) URD 303A4	TOs 33D9-61-57-31, 33D9-61-58- 2							
19.25.3.1.1	Checkout							-	-
19.25.3.1.2	Troubleshoot							-	-
19.25.3.1.3	Repair							-	-
19.25.3.2	Common Equipment Interface Unit (CEIU)	TO 33D9-74-42-2							
19.25.3.2.1	Checkout							-	-
19.25.3.2.2	Troubleshoot							-	-
19.25.3.2.3	Repair							-	-
19.25.3.3	Digital data receiver (R-1096, R-1096A) URD 303A2, A3	TOs 33D9-61-57-31, 33D9-61-58- 2							
19.25.3.3.1	Checkout							-	-
19.25.3.3.2	Troubleshoot							-	-
19.25.3.3.3	Repair							-	-
19.25.3.4	Digital data receiver (R-1131) URD 303A7	TOs 33D9-61-57-31, 33D9-61-58-2							
19.25.3.4.1	Checkout							-	-
19.25.3.4.2	Troubleshoot							-	-
19.25.3.4.3	Repair							-	-
19.25.3.5	Digital data transmitter (T-869) URD 303A1	TOs 33D9-61-57-1, 33D9-61-58-2							
19.25.3.5.1	Checkout							-	-
19.25.3.5.2	Troubleshoot							-	-
19.25.3.5.3	Repair							-	-
19.25.3.6	Electrical Equipment Cabinet (EEC)	TO 33D9-74-42-2							
19.25.3.6.1	Checkout							-	-
19.25.3.6.2	Troubleshoot							-	-
19.25.3.6.3	Repair							-	-
19.25.3.7	Message processing control (C-9043) URD 10364A6	TOs 33D9-61-57-31, 33D9-61-58- 2							
19.25.3.7.1	Checkout							-	-
19.25.3.7.2	Troubleshoot							-	-
19.25.3.7.3	Repair							-	-
19.25.3.8	Power supply (PP-3026/GSW-4, PP-3027/GSW-4)	TOs 35C2-2-63-1							
19.25.3.8.1	Checkout							-	-
19.25.3.8.2	Troubleshoot							-	-
19.25.3.8.3	Repair							-	-
19.25.3.8.4	Calibrate							-	-
19.25.3.9	Power supply (PP-4359/GSW-10) URD 305A7, 10364A7	TO 31X2-32-3-2							

19.25.3.9.1	Checkout							-	-	-
19.25.3.9.2	Troubleshoot							-	-	-
19.25.3.9.3	Repair							-	-	-
19.25.3.10	REACT Printer	TO 21M-LGM30G-2-12-4								
19.25.3.10.1	Checkout							-	-	-
19.25.3.10.2	Troubleshoot							-	-	-
19.25.3.10.3	Repair							-	-	-
19.25.3.11	Station alert ringing unit (MX-3681, MX-3682, MX-3683, MX-3684, MX-3685) URD 303A5	TOs 33D9-61-57-31, 33D9-61-58-2								
19.25.3.11.1	Checkout							-	-	-
19.25.3.11.2	Troubleshoot							-	-	-
19.25.3.11.3	Repair							-	-	-
19.25.3.12	Missile Away Indicator (ID-979) URD 303A6									
19.25.3.12.1	Checkout							-	-	-
19.25.3.12.2	Troubleshoot							-	-	-
19.25.3.12.3	Repair							-	-	-
19.25.3.13	Launch Environmental Protection System	TO 33D9-137-21-2								
19.25.3.13.1	Checkout							-	-	-
19.25.3.13.2	Troubleshoot							-	-	-
19.25.3.13.3	Repair							-	-	-
19.25.4	Aerospace Vehicular Equipment									
19.25.4.1	Missile Guidance Set	TOs 21M-LGM30G-2-33, 21M-LGM30F-12-1								
19.25.4.1.1	Description							-	A	-
19.25.4.1.2	Receive from special repair area							-	-	-
19.25.4.1.3	Install components (ELAB Core)		5					-	-	-
19.25.4.1.4	Prepare shipping container for MGS receipt							-	-	-
19.25.4.1.5	Remove components							-	-	-
19.25.4.1.6	Prepare for transport to special repair area							-	-	-
19.25.4.1.7	Repair							-	-	-
19.25.4.1.8	Repair MGS shipping container							-	-	-
19.25.4.1.9	Certify (ELAB Core)		5					-	-	-
19.25.4.1.10	Perform safety wiring	TO 1-1A-8						-	-	-
19.25.4.2	Missile Guidance Set Test Set (MGSTS)	TOs 33D9-3-284-1, 21M-LGM30F-12-1								
19.25.4.2.1	Description							-	A	-
19.25.4.2.2	Operate (ELAB Core)		5					-	-	-
19.25.4.2.3	Checkout (ELAB Core)		5					-	-	-
19.25.4.2.4	Troubleshoot							-	-	-
19.25.4.2.5	Repair							-	-	-
19.25.4.2.6	Calibrate							-	-	-
19.25.4.3	Squib Actuated Battery (SE-437C)									
19.25.4.3.1	Inspect							-	-	-
19.25.4.3.2	Checkout							-	-	-
19.25.4.3.3	Inspect and determine resistance on cable assembly 9W05Z							-	-	-
20	OPERATIONAL TEST LAUNCH	DAFPD 99-1, AFI 99-103, AFMCI 21-102, TOs 21M-LGM30G-1-17, 33D9-61-108-1								
20.1	Operational Test Launch	TO 21M-LGM30-2-17-9								
20.1.1	Perform Launch Capability Test							-	-	-
20.1.2	Check out final pre-launch (final enable)							-	-	-
20.1.3	Enter and safe post-launch LF							-	-	-
20.1.4	Range check							-	-	-
20.1.5	Confidence check									
20.1.6	Safe LF and Missile (hang fire)							-	-	-
20.2	Launch Environmental Protection System (LEPS)	TO 21M-LGM30-2-17-9								
20.2.1	Repair							-	-	-
20.2.2	Service							-	-	-
20.2.3	Troubleshoot							-	-	-
20.2.4	Start up/Power Removal for OD							-	-	-
20.2.5	Replace nitrogen bottle							-	-	-
21	TRAINING DEVICE/SYSTEMS									
21.1	Launch Facility Trainer (AN/GSQ-T12 and AN/GSQ-T9)	TO 43D2-3-27-1								
21.1.1	Operate							-	-	-
21.1.2	Perform startup							-	-	-

21.1.3	Perform shutdown							-	-	-
21.1.4	Perform emergency shutdown							-	-	-
21.1.5	Perform startup after inadvertent shutdown							-	-	-
21.1.6	Operate security system							-	-	-
21.1.7	Operate OGE power and systems							-	-	-
21.1.8	Operate Communication system							-	-	-
21.1.9	Operate Instructor control panel							-	-	-
21.1.10	Operate Ground G&C liquid cooling system							-	-	-
21.1.11	Operate Distribution Box							-	-	-
21.1.12	Operate Simulated environmental control system							-	-	-
21.2	Launch Facility Trainer (AN/GSQ-T10, AN/GSQ T13, and AN/GSQ-T41)	TOs 43D2-3-55-1, 43D2-3-81-1								
21.2.1	Operate							-	-	-
21.2.2	Perform startup							-	-	-
21.2.3	Perform shutdown							-	-	-
21.2.4	Perform startup after inadvertent shutdown							-	-	-
21.2.5	Operate security system							-	-	-
21.2.6	Operate OGE power and systems							-	-	-
21.2.7	Operate Communication system							-	-	-
21.2.8	Operate Instructor control panel							-	-	-
21.2.9	Operate Ground G&C liquid cooling system							-	-	-
21.2.10	Operate GMSR system							-	-	-
21.2.11	Operate Distribution Box							-	-	-
21.3	Missile Guidance Set Trainer (AN/DJW-36T1)	TO 43D2-3-73-1								
21.3.1	Operate							-	-	-
21.4	Control Monitor Procedures Trainer (AN/GSQ- T46/T47/T48/T49)	TO 43D2-3-93-1								
21.4.1	Operate							-	-	-
21.5	Environmental Control System/Power Procedures Trainer (A/F37FU-T19/T21/T22/T24/T25)	TOs 43D2-3-84-1, 43D2-3-88-1, 43D2-3-85-1, 43D2-3-89-1, 43D2-3-91-1, 43D2-3-92-1								
21.5.1	Perform startup							-	-	-
21.5.2	Perform shutdown							-	-	-
21.5.3	Perform emergency shutdown							-	-	-
21.6	Code Change Verifier Simulator (SM-876/G)	TO 43D2-3-18-1								
21.6.1	Operate							-	-	-
22	VEHICLE AND EQUIPMENT CONTROL									
22.1	Vehicles	AFI 24-302, AFMAN 24-306								
22.1.1	Maintain vehicle forms/records							-	-	-
22.1.2	Maintain vehicle accountability							-	-	-
22.1.3	Issue/receive vehicles							-	-	-
22.2	Perform preoperational checkout of:									
22.2.1	Payload transporter (PT)	TOs 21M-LGM30G-2-33, 36A9-8-57-1, 36A9-8-58-2						-	-	-
22.2.2	Mechanical maintenance truck	TOs 21M-LGM30G-2-10, 35D4-7-4-2, 36A12-24-3-1, 21M-LGM30F-2-17-9; Owner's Manual						-	-	-
22.3	Perform daily inspection of:									
22.3.1	Perform daily inspection general purpose vehicles	AFI 24-302, TO 36-1-191						2b	-	-
22.3.2	Perform daily inspection of special purpose vehicles	TOs 21M-LGM30G-2-33, 36-1-191						-	-	-
22.4	Equipment	AFI 24-301, DAFI 21-101, AFMAN 21-200								
22.4.1	Maintain equipment accountability	TO 36-1-191, DAFI 21-101, AFMAN 21-200						-	-	-
22.4.2	Perform explosive set circuitry test set self-test	TO 33D9-38-15-2						-	-	-
22.4.3	Inspect nuclear-certified equipment for serviceability	MNCL, TO 11N-HRV-5022-2						2b	-	-
22.4.4	Verify/update equipment status using MIS or TAS	MIS or TAS User's Guide						-	-	-
22.5	Equipment issue/receipt									

22.5.1	Inspect equipment for general serviceability	Applicable equipment TO						2b	-	-
22.5.2	Configure vehicles with equipment for dispatch	Applicable weapon system TO; load list						2b	-	-
22.5.3	Issue/receive equipment using MIS	MIS or TAS User's Guide						-	-	-
22.6	Nitrogen bottles	TOs 35M1-1-101, 42B5-1-1-2; AFMAN 91-203								
22.6.1	Maintain nitrogen bottles							-	-	-
22.6.2	Install/remove in purge manifold							-	-	-
22.6.3	Perform purge manifold checkout							-	-	-
22.7	Equipment recovery	TOs 00-25-234, 00-24-245, 1-1A-8, 11N-HRV-5022-2								
22.7.1	Repair equipment							-	-	-
22.7.2	Process equipment for disposition/maintenance							-	-	-
22.7.3	Fabricate local manufactured equipment							-	-	-
23	MISSILE MAINTENANCE OPERATIONS CENTER (MMOC)									
23.1	Understand site security requirements	AFI 31-101_AFGSCSUP						-	-	-
23.2	Evaluate/respond to reports from LFs/MAFs	TO 21M-LGM30X-2-1-X						-	-	-
23.3	Understand large maintenance vehicle operations							-	-	-
23.4	Understand the maintenance priority system							-	-	-
23.5	Monitor, update, and delete maintenance data							-	-	-
23.6	Coordinate with Materiel Control on priority changes, PMCS, NMCS, and MICAP conditions							-	-	-
23.7	Coordinate unscheduled dispatches							-	-	-
23.8	Maintain site logs using NMC2							-	-	-
23.9	Maintain senior controller logs using NMC2							-	-	-
23.10	Conduct daily GMR/MOSR cross-check							-	-	-
23.11	Monitor critical equipment and vehicle status							-	-	-
23.12	Coordinate with BCE on RPIE maintenance requirements and interruptions of normal commercial power	AFGSCI 13-5301V5, EAP-STRAT VOL 16						-	-	-
23.13	Coordinate and document airborne launch and control systems tests	TO 21M-LGM30X-2-1-X, ALCC Log						-	-	-
23.14	Coordinate and document code change action	TO 21M-LGM30G-2-1-X, AFGSCI 13-5301V5						-	-	-
23.15	Coordinate and document cannibalization procedures	TO 00-20-2						-	-	-
23.16	Report wing status	AFI 21-103, MCR 55-8						-	-	-
23.17	Use secure communication equipment	Operating Manual						-	-	-
23.18	Process official incoming/outgoing communications							-	-	-
23.19	Operate ECS Remote Monitoring System (ERMS)	TOs 21M-LGM30G-2-5-8, 21M-LGM30G-2-7-(x)						-	-	-
23.20	Operate Remote Environmental Control System (RECS) Monitor Computer Terminal (576 FLTS)	TO 21M-LGM30F-2-30-1						-	-	-
23.21	Operate remote visual assessment (RVA) system							-	-	-
23.22	Use checklists to:									
23.22.1	Respond to disaster situations							-	-	-
23.22.2	Coordinate PSRE movements/emergency actions							-	-	-
23.22.3	Coordinate missile movements/emergency actions							-	-	-
23.22.4	Coordinate RS movements/emergency actions							-	-	-
23.22.5	Coordinate emergency procedures							-	-	-
23.22.6	Coordinate missile potential hazards (MPH)							-	-	-
23.23	Classified material/information									
23.23.1	Process, protect, and destroy							-	-	-
23.23.2	Handle, store, and account							-	-	-
24	DATA ANALYSIS (DELETED)									

25	PLANS AND SCHEDULING	AFMAN 21-202, 21-200								
25.1	Maintenance Schedules									
25.1.1	Prepare and maintain quarterly maintenance plan							-	-	-
25.1.2	Prepare weekly utilization and maintenance plan							-	-	-
25.1.3	Conduct weekly scheduling meeting							-	-	-
25.1.4	Prepare daily utilization and maintenance plan							-	-	-
25.1.5	Conduct daily scheduling meeting							-	-	-
25.2	Plan and coordinate									
25.2.1	Simulated Electronic Launches							-	-	-
25.2.2	Hardness Surveillance Electromagnetic Pulse (HSEP) tests							-	-	-
25.2.3	Code change / OLYMPIC STEP							-	-	-
25.2.4	TCTO/MCL modification program							-	-	-
25.2.5	EWO generation meeting							-	-	-
25.2.6	Periodic maintenance program							-	-	-
25.2.7	Programmed Depot Maintenance (PDM) programs							-	-	-
25.2.8	NST Inspection support							-	-	-
25.3	AVDO	AFI 21-103								
25.3.1	Coordinate Missile Shipment requirements with Depot							-	-	-
25.3.2	Prepare documents for outgoing shipment							-	-	-
25.3.3	Verify Booster configuration for shipment							-	-	-
25.3.4	Receive incoming booster							-	-	-
25.3.5	Email Change Reports							-	-	-
25.3.6	File electronic/hardcopy documents							-	-	-
25.4	Scheduling Programs									
25.4.1	Develop daily work packages							-	-	-
25.4.2	Manage job standard transactions (JSTs)							-	-	-
25.4.3	Manage Maintenance Scheduling Effectiveness program							-	-	-
25.4.4	Complete/coordinate AF Form 2407							-	-	-
25.5	Reentry systems									
25.5.1	Run Line 100 checklist							-	-	-
25.5.2	Build RS movement briefing							-	-	-
25.5.3	Execute meeting/distribute slides							-	-	-
25.6	Site files	TO 00-20-1, AFMAN 21-202								
25.6.1	Maintain site files							-	-	-
25.6.2	Process AFTO Form 95s							-	-	-
25.6.3	Process physical inventory sheets							-	-	-
25.6.4	Process AFTO Form 430s							-	-	-
26	QUALITY ASSURANCE	AFMAN 21-200, AFMAN 21-202								
26.1	Inspections									
26.1.1	Conduct management inspections							-	-	-
26.1.2	Conduct quality verification inspections							-	-	-
26.1.3	Conduct activity inspections							-	-	-
26.1.4	Conduct special inspections							-	-	-
26.1.5	Oversee one-time inspections	TO 00-20-1						-	-	-
26.2	Proficiency evaluations	AFMAN 21-200								
26.2.1	Conduct personnel proficiency evaluations							-	-	-
26.2.2	Conduct trainer proficiency evaluations							-	-	-
26.2.3	Document evaluations/inspection/observation results							-	-	-
26.3	Technical data	TOs 00-5-1, AFGSCI 32-1005								
26.3.1	Review new/revised technical data							-	-	-
26.3.2	Review local publications/instructions							-	-	-
26.3.3	Review approved AFTO 22/AFGSC 272s							-	-	-
26.4	Training									
26.4.1	Conduct QA Orientation Course							-	-	-
26.4.2	Conduct Deficiency Reporting course							-	-	-

26.4.3	Review local lesson plans/training outlines							-	-	-
26.5	Product Improvement Program	AFMAN 21-200								
26.5.1	Process deficiency reports	TO 00-35D-54, AFMAN 23-122						-	-	-
26.5.2	Process technical data changes (AFTO 22s/AFGSC 272s)							-	-	-
26.5.3	Process modification proposals (AF 1067)	AFI 63-101/20-101						-	-	-
26.5.4	Conduct review of TCTOs/MCLs							-	-	-
26.5.5	Coordinate Technical Assistance Requests (TAR)	T0 00-25-107						-	-	-
26.5.6	Coordinate Maintenance Assistance Requests (MAR)	T0 00-25-107						-	-	-
26.5.7	Review MMOC Checklists									
27	ICBM CODES VAULT									
27.1	Procedures									
27.1.1	Lock/Alarm class A vault door	TO 00-20F-2, EAP-STRAT VOLUME 16, AFGSCI 13- 5301V5						-	-	-
27.1.2	Maintain security of division containers, locks/combinations	AFPD 31-1, EAP- STRAT VOLUME 16						-	-	-
27.1.3	Maintain visitor control	EAP-STRAT VOLUME 16, AFGSCI 13-5301V5						-	-	-
27.1.4.	Maintain code controller operations records	EAP-STRAT VOLUME 16, AFGSCI 13-5301V5						-	-	-
27.2.	Comply with system control/requirements for:	EAP-STRAT VOLUME 16, AFGSCI 13-5301V5								
27.2.1	WCPS							-	-	-
27.2.2	20 year spares							-	-	-
27.2.3	HCVE							-	-	-
27.2.4	Master CDs							-	-	-
27.2.5	LCP/keys							-	-	-
27.2.6	LEP							-	-	-
27.2.7	CCV/CSD(M)							-	-	-
27.2.8	P Plug							-	-	-
27.2.9	LFLCD (CL/CC/PEN-D)							-	-	-
27.2.10	Encryption System components							-	-	-
27.2.11	Program CDs							-	-	-
27.2.12	Target materials and execution plans							-	-	-
27.2.13	TDIs							-	-	-
27.2.14	CSD(G)							-	-	-
27.2.15	IMU tapes							-	-	-
27.2.16	MGS Parameters data							-	-	-
27.2.17	Data Transfer Unit (DTU)							-	-	-
27.2.18	Tape transport (C-164A)							-	-	-
27.2.19	MCU							-	-	-
27.2.20	MGS computer							-	-	-
27.2.21	WCPS computer							-	-	-
27.2.22	Sum check controls							-	-	-
27.2.23	Off base training LF							-	-	-
27.2.24	Test components/SELM/HSEP							-	-	-
27.2.25	Code change procedures							-	-	-
27.2.26	Failed WCPS components							-	-	-
27.2.27	WSP							-	-	-
27.2.28	Worldwide Unlock Code (WWUC) Change	USSTRATCOM OPLAN 8044						-	-	-
27.3	Record Keeping & Documentation	AFIs 33-322, EAP-STRAT VOLUME 16, AFGSCI 13- 5301V5								
27.3.1	Establish and maintain files							-	-	-
27.3.2	File and locate records							-	-	-
27.3.3	Classify and control records							-	-	-
27.3.4	Maintain component control records							-	-	-
27.3.5	Maintain WCPS operation records							-	-	-
27.3.6	Maintain receipt/disposition records							-	-	-
27.4	Perform reporting and emergency response capability/procedures:									
27.4.1	Possible Code Compromise (PCC)	EAP-STRAT VOLUME 16 APPENDIX A, EAP-STRAT VOLUME 16, AFGSC 13-5301V5						-	-	-
27.4.2	Two-person concept violations	AFI 91-101						-	-	-
27.4.3	Single flight/Emergency Combat Capability (ECC)	AFI 91-114; EAP-STRAT VOLUME 16						-	-	-

		APPENDIX A								
27.4.4	Lateral coding	EAP-STRAT VOLUME 16 APPENDIX A						-	-	-
27.4.5	Emergency evacuation/destruction	EAP-STRAT VOLUME 16 APPENDIX A						-	-	-
27.4.6	Violations of code handling procedures	EAP-STRAT VOLUME 16 APPENDIX A, EAP-STRAT VOLUME 16						-	-	-
27.4.7	Possible compromise to Tamper Detection Indicator (TDI) technology	EAP-STRAT VOLUME 16 APPENDIX A, EAP-STRAT VOLUME 16						-	-	-
27.4.8	Codes Related Events (CRE)	EAP-STRAT VOLUME 16, AFGSCI 13-5301V5						-	-	-
27.5	Code components, programs, and misc. materials	EAP-STRAT VOLUME 16, AFGSCI 13-5301V5								
27.5.1	Receipt for materials							-	-	-
27.5.2	Store materials							-	-	-
27.5.3	Inventory materials							-	-	-
27.5.4	Dispose of materials							-	-	-
27.5.5	Transfer materials							-	-	-
27.5.6	Identify, classify, and mark materials							-	-	-
27.6	Field Configuration Requirements	EAP-STRAT VOLUME 16, AFGSCI 13-5301V5								
27.6.1	Operational/test code configuration									
27.6.1.1	Monitor code requirements/status							-	-	-
27.6.1.2	Coordinate job requirements							-	-	-
27.6.1.3	Maintain work status boards							-	-	-
27.6.2	Team dispatch/recovery	EAP-STRAT VOLUME 16, AFGSCI 13-5301V5								
27.6.2.1	Prepare materials/equipment for issue							-	-	-
27.6.2.2	Identify and brief team							-	-	-
27.6.2.3	Apply issue restrictions							-	-	-
27.6.2.4	Recover materials							-	-	-
27.6.3	Status of field teams/materials									
27.6.3.1	Monitor transport of material							-	-	-
27.6.3.2	Monitor transfer of material							-	-	-
27.6.3.3	Monitor field storage of material							-	-	-
27.6.3.4	Monitor installation of materials							-	-	-
27.6.3.5	Inspect secondary level TDIs							-	-	-
27.7	Equipment configuration	TO 31X8-2-2-1								
27.7.1	Install/remove LEP							-	-	-
27.7.2	Activate reset tamper mechanism and install/remove MCU From panel							-	-	-
27.7.3	Install/remove MCU in MCU encoder drawer							-	-	-
27.7.4	Degauss/destroy media							-	-	-
27.7.5	Install/remove CSD(G) test adapter							-	-	-
27.7.6	Install/remove CSD(G)							-	-	-
27.7.7	Install/remove LCP test adapter							-	-	-
27.7.8	Install/remove P Plug test adapter	TO 31X8-2-2-2						-	-	-
27.7.9	Install/remove KVP test adapter	TO 31X8-2-2-2						-	-	-
27.7.10	Install/remove media							-	-	-
27.7.11	Load/adjust/unload printer paper							-	-	-
27.7.12	Load/remove printer ribbon cartridge							-	-	-
27.7.13	Install/remove KVP test adapter							-	-	-
27.7.14	Erase DTU memory							-	-	-
27.8	Equipment checkout	TO 31X8-2-2-1								
27.8.1	Perform DTU self-test							-	-	-
27.8.2	Perform CCV self test							-	-	-
27.8.3	Perform DTU self-test/preparation for load							-	-	-
27.9	Equipment malfunctions	TOs 31X8-2-2-1, 31X8-2-2-2								
27.9.1	Perform corrective actions							-	-	-
27.9.2	Perform WCPS emergency shutdown							-	-	-
27.9.3	Perform encryption emergency operations							-	-	-
27.10	Shielded enclosure	TO 31X8-2-2-1								
27.10.1	Perform SE visual inspection							-	-	-
27.10.2	Perform SE fire alarm test							-	-	-
27.10.3	Perform SE environmental test							-	-	-
27.10.4	Perform SE air pressure and door seal test							-	-	-
27.10.5	Perform SE communications test							-	-	-
27.10.6	Perform UPS remote panel inspection							-	-	-
27.11	WCPS power	TO 31X8-2-2-1								
27.11.1	Boot-up WCPS - normal start procedure							-	-	-
27.11.2	PVS key change/reload							-	-	-
27.12	CCOS executive functions, Perform:	TOs 31X8-2-2-1, 31X8-2-2-								

		2								
27.12.1	Computer subsystem test							-	-	-
27.12.2	CRT/keyboard terminal test							-	-	-
27.12.3	Power supplies/ADC test							-	-	-
27.12.4	Disc assembly test							-	-	-
27.12.5	Line printer test							-	-	-
27.12.6	Isolation circuit test							-	-	-
27.12.7	Digital clock test							-	-	-
27.12.8	KIV-7M/modem comm link test							-	-	-
27.12.9	P-Plug adapter test							-	-	-
27.12.10	MCU encoder test/MCU certification test							-	-	-
27.12.11	LCP interface test							-	-	-
27.12.12	LEP adapter panel interface test							-	-	-
27.12.13	CSD(G) interface test							-	-	-
27.12.14	System/KS-60 interface test							-	-	-
27.12.15	CCV interface test							-	-	-
27.12.16	BS/L test							-	-	-
27.12.17	FDD test							-	-	-
27.12.18	CD-RW interface test							-	-	-
27.12.19	External KS-60 interface test							-	-	-
27.12.20	SKL interface test							-	-	-
27.12.21	Execute all Self-Test							-	-	-
27.12.22	End item load							-	-	-
27.12.23	Display equipment status							-	-	-
27.12.24	Display/reset log file							-	-	-
27.12.25	Pack data disc							-	-	-
27.12.26	Prepare new data disk							-	-	-
27.12.27	Receive data via link							-	-	-
27.12.28	Edit link control files							-	-	-
27.12.29	Perform manual record keeping							-	-	-
27.12.30	Relog (change operator)							-	-	-
27.12.31	Verify CD copies							-	-	-
27.12.32	Select commanded overwrite							-	-	-
27.12.33	Perform media to media conversion							-	-	-
27.12.34	Perform console shutdown							-	-	-
27.12.35	Backup system disk							-	-	-
27.12.36	Format disc in data drive							-	-	-
27.12.37	Load WCPS key CD							-	-	-
27.13	Accomplish master data control (WMAPI)	TO 31X8-2-2-1								
27.13.1	Load A and B Code CDs							-	-	-
27.13.2	Load pen data							-	-	-
27.13.3	Assign pen data to LF							-	-	-
27.13.4	Display master data							-	-	-
27.13.5	Load/delete P-Plug data							-	-	-
27.13.6	Load/replenish REACT I code data							-	-	-
27.13.7	Load LF I code data							-	-	-
27.13.8	Prepare end item CDs (media)							-	-	-
27.14	Establish support data	TO 31X8-2-2-1								
27.14.1	Load execution plan							-	-	-
27.14.2	Load OGP/OPF data							-	-	-
27.14.3	Load MGS parameter data							-	-	-
27.14.4	Load REACT support data							-	-	-
27.14.5	Load LF master data							-	-	-
27.14.6	Load flight program constant data							-	-	-
27.15	Generate and verify data (WMAPI)	TO 31X8-2-2-1								
27.15.1	Complete load LFLCD							-	-	-
27.15.2	Code change LFLCD							-	-	-
27.15.3	Pen D LFLCD							-	-	-
27.15.4	Wing code backup disk (system/data)							-	-	-
27.16	Encode and verify devices (WMAPI)	TO 31X8-2-2-1								
27.16.1	Encode and verify LEP							-	-	-
27.16.2	Encode and verify LCP							-	-	-
27.16.3	Encode and verify CCV							-	-	-
27.16.4	Perform CCV trace data functions							-	-	-
27.16.5	Verify CSD(G)							-	-	-
27.17	Data verification	TO 31X8-2-2-1								
27.17.1	Perform launch verification							-	-	-
27.17.2	Verify LEP							-	-	-
27.18	Verify only data functions	TO 31X8-2-2-1								
27.18.1	Verify complete load LFLCD							-	-	-
27.18.2	Verify code change LFLCD							-	-	-
27.18.3	Verify Pen D LFLCD							-	-	-
27.19	Media ID data	TO 31X8-2-2-1								
27.19.1	Display Part A/Part B CD ID data							-	-	-
27.19.2	Display master code CD ID data							-	-	-

27.19.3	Display LCF BS/L HAD ID data							-	-	-
27.19.4	Display LCF diskette ID data							-	-	-
27.19.5	Display LFLCD ID data							-	-	-
27.19.6	Display key CD ID data							-	-	-
27.20	Load and verify devices	TO 31X8-2-2-1								
27.20.1	Initialize LCF BS/L HAD							-	-	-
27.20.2	Load/verify LCF BS/L HAD							-	-	-
27.20.3	Load/verify LCF diskettes							-	-	-
27.20.4	Perform transfer of LFLCD files to DTU							-	-	-
27.21	Respond to invalid sum check	TO 31X8-2-2-1								
27.21.1	Validate CMSC/Perform CMSC backout procedures							-	-	-
27.21.2	Validate VN/respond to unsuccessful VNs							-	-	-
27.22	KS-60 Management									
27.22.1	Manage wing pool data							-	-	-
27.22.2	Assign HICS KS-60 key to squadron							-	-	-
27.22.3	Load external KS-60							-	-	-
27.22.4	Load black KS-60 keys in SKL							-	-	-
27.22.5	Unload KS-60 trace data from SKL							-	-	-
27.22.6	Perform SKL audit data operations							-	-	-
27.23	Administrative communications management	AFMAN 33-326, AFKAG-3H, EAP-STRAT VOLUME 16, AFGSCI 13-5301V5								
27.23.1	Process, protect, and destroy classified information							-	-	-
27.23.2	Apply classification markings							-	-	-
27.23.3	Handle/store/account for classified materials							-	-	-
27.23.4	Document/package/process package for courier/classified shipments							-	-	-
28	TECHNICAL ENGINEERING									
28.1.	Use technical data, special drawings, engineering data, and other data as applicable	Special contractor data; depot instructions; CE technical data; as built drawings; engineering data; Inertial Performance Data (IPD); Launch Facility Activity Data (LFAD)						-	-	-
28.2.	Conduct engineering studies	Applicable technical data; AFMAN 21-202						-	-	-
28.3.	Evaluate applicable Engineering Change Proposals (ECPs) and Facility Change Proposals (FCPs)	Applicable technical data; AFMAN 21-202						-	-	-
28.4.	Perform technical assistance and/or analysis for system effectiveness	Applicable technical data						-	-	-
28.5.	Perform technical engineering EWO planning duties	Local OPLAN directives						-	-	-
28.6.	Perform Disaster Control Group Team duties	Local OPLAN directives						-	-	-
28.7.	System anomalies	TR: Applicable technical data								
28.7.1.	Troubleshoot							-	-	-
28.7.2.	Use special engineering test equipment							-	-	-
28.7.3.	Document faults and dispatches							-	-	-

Attachment 3

2M0X1 (ALCM) SPECIALTY TRAINING STANDARD

1. Task ID	2. Knowledge	3. REFERENCE	CORE TASK	TRAINING CERTIFICATION				PROFICIENCY CODES		
				TRNG START	TRNG COMP	TRAINEE INITIALS	TRAINER INITIALS	3LVL CRSE	5LVL CDC	7LVL CRSE
1	SPECIALTY INTRODUCTION									
1.1	2M0 AFSC description	AFECD						A	A	-
1.2	Progression in career ladder (2M0X1B)	2M0X1 CFETP						A	-	-
1.3	Duties of AFSS 2M0X1A/B	AFMAN 21-202, AFECD						A	A	-
2	ORGANIZATION									
2.1	Organizational structure	AFI 38-101, AFMAN 21-200						A	B	-
2.2.	Functions and responsibilities of missile organizations							-	A	-
3	DOCTRINE									
3.1	Description	Basic Doctrine, Vol 1 1						A	-	B
3.2	Nuclear Operations Overview	Annex 3-72						A	-	B
3.3	AFTTP 3-3. Muns and Missile Mx Overview							-	-	B
3.4	AFTTP 3-3 ICBM Overview							-	-	B
4	ADMINISTRATION	DAFI 36-2670, AFMAN 21-202								
4.1	Perform initial eval/work center orientation		7					-	-	3c
4.2	Conduct pre-dispatch/pre-task maintenance briefings		7					-	-	3c
4.3	Team chief duties							-	B	B
4.4	Bay chief duties							-	-	B
4.5	Technician duties							B	-	-
5	TRAINING	AF Training Course, AFMAN 21-202, DAFI 36-2670								
5.1	Plan and supervise training programs		7					-	-	3c
5.2	Instructor/trainer duties							-	B	-
5.3	Conduct qualification training							-	-	b
5.4	Maintain training records		7					-	-	3c
6	PUBLICATIONS									
6.1	Standard Publications	DAFI 33-360								
6.1.1	Description							A	-	-
6.1.2	Use standard publications							2b	-	-
6.2.	Technical Order (TO) System	TO 00-5-1								
6.2.1	TO System Description							A	-	B
6.2.2	Use technical orders							3c	-	-
6.2.3	Initiate TO improvement report							a	-	-
7	SAFETY	AFI 91-101, 91-202, TOs 00-25-245, 31-1-141, AFMAN 91-203								
7.1	Hazards of AFSC							B	-	-
7.2	Personal safety equipment serviceability inspection							2b	-	-
7.3	Hazardous Communication (HAZCOM)	AFI 90-821						A	-	-
7.4	USAF Mishap Prevention Program	AFI 91-202								
7.4.1	Description							A	-	-
7.4.2	Hazard identification and reporting process							A	-	-
7.4.3	Complete/submit AF Form 457							-	-	-
7.5	Missile Safety	TO 21M-AGM86-2-1						A	-	-
7.6	Explosive safety standards	AFMAN 91-201, TO 11N-W80.83-2						A	-	-
8	ENVIRONMENTAL COMPLIANCE									
8.1	Hazardous Waste Management	AFMAN 32-7002, 40CFR Part 261, 262, 29 CFR Part 1910						A	-	-
8.2	Hazardous Material Management	AFMAN 32-7002, 49 CFR Part 107, 172						A	-	-
9	NUCLEAR WEAPONS SURETY	DoDD 3150.02, DoDD 5210.41, DoD S-5210-42-R, AFI 91-101, 91-102, 91-115, 91-116, DAFI 91-112, AFMANs 91-118, AFMAN 91-201								
9.1	Nuclear Surety									

9.1.1	Nuclear Surety Program							A	-	-
9.1.2	Two Person Concept							A	-	-
9.1.3	Weapon System Safety Rules							A	A	B
9.1.4	Nuclear deficiency reports	AFMAN 91-221						A	-	-
9.2	Nuclear Certified Equipment (NCE)	AFI 63-125, MNCL								
9.2.1	Description/Positive Identification/Restrictions							A	-	-
9.2.2	NCE Management							-	-	B
9.2.3	Perform nuclear certification verification using MNCL		5					b	-	-
9.3	Nuclear Weapons Logistics Movements									
9.3.1	Custody Transfer							-	A	-
9.3.2	Complete AF Form 504							-	-	-
10	MAINTENANCE MANAGEMENT	AFPD 21-1, AFMAN 21-202, 21-200, DAFI 21-101, AFI 38-101								
10.1	Maintenance data collection (MDC)	TO 00-20-2								
10.1.1	Purpose & Description							A	B	B
10.1.2	Use work unit code manuals	TO 21M-AGM86-06	7					-	-	3c
10.1.3	Complete AFTO 350 tags	TO 00-20-2	5					-	-	-
10.1.4	Complete DD Form 1500-series tags	TO 00-20-3	5					-	-	-
10.1.5	Complete AFTO Form 95, Significant Historical Record	TO 00-20-1						-	-	-
10.1.6	Verify AFTO Form 244/245, Industrial Support Equipment Record	TO 00-20-3	5					2b	-	-
10.1.7	Evaluate MDC tags							-	-	2b
10.2	Integrated Maintenance Data System (IMDS)	IMDS User's Guide, TO 00-20-2								
10.2.1	Description							A	-	-
10.2.2	Use IMDS		5					-	-	-
10.2.3	Perform supervisory data review		7					-	-	3c
10.3	Deficiency report (DR)	TO 00-35D-54								
10.3.1	Description							-	B	-
10.3.2	Initiate deficiency report		7					-	b	3c
10.4	Maintenance/Engineering Technical Assistance (MAR/TAR) Request	TO 00-25-107								
10.4.1	Description							-	B	-
10.4.2	Submit MAR/TAR		7					-	b	3c
11	MATERIEL MANAGEMENT AND SUPPLY DISCIPLINE									
11.1	Supply system									
11.1.1	Description	AFI 23-101, 23-111, AFMAN 23-122, AFH 23-123						-	B	B
11.1.2	Use illustrated parts breakdown (IPB)	TO 21M-AGM86-4-1						2b	b	-
11.2	Supply Forms	AFI 23-101, TO 00-20-series								
11.2.1	Complete AF Form 2005		5					-	b	-
11.2.2	Complete DD Form 1348-6		5					-	b	-
11.3	Materiel management/stock	AFI 23-101								
11.3.1	Description							-	B	-
11.3.2	Issue/Inventory/Maintain		7					-	-	b
12	TOOLS AND EQUIPMENT	TOs 00-20-14, 00-25-234, 32-1-2, 32-2-101, 32-1-151, 32B14-3-1-101, 1-1-2, 1-1A-8, 1-1A-14, 1-1A-15, 21M-LGM30G-2-10, 21M-LGM3 0F-112, 31-1-141 series, 33A1 series								
12.1	Tools									
12.1.1	Use tools	TO 32-1-101						3c	-	-
12.1.2	Manage tools	DAFI 21-101, AFMAN 21-200						-	-	-
12.1.3	Use torque wrenches	TO 32B14-3-1-101						3c	-	-
12.2	Test equipment	TO 33-1-21; Applicable Manufacturers Operation and Service Instructions								
12.2.1	Use digital multimeters	TOs 33A1-12-1059-1, 33A1-12-1092-1, 33A1-12-1176-1, 33A1-12-1177-1, 33A1-12-1198-1, 33A1-12-1199-1						2b	-	-
12.2.2	Use oscilloscopes							-	-	-
12.2.3	Use power meters							-	-	-

12.2.4	Use power supplies	TO 33A17-176-1						-	-	-
12.2.5	Use signal generators							-	-	-
12.2.6	Use bonding meters	TO 33A1-12-1124-1, Applicable Manufacturers Operation and Service Instructions						-	-	-
12.2.7	Use milliohm meter	TO 33A1-12-924-1						-	-	-
13	GENERAL MAINTENANCE	TOs 00-25-234, 1-1A-1, 1-1A-8, 1-1A-14, 1-1A-15, 33D9-61-58-2, applicable owners manual								
13.1	Common practices									
13.1.1	Troubleshooting techniques							-	B	B
13.1.3	Corrosion identification	TO 1-1-8, 21M-AGM86-23						A	-	-
13.1.4	Perform safety wiring	TO 1-1A-8						2b	-	-
13.2	Aerospace hardware (AN/MS)									
13.2.1	Description							A	-	-
13.2.2	Use aerospace hardware							3c	-	-
13.3	RFI/EMI gaskets	TO 33D9-19-55-1								
13.3.1	Inspect							-	b	-
13.3.2	Repair							-	-	-
13.4	Electrostatic discharge (ESD) control procedures	TO 00-25-234								
13.4.1	Description							A	-	-
13.4.2	Perform ESD procedures							-	-	-
13.5	Common electrical practices	TOs 00-25-234, 00-25-259, 1-1A-14, 1-1A-15, 31-1-141-15, 31-10-7, 34W4-1-5, 34W4-1-7, 34W4-1-8								
13.5.1	Perform soldering/desoldering procedures							-	-	-
13.5.2	Assemble simple connectors							-	-	-
13.5.3	Repair wiring							-	-	-
13.5.4	Repair general connectors							-	-	-
13.5.5	Perform cable binding and lacing							-	-	-
13.5.6	Qualify solderless wire wrapping tool kit (TK-148/g)							-	-	-
13.5.7	Perform wire wrapping							-	-	-
13.5.8	Clean electronic equipment							-	-	-
13.5.9.	Perform visual inspection									
13.6	Pressure Systems	TOs 00-25-223, 00-25-229, 1-1A-8, 33-1-19, 42B2-1-3, 42E1-1-1, 42E2-1-2, 44H3-1-3								
13.6.1	Pneumatic system theory and operation							-	A	-
13.6.2	Hydraulic system theory and operation							-	A	-
13.7	Tubing Maintenance	TOs 00-25-223, 1-1A-8								
13.7.1	Flare tubing							-	-	-
13.7.2	Swage tubing							-	-	-
14	WEAPON SYSTEMS DESCRIPTION									
14.1	Nuclear Theory and effects	TO 21M-LGM30G-1-1						A	-	-
14.2	ICBM Missile (WS-133AM) description	TOs 21M-LGM30G-1-1, 21M-LGM30G-2-10						A	-	-
14.3	Cruise missile									
14.3.1	ALCM (AGM-86B) description	TO 21M-AGM86-2-1						A	B	-
14.3.2	CALCM (AGM-86C) description	TO 21M-AGM86-2-3						A	B	-
15	WEAPONS SYSTEMS STORAGE AND MAINTENANCE AREAS	AFMAN 91-201, 32-1065, AFI 23-201, DAFI 31-101, AFMAN 91-203, DoDM 5210.41								
15.1	Weapons storage structures (igloos)							A	B	-
15.2	Un-armed missile storage facility							A	B	-
15.3	Integrated Maintenance Facility layout/functions							A	B	-
15.4	Cruise missile generation (AGM-86B)							-	A	-
16	TEST AND EVALUATION	AFI 99-103								
16.1	Mission of Air Force Operational Test and Evaluation Centers							-	-	A
16.2	Weapon System Evaluation Program (WSEP and NucWSEP)							-	B	-
17	SPACELIFT MISSION	AU-18, Space Primer, Space Force Capstone Doctrine Document								
17.1	Space domain overview							A	-	A
17.2	Roles and responsibilities							-	-	A
17.3	Launch vehicle characteristics							-	-	A

17.4	Spacecraft characteristics							-	-	A
17.5	Processing and infrastructure overview							-	-	A
17.6	Launch Enterprise overview							-	-	A
18	MISSILE ELECTRONIC FUNDAMENTALS									
18.1	Electromagnetic effects							A	-	-
18.2	Electrical prefixes							A	-	-
18.3	Direct current theory							B	-	-
18.4	Alternating current theory							B	-	-
18.5	Basic circuit components									
18.5.1	Resistors									
18.5.1.1	Description and operation							B	-	-
18.5.1.2	Troubleshoot							-	-	-
18.5.2	Inductors									
18.5.2.1	Description and operation							B	-	-
18.5.2.2	Troubleshoot							-	-	-
18.5.3	Capacitors									
18.5.3.1	Description and operation							B	-	-
18.5.3.2	Discharging							-	-	-
18.5.3.3	Troubleshoot							-	-	-
18.6	Electromagnetic devices									
18.6.1	Transformers									
18.6.1.1	Description and operation							B	-	-
18.6.1.2	Troubleshoot							-	-	-
18.6.2	Relays and solenoids									
18.6.2.1	Description and operation							B	-	-
18.6.2.2	Troubleshoot							-	-	-
18.6.3	Motor theory									
18.6.3.1	DC							A	-	-
18.6.3.2	AC							A	-	-
18.6.4	Generator theory									
18.6.4.1	DC							A	-	-
18.6.4.2	AC							A	-	-
18.6.5	DELETE							-	-	-
18.6.6	Synchro/Servo description and operation							A	-	-
18.7	Solid state devices									
18.7.1	Diodes									
18.7.1.1	Description and operation							A	-	-
18.7.1.2	Troubleshoot							-	-	-
18.7.2	Special purpose devices description and operation									
18.7.2.1	Integrated circuit (IC)							A	-	-
18.7.2.2	Operational amplifiers							A	-	-
18.7.3	Power supply circuits									
18.7.3.1	Troubleshoot power supplies							-	-	-
18.7.3.2	Oscillator description and operation							-	-	-
19	B-52H aircraft weapon integration system	TOs 1B-52H-2-38GA-1								
19.1	Description							A	A	-
19.2	System Interface Test (SIT) / Missile Interface Test (MIT)							-	A	-
19.3	Flight Data Recorder Fault analysis							-	-	-
20	AGM-86B Missile Systems Theory	TOs 11N-W80.83-2, 21M-AGM86- 2-1, 21M-AGM86-8-1, 21M-AGM86-2-3, 21M-AGM86-8-3,21M-AGM86-31, 21M-AGM86-32								
20.1	Electrical							A	A	-
20.2	Safe, arm and fuse							A	A	-
20.3	Environmental control							A	A	-
20.4	Propulsion							A	A	-
20.5	Flight control							A	A	-
20.6	Navigation							A	A	-
20.7	Interpret missile diagrams (Msl Mx / VACE Core)		5					2b	b	-
21	Missile Fuel Operations	TOs 21M-AGM86-2-1, 21M-AGM86-31, 21M-AGM86-32								-
21.1	Fueling							-	A	-
21.2	Defueling							-	A	-
21.3	Emergency Defueling							-	A	-
21.4	Engine fuel priming							-	A	-
22	Missile general repair	TOs 1-1A-1, 1-1A-14, 21M-AGM86-2-1								
22.1	Structural							-	B	-
22.2	Electrical							-	B	-

22.3	Hardness critical procedures							A	B	-
23	AGM-86B/C Maintenance									
23.1	Replace missile components:	TOs 11N-W80.83-2, 21M-AGM86-2-1, 21M-AGM86-2-3, 21M-AGM86-4-1, 21M-AGM86-4-3, 21M-AGM86-6-1, 21M-AGM86-8-1, 21M-AGM86-8-3								
23.1.1	Common missile radar altimeter							2b	-	-
23.1.2	Inertial navigation element (Msl Mx Core)		5					2b	-	-
23.1.3	Engine (Msl Mx Core)		5					2b	-	-
23.1.4	Rotary switch							2b	-	-
23.1.5	Guided missile flight controller							2b	-	-
23.1.6	Actuator controller							2b	-	-
23.1.7	Warhead arming device							2b	-	-
23.1.8	Flight data transmitter							2b	-	-
23.1.9	Desiccant assembly							2b	-	-
23.1.10	Receive radar antenna							-	-	-
23.1.11	Impact fuse							-	-	-
23.1.12	Electrical resistance temperature transmitter							-	-	-
23.1.13	Pitot static tube							-	-	-
23.1.14	Air cycle machine							-	-	-
23.1.15	Umbilical enclosure assembly							-	-	-
23.1.16	Transmit radar antenna (Msl Mx Core)		5					-	-	-
23.1.17	Heat exchanger							-	-	-
23.1.18	Fuel boost pump (Msl Mx Core)		5					2b	-	-
23.1.19	Pressure sensing transducer							-	-	-
23.1.20	Thermal battery							-	-	-
23.1.21	Engine air inlet							-	-	-
23.1.22	Fuel pump electronic unit							-	-	-
23.1.23	File drawer							-	-	-
23.1.24	Fuel system valves							-	-	-
23.1.25	Electrical Junction Box							-	-	-
23.1.26	Electromechanical linear actuator							-	-	-
23.1.27	Missile cabling							-	-	-
23.1.28	DC Generator							-	-	-
23.1.29	Engine inlet side panel antennas							-	-	-
23.2	Pyrotechnic cartridges	TOs 11A15-1-387, 11N-W80.83-2, 21M- AGM86-2-1, 21M- AGM86-2-3, 21M- AGM86-4-1, 21M- AGM86-4-3, 21M- AGM86-6-1								
23.2.1	Air supply service							-	-	-
23.2.2	Wing							-	-	-
23.2.3	Elevon							-	-	-
23.2.4	Fin							-	-	-
23.2.5	Fuel Supply/Service							-	-	-
23.2.6	Expanding Tube Release System							-	-	-
23.3	Deployment actuators	TOs 11N-W80.83-2, 21M-AGM86-2-1, 21M-AGM86-2-3, 21M-AGM86-23								
23.3.1	Wing							-	-	-
23.3.2	Elevon							-	-	-
23.3.3	Fin							-	-	-
23.4	Control surfaces	TOs 11N-W80.83-2, 21M-AGM86-2-1, 21M-AGM86-2-3								
23.4.1	Wing							-	-	-
23.4.2	Elevon							-	-	-
23.4.3	Fin							-	-	-
23.5	Perform the following	TOs 11N-W80.83-2, 21M-AGM86-2-1, 21M-AGM86-2-3, 21M-AGM86-6-1, 21M-AGM86-8-1, 21M-AGM86-8-3								
23.5.1	Aero surface deployment/stowage							3c	-	-
23.5.2	Missile transfer to handling/maintenance stand (Msl Mx Core)		5					2b	-	-
23.5.3	Forward ECS leakage rate check (Msl Mx Core)		5					2b	-	-
23.5.4	Aft ECS leakage rate check (Msl Mx Core)		5					2b	-	-
23.5.5	Engine leakage rate check (Msl Mx Core)		5					2b	-	-

23.5.6	EED Squib Resistance Test (Msl Mx Core)		5					2b	-	-
23.6	General Repair	TOs 1-1-8, 21M-AGM86-2-1, 21M-AGM86-2-3, 21M-AGM86-23								
23.6.1	Perform corrosion prevention and treatment (Msl Mx / VACE Core)		5					-	-	-
23.6.2	Repair/replace rain erosion material (Msl Mx Core)		5					-	-	-
23.6.3	Desiccant assembly build up							-	-	-
23.6.4	Repair/replace radar absorbent material							-	-	-
23.7	Missile safe status check	TOs 11N-W80.83-2, 21M-AGM86-2-1, 21M-AGM86-2-3								
23.7.1	AGM-86B							3c	-	-
23.7.2	AGM-86C/D							-	-	-
23.8	Fin/elevon rigging inspection	TOs 21M-AGM86-2-1, 21M-AGM86-6-1						2b	-	-
23.9	Perform Fueling Operations	TOs 21M-AGM86-2-1, 21M-AGM86-2-3, 21M-AGM86-6-1, 21M-AGM86-31, 21M-AGM86-32, 33D9-9-2-7-2								
23.9.1	AGM-86B fuel/defuel							-	-	-
23.9.2	AGM-86B emergency defuel (Msl Mx Core)		5					-	-	-
23.9.3	AGM-86B fuel leak repair (Msl Mx Core)		5					-	-	-
23.9.4	AGM-86C fuel/defuel							-	-	-
23.9.5	AGM-86C emergency defuel							-	-	-
23.9.6	AGM-86C fuel leak repair							-	-	-
23.9.7	Engine fuel priming							-	-	-
23.10	Receipt/preparation for shipment	TOs 11N-W80.83-2, 21M-AGM86-2-1, 21M-AGM86-2-3								
23.10.1	Missile preparation for shipment							-	-	-
23.10.2	Missile receipt inspection							-	-	-
23.10.3	Crating missile to missile shipping/storage container (CNU-617/E)							-	-	-
23.10.4	Uncrating missile from missile shipping/storage container (CNU-617/E)							-	-	-
23.11	Cruise Missile Components	TOs 21M-AGM86-2-1, 21M-AGM86-2-3, 21M-AGM86-6-1, 21M-AGM86-8-1, 35E20-3-34-1								
23.11.1	INE prep for ship (Msl Mx / VACE Core)		5					-	-	-
23.11.2	INE receipt (Msl Mx / VACE Core)		5					-	-	-
23.11.3	Engine preparation for shipment (Msl Mx Core)		5					-	-	-
23.11.4	Engine receipt inspection (Msl Mx Core)		5					-	-	-
23.12	Missile checkout	TOs 21M-AGM86-2-1, 21M-AGM86-2-3, 21M-AGM86-8-1, 21M-AGM86-8-3, 33D7-44-233-1, 33D9-19-55-1, 33D9-61-71-1, 33D9-19-54-8-1,								
23.12.1	Description							A	A	-
23.12.2	Perform ALCM Level I (Msl Mx / VACE Core)		5					2b	-	-
23.12.3	Perform CALCM Level I							-	-	-
23.12.4	Perform Level II							-	-	-
23.12.5	Perform flight load							-	-	-
23.12.6	Perform INE autocal/decclassification (Msl Mx / VACE Core)		5					2b	-	-
23.12.7	Perform memory dump/interpret memory dump printout							-	b	-
23.12.8	Isolate malfunctions (Msl Mx / VACE Core)		5					2b	-	-
23.13	Transport missile/handling fixture	TOs 11N-W80.830-2, 35D3-2-27-1						-	-	-
23.13.1	Using MHU-141							-	-	-
23.13.2	Transport missile on 40 ft. trailer using MHU-195/E							-	-	-
23.14	Transfer missile/handling fixture to and from trailer	TOs 11N-W80.83-2, 35D5-3-8-31, 35D5-3-8-41								
23.14.1	Using overhead hoist							-	-	-
23.14.2	Using lift truck							-	-	-
23.14.3	Using forklift							-	-	-

24	Aircraft Rotary Launcher and Pylon Systems	TOs 11G22-5-5-2, 11G22-5-5-8-19, 11N-H5079-2, 11N-L5001-1, 11N-L5001-2, 11N-L5005-8, 11N-T5162-2, 11N-T5162-8, 16W6-33-1, 21M-AGM86-6-2, 35D3-29-3-1								
24.1	Description									
24.1.1	Power							A	-	-
24.1.2	Environmental control							A	-	-
24.1.3	Monitor and control							A	-	-
24.1.4	Mechanical							A	-	-
24.1.5	Launcher/pylon diagrams							A	-	-
24.2	Launcher/pylon checkout description							A	A	-
24.3	Suspended Loading and Checkout Frame									
24.3.1	Inspect							-	-	-
24.3.2	Maintain							-	-	-
24.3.3	Test							-	-	-
24.3.4	Operate							-	-	-
24.4	Common Strategic Rotary Launcher (CSRL)									
24.4.1	Inspect/maintain/operate							-	-	-
24.4.2	Inspect/use Launcher Loader Adapter							-	-	-
24.4.3	Align launcher/frame spline							-	-	-
24.4.4	Mate/de-mate CSRL to/from frame							-	-	-
24.4.5	Manually rotate CSRL							-	-	-
24.4.6	Install/remove ejector(s) to/from missile							-	-	-
24.4.7	Install/remove ejector(s) to/from CSRL							-	-	-
24.4.8	Install/remove cartridges							-	-	-
24.4.9	Perform ejector safe position test							-	-	-
24.4.10	Mate/de-mate CSRL/LLA to/from MHU-196 (Weapons Handling Core)		5					-	-	-
24.4.11	Mate/de-mate missile to/from CSRL							-	-	-
24.4.12	Transport CSRL/LLA (Weapons Handling Core)		5					-	-	-
24.4.13	CSRL Maintenance									
24.4.13.1	Perform Operational Readiness Inspection							-	-	-
24.4.13.3	Perform ECS bypass test							-	-	-
24.4.13.4	Perform ECS leakage test							-	-	-
24.4.13.5	Perform periodic inspection							-	-	-
24.4.13.6	Perform CSRL post download inspection							-	b	-
24.4.14	Replace CSRL components									
24.4.14.1	Decoder-receiver							-	-	-
24.4.14.2	Nuclear Station Logic Unit							-	-	-
24.4.14.3	Relay assembly							-	-	-
24.4.14.4	Cables							-	-	-
24.4.14.5	Pneumatic hoses							-	-	-
24.4.14.6	Launch enable switches							-	-	-
24.4.15	Perform CSRL Electrical Checkout	TOs 11L-12-25-8-1, 11N-L5005-8, 11N-T5128-2, 21M-AGM86-6-2								
24.4.15.1	Empty Test (Msl Mx / VACE Core)		5					-	-	-
24.4.15.2	Loaded Test (Msl Mx / VACE Core)		5					-	-	-
24.4.15.3	Auto-calibration/declassification							-	-	-
24.4.15.4	Flight Load (Msl Mx / VACE Core)		5					-	-	-
24.4.15.5	Perform and interpret Memory Dump							-	b	-
24.4.15.6	Isolate malfunctions (Msl Mx / VACE Core)		5					-	-	-
24.5	SUU-67 Pylons	TOs 16W6-33-8-1, 16W6-33-8-2, 21M-AGM86-6-2, 21M-AGM86-8-2								
24.5.1	Mate/de-mate SUU-67 Pylon to/from Load Frame							-	-	-
24.5.2	Install/remove ejector(s) to/from missile							-	-	-
24.5.3	Remove ejector(s) from SUU-67 pylon							-	-	-
24.5.4	Install/remove cartridges							-	-	-
24.5.5	Mate/de-mate SUU-67 pylon to/from MHU- 196 (Weapons Handling Core)		5					-	-	-
24.5.6	Mate/de-mate missile to/from SUU-67 pylon							-	-	-
24.5.7	Transport Pylon/PLA (Weapons Handling Core)		5					-	-	-
24.5.8	SUU-67 Pylon Maintenance									
24.5.8.1	Perform ECS bypass valve test							-	-	-
24.5.8.2	Perform ECS leakage test							-	-	-
24.5.8.3	Perform periodic inspection							-	-	-
24.5.8.4	Perform Operational Readiness Inspection							-	-	-
24.5.8.5	Perform SUU-67 pylon post download inspection							-	b	-

24.5.9	Replace SUU-67 pylon components									
24.5.9.1	Missile Interface Unit (MIU)							-	-	-
24.5.9.2	Relay assembly							-	-	-
24.5.9.3	Cables							-	-	-
24.5.9.4	Aft Swing Arm							-	-	-
24.5.10	Perform SUU-67 Pylon Electrical Checkout	TOs 16W6-33-8-1, 16W6-33-8-2, 21M-AGM86-6-2, 21M-AGM86-8-21								
24.5.10.1	Empty Test (Msl Mx / VACE Core)		5					-	-	-
24.5.10.2	Loaded Test (Msl Mx / VACE Core)		5					-	-	-
24.5.10.3	Auto-calibration/Declassification							-	-	-
24.5.10.4	Flight Load (Msl Mx / VACE Core)		5					-	-	-
24.5.10.5	Perform and interpret Memory Dump							-	b	-
24.5.10.6	Isolate malfunctions (Msl Mx / VACE Core)		5					-	-	-
24.5.11	Perform Level III checkout	TOs 11G22-5-5-2, 11G22-5-5-8-19, 11N-5162-8								
24.5.11.1	Description							-	A	-
24.5.11.2	Missile Interface Unit							-	-	-
24.5.11.3	Nuclear Station Logic Unit							-	-	-
24.5.12	Isolate/repair malfunctions									
24.5.12.1	Missile Interface Unit							-	-	-
24.5.12.2	Nuclear Station Logic Unit							-	-	-
24.6	B-2 Rotary Launcher Assembly (RLA)	TOs 11N-L5006-2, 11N-L5006-8, 11N-T5169-2, 11N-T5169-8								
24.6.1	Interpret RLA diagrams							-	-	-
24.6.2	Perform RLA checkout									
24.6.2.1	Empty launcher							-	-	-
24.6.2.2	Isolate malfunctions							-	-	-
24.6.3	Perform Level III LRU checkout									
24.6.3.1	Nuclear weapons control monitor checkout (NWCN)							-	-	-
24.6.3.2	Missile relay status assembly checkout (MSRA)							-	-	-
24.6.3.3	Bomb status relay assembly checkout (BSRA)							-	-	-
24.6.3.4	Ejector relay assembly checkout (ERA)							-	-	-
24.6.3.5	Isolate/repair LRU malfunctions							-	-	-
24.6.3.6	Interpret LRU diagrams							-	-	-
24.6.4	RLA Maintenance									
24.6.4.1	Replace NWCN							-	-	-
24.6.4.2	Replace MSRA							-	-	-
24.6.4.3	Replace BSRA							-	-	-
24.6.4.4	Replace ERA							-	-	-
24.6.4.5	Replace cables							-	-	-
24.6.4.6	Replace launch enable switches							-	-	-
24.6.4.7	B-2 perform RLA cable neoprene insulation repair							-	-	-
25	Missile Support Equipment	TOs 11N-H5028-2, 11N-H5054-2, 11N-H5088-2, 11N-H5095-2, 11N-H5099-2, 11N-T5039-2, 11N-T5087-2, 33D3-11-50-2, 33D5-14-20-1, 33D9-2-7-2, 33D9-5-42-1, 35D-1-193, 35D311-45-2, 35D5-4-6-1, 35D9-38-56-1, 35M8-2-7-1, 11N-T5113-2, 33D7-3-189-7, 33D7-16-19-1-1, 33D7-16-19-1-2, 33D7-38-127-1, 33D7-38-127-2, 33D7-44-233-1, 33D7-86-51-1, 33D9-16-9-1, 33D9-19-54-1, 33D9-19-54-8-1, 33D9-19-55-1, 33D9-19-58-11, 33D-19-81-1, 33D 9 -54-75-1, 33D9-54-75-8-1, 33D9-61-71-1, 33D9-142-23-1, 33D9-122-20-1								
25.1	Description							-	A	-
25.2	Inspect/Operate	TOs 11N-H5054-2, 21M-AGM-86-8-1,								

		33D9-5-42-1, 35D3-11-45-2, 35D3-6-33-13 and applicable service manuals								
25.2.1	Nitrogen cart							2b	-	-
25.2.2	Air purge pressurization unit TL-1977 (Msl Mx / VACE Core)		5					-	-	-
25.2.3	Missile nitrogen charging adapter set							2b	-	-
25.2.4	Guided missile hoisting beam (MHU-186/E)							2b	-	-
25.2.5	Guided missile hoisting beam (MHU-186/F)							-	-	-
25.2.6	Maintenance test stand (MSU-179/E)							2b	-	-
25.2.7	Guided missile handling fixture (MHU-159/E)							2b	-	-
25.2.8	Test/maintenance stand rail set (MTU-89/E)							2b	-	-
25.2.9	Engine handling truck (ETU-102)							2b	-	-
25.2.10	Engine leak detector MU-720/E							2b	-	-
25.2.11	Beam sling (MHU-166/E)							2b	-	-
25.2.12	Electric squib test set AN-GSM-267							2b	-	-
25.2.13	Access panel storage rack (MTU-72)							2b	-	-
25.2.14	Missile shipping and storage container (CNU-617/E) (Msl Mx Core)		5					-	-	-
25.2.15	Swivel and link assembly (MHU-162/E)							-	-	-
25.2.16	Hot air gun (CLU-61/E)							2b	-	-
25.2.17	Elevon lock/unlock tool (TLU-450/E)							3c	-	-
25.2.18	Elevon stowing tool (TLU-456A/E)							3c	-	-
25.2.19	Actuator lock release tool (TLU-452/E)							3c	-	-
25.2.20	Inlet latch release tool (TLU-459/E) (Msl Mx Core)		5					-	-	-
25.2.21	Missile container sling (HLU-290/E)							-	-	-
25.3	Repair	TOs 11N-H5054-2, 21M-AGM-86-8-1, 33D9-5-42-1, 35D3-11-45-2, 35D3-6-33-13 and applicable service manuals								
25.3.1	Nitrogen cart							-	-	-
25.3.2	Air purge pressurization unit TL-1977							-	-	-
25.3.3	Missile test stand (MSU-179/E)							-	-	-
25.3.4	Guided missile handling fixture (MHU-159/E)							-	-	-
25.3.5	Missile nitrogen charging adapter set							-	-	-
25.3.6	Test/maintenance stand rail set (MTU-89/E)							-	-	-
25.3.7	Engine leak detector (MU-720/E)							-	-	-
25.3.8	Electric squib test set AN-GSM-267							-	-	-
25.3.9	Missile shipping and storage container (CNU-617/E)							-	-	-
25.3.10	Guided missile hoisting beam (MHU-186/E)							-	-	-
25.3.11	Guided missile hoisting beam (MHU-186/F)							-	-	-
25.3.12	Hoisting beam (MHU-166/E)							-	-	-
25.3.13	Engine handling truck (ETU-102)							-	-	-
25.3.14	Access panel storage rack							-	-	-
25.3.15	Swivel and link assembly (MHU-162/E)							-	-	-
25.3.16	Hot air gun (CLU-61/E)							-	-	-
25.3.17	Actuator lock release tool (TLU-452/E)							-	-	-
25.3.18	Missile container sling (HLU-290/E)							-	-	-
25.4.	Fuel/defuel set A/F32R-5	TO 33D9-2-7-2								
25.4.1	Description of the following systems									
25.4.1.1	Shop air							-	B	-
25.4.1.2	Nitrogen							-	B	-
25.4.1.3	Fuel piping							-	B	-
25.4.1.4	Vent							-	B	-
25.4.1.5	Vacuum							-	B	-
25.5	Aerospace Ground and Handling Equipment	TOs 11N-H-61A AND B, 11N- HRV50-2, 35E15-10-1, 35C2-3-469- 11, 11N-H12-2, 33A2-2-23-31								
25.5.1	Perform pre-operational inspection and operate hydraulic systems equipment							-	-	-
25.5.2	Perform pre-operational inspection and operate A/M32A-86D diesel generator set (HOBART)							-	-	-
25.5.3	Perform pre-operational inspection and operate munitions lift truck (jammer)							-	-	-
25.5.4	Perform pre-operational inspection and operate NF2/ NF2D portable light set							-	-	-
25.5.5	Perform pre-operational inspection and operate 400 Hz power converter							-	-	-
25.5.6	Operate portable heaters	TO 35E7-2-11-21, Applicable						-	-	-

		Manufacturers Operation and Service Instructions								
26	Cruise Missile Automated Test Equipment									
26.1	Electronic System Test Set (ESTS) AN/GSM-263/A/G	TOs 33D9-61-71-1, 33D9-61-71-4								
26.1.1	Description							A	A	-
26.1.2	Purpose of the ESTS major components							A	A	-
26.1.3	Operate							2b	-	-
26.1.4	Perform ESTS tests									
26.1.4.1	Confidence test	TOs 33D9-61-71-7-1						2b	-	-
26.1.4.2	Auto calibration							-	-	-
26.1.4.3	Operational Assurance Test							-	-	-
26.1.4.4	Calibration/Certification							-	-	-
26.1.4.5	Facility software load	TO 33D9-61-71-7-1						-	-	-
26.1.4.6	Adjust Computer/controller power supplies							-	-	-
26.1.5	Perform ESTS troubleshooting									
26.1.5.1	Interpret schematics/ diagrams							-	-	-
26.1.5.2	Isolate malfunctions							-	-	-
26.1.6	Replace ESTS components									
26.1.6.1	Computer subcomponents							-	-	-
26.1.6.2	Disc drive subcomponents							-	-	-
26.1.6.3	Circuit card assemblies							-	-	-
26.1.6.4	Power supplies							-	-	-
26.1.6.5	Cable assemblies							-	-	-
26.1.6.6	Drawer assemblies							-	-	-
26.1.6.7	Drawer assembly subcomponents							-	-	-
26.1.6.8	Patch panel components (1A16)							-	-	-
26.1.6.9	Patch panel receiver contacts (1A16)							-	-	-
26.1.6.10	Perform serviceability inspection							-	-	-
26.2	Electronic System Test Set (ESTS) AN/GSM-263/C	TOs 33D9-61-71-1, 33D9-61-71-4; 33D9-61-71-21; 33D9-61-71-28								
26.2.1	Operate							-	-	-
26.2.2	Perform ESTS tests									
26.2.2.1	Confidence test	TO 33D9-61-71-7-1						-	-	-
26.2.2.2	Auto calibration							-	-	-
26.2.2.3	Operational Assurance Test							-	-	-
26.2.2.4	Calibration/Certification							-	-	-
26.2.2.5	Facility software load	TO 33D9-61-71-7-1						-	-	-
26.2.2.6	Adjust computer/controller power supplies							-	-	-
26.2.3	Perform troubleshooting									
26.2.3.1	Interpret schematics/ diagrams							-	-	-
26.2.3.2	Isolate malfunctions							-	-	-
26.2.4	Replace components									
26.2.4.1	Computer subcomponents							-	-	-
26.2.4.2	Hard drive subcomponents							-	-	-
26.2.4.3	Tape Drive subcomponents							-	-	-
26.2.4.4	Circuit card assemblies							-	-	-
26.2.4.5	Power supplies							-	-	-
26.2.4.6	Cable assemblies							-	-	-
26.2.4.7	Drawer assemblies							-	-	-
26.2.4.8	Drawer assembly subcomponents							-	-	-
26.2.4.9	Patch board components							-	-	-
26.2.4.10	Patch board receiver contacts							-	-	-
26.2.4.11	Perform serviceability inspection							-	-	-
26.3	Test Adapter Groups/Interconnecting Groups	TOs 11N-T5113-2, 33D9-16-9-1, 33D9-19-55-1, 33D9-19-58-11, 11N- T5172-1, 33D9-19-54-1, 33D9-19-54-8-1, 35D5-4-6-1								
26.3.1	Operate/use							-	-	-
26.3.2	Patchboard repair							-	-	-
26.3.3	Cable maintenance/replacement							-	-	-
26.3.4	Antenna hood repair/certification							-	-	-
26.3.5	Temp probe certification							-	-	-
26.4	Signal Data Converter CV-364/GSM-263 CV-364/GSM-263	TO 33D3-19-54-8-1								
26.4.1	Description							A	A	-
26.4.2	Perform Inspection/self-test							-	-	-
26.4.3	Perform calibration							-	-	-
26.5	Genie Portable Lift Truck	TO 35D5-4-6-1								
26.5.1	Inspect							-	-	-
26.5.2	Maintain							-	-	-

26.6	Air Data Test Set (ADTS) AN/GSM-291	TO 33D9-61-71-1								
26.6.1	Description							A	A	-
26.6.2	Interpret ADTS schematics/diagrams							-	-	-
26.6.3	Perform ADTS preventive maintenance/servicing							-	-	-
26.6.4	Operate							2b	-	-
26.6.5	Perform ADTS tests	TOs 33D7-16-19-1-1, 33D7-16-19-1-2								
26.6.5.1	Self-test							-	-	-
26.6.5.2	Air dryer leak test							-	-	-
26.6.5.3	Air data test controller calibration							-	-	-
26.6.5.4	Isolate ADTS faults									
26.6.6	Repair ADTS components									
26.6.6.1	Air data test controller							-	-	-
26.6.6.2	Rack subcomponents							-	-	-
26.6.6.3	Air dryer assembly							-	-	-
26.6.6.4	Air dryer assembly subcomponents							-	-	-
26.6.6.5	Vacuum pump							-	-	-
26.6.6.6	Vacuum pump components							-	-	-
26.6.6.7	Blower							-	-	-
26.7	Missile Radar Altimeter Test Assembly (MRATA)	TOs 33D7-44-233-1, 33D7-44-233-4								
26.7.1	Description							A	A	-
26.7.2	Operate							2b	-	-
26.7.3	Perform MRATA tests									
26.7.3.1	Maintenance self-test							-	-	-
26.7.3.2	ESTS-controlled self-test							-	-	-
26.7.3.3	Calibration/alignment							-	-	-
26.7.4	MRATA fault isolation									
26.7.4.1	Interpret MRATA schematics/diagrams							-	-	-
26.7.4.2	Interpret RF path status via LED indicators							-	-	-
26.7.4.3	Interpret, develop, and use RF path programming for troubleshooting							-	-	-
26.7.5	Repair/replace components									
26.7.5.1	Drawer assemblies							-	-	-
26.7.5.2	Power supplies							-	-	-
26.7.5.3	Cable assemblies							-	-	-
26.7.5.4	Circuit card assemblies							-	-	-
26.7.5.5	Active RF components/modules							-	-	-
26.7.5.6	Couplers and fixed attenuators							-	-	-
26.7.5.7	Semi-rigid coaxial assemblies							-	-	-
26.7.5.8	Coaxial switches							-	-	-
26.7.5.9	Programmable attenuators							-	-	-
26.7.5.10	Self-test receiver							-	-	-
26.7.5.11	Delay assemblies							-	-	-
26.7.5.12	Socketed integrated circuits (ICs)							-	-	-
26.7.5.13	Perform serviceability inspection							-	-	-
26.8	Electronic Components Cooling Equipment (MU-690/E)	TO 33D9-122-20-2								
26.8.1	Description							A	A	-
26.8.2	Perform operational test							-	-	-
26.8.3	Operate (Msl Mx / VACE Core)		5					2b	-	-
26.8.4	Perform preventive maintenance							-	-	-
26.8.5	Interpret schematics/ diagrams							-	-	-
26.8.6	Isolate malfunctions							-	-	-
26.8.7	Calibrate									
26.8.7.1	Flowmeters							-	-	-
26.8.7.2	Temperature and pressure switches							-	-	-
26.8.7.3	Perform facility input air test							-	-	-
26.8.7.4	Replace/repair subcomponents							-	-	-
26.8.7.5	Perform serviceability inspection							-	-	-
26.8.7.6	Certify temperature gauge							-	-	-
26.9	Operate Cruise Missile Automated Test Calibration Equipment	TO 31-1-141-10 (Sections I, III, VIII, I), End Item User Manuals								
26.9.1	Signal/pulse generating equipment							-	-	-
26.9.2	Frequency/time measuring equipment							-	-	-
26.9.3	Microwave calibration equipment							-	-	-
26.10	Portable Automated Test Equipment Calibrator (PATEC)	TO 33D9-61-71-7-1, End Item User's Manual								
26.10.1	Operate PATEC-ESTS							-	-	-
26.10.2	Operate PATEC-ADTS							-	-	-
27	Weapons Handling, Storage, and Transportation	AFI 91-115, AFMAN 21-204, TO 11N- H5083-1, 11N-H5083- 1CL-1, 11N- W80.83- 2CL-2, 35D3-11-36-								

		6WC-2, 11N-45-51C, 11N-H5066-2, 35MA1-1-101, 11N-H5084-2								
27.1	Description							-	-	-
27.2	Inspect and use pintle hooks/lunettes/drop pin assembly on tow vehicles/trailers	TO 36-1-121						-	-	-
28	Logistic Movements	DoDM 5210.41; AFMAN 21-203, 21-204, 21-205, AFI 91-115; AFMAN 31-108, 91-201; AFJI 11-204; TOs 11N-20-5, 11N-20-7, 11N-20-11, 11N-100-2, 11N-45-51 series, 13C2-1-1								
28.1	Describe policy/unit responsibilities for transporting, shipping and receiving nuclear cargo							A	B	-
28.2	Use Nuclear Ordnance Shipping Schedule (NOSS)							-	-	-
28.3	Weapons movement									
28.3.1	Inner area movement							-	-	-
28.3.2	Outer area movement							-	-	-
28.4	Special Assignment Airlift Missions(SAAM)/DOE movement coordination									
28.4	Load/offload truck/tractor and trailer									
28.4.1	Placing containers							-	-	-
28.4.2	Unit-per-load restrictions							-	-	-
28.4.3	Securing containers							-	-	-
28.4.4	Forklift use							-	-	-
28.4.5	Upload/download/handling H1388 shipping and storage containers to/from trailers							-	-	-
28.5	SGT shipment	AFMAN 91-201; TO 11N-20-5, 11N-20-7, 11N-45-51 series								
28.5.1	General							-	-	-
28.5.2	SGT preparation							-	-	-
28.5.3	Oxygen monitoring							-	-	-
28.5.4	Electrical requirements							-	-	-
28.5.5	SGT loading							-	-	-
28.5.6	Inspect/install/remove track studs							-	-	-
28.5.7	Inspect/install/remove tiedown adapters and pear-shaped rings							-	-	-
28.5.8	Inspect/install/remove H1694							-	-	-
28.5.9	Use drum tiedown adapters							-	-	-
28.5.10	Load generic boxes							-	-	-
28.6	Upload/download/handling shipping and storage containers and bomb hand trucks to/from SGT									
28.6.1	H1125A/H1671 bomb cradle/H1242 caster set							-	-	-
28.6.2	H1224A shipping and storage container							-	-	-
28.6.3	H1333A/1333B shipping and storage container							-	-	-
28.6.4	H1347/H1347A bomb hand truck/H795 caster set							-	-	-
28.6.5	H1388 shipping and storage container							-	-	-
28.6.6	H1408 shipping and storage container							-	-	-
28.6.7	H1473 shipping and storage container							-	-	-
28.6.8	LLC containers/kits							-	-	-
28.6.9	Group kits							-	-	-
29	Ground Support Equipment									
29.1	Pylon Loader Adapter (PLA)	TO 11N-H5066-2								
29.1.1	Inspect (Weapons Handling Core)		5					-	-	-
29.1.2	Maintain (Weapons Handling Core)		5					-	-	-
29.1.3	Repair (Weapons Handling Core)		5					-	-	-
29.1.4	Prepare for shipment/receiving							-	-	-
29.2	Launcher Loader Adapter (LLA)	TO 11N-H5084-2								
29.2.1	Inspect (Weapons Handling Core)		5					-	-	-
29.2.2	Maintain (Weapons Handling Core)		5					-	-	-
29.2.3	Repair (Weapons Handling Core)		5					-	-	-
29.2.4	Prepare for shipment/receiving							-	-	-
29.3	Inspect/Use									
29.3.1	B-52 nitrogen charging adapter set							-	-	-
29.3.2	Pallet jacks							-	-	-
29.3.3	J-bars							-	-	-
29.3.4	Pallet stacker							-	-	-
29.3.5	MB-1 binder							-	-	-
29.3.6	CGU-1/B tie down							-	-	-

29.3.7	25/40 foot trailers	AFMAN 24-306; TOs 11N-45-51 Series, 11N-5202-2, 13C2-1-1 and Work Cards						-	-	-
29.3.8	MAU-12 D/A cartridge test adapter							-	-	-
29.3.9	Guided missile warhead handling unit (MHU-161/E)							-	-	-
29.3.10	H1387 strongback							-	-	-
29.3.11	Missile positioning and handling unit adapter (ADU-468/E)							-	-	-
29.3.12	Load transfer assembly (GSU-283/E)							-	-	-
29.3.13	Warhead lift truck (MHU-170)							-	-	-
29.3.14	Rail type maintenance stand (ETU-76/E)									
29.4	MHU-196 trailer	TO 35D3-29-3-1								
29.4.1	Inspect/operate (Weapons Handling Core)		5					-	-	-
29.4.2	Emergency shutdown (Weapons Handling Core)		5					-	-	-
29.4.3	Towing procedures (Weapons Handling Core)		5					-	-	-
29.5	Transfer/transport weapons									
29.5.1	Bolstered							-	-	-
29.5.2	Unbolstered							-	-	-
29.5.3	Container							-	-	-
29.6	Transfer missile using lift trucks	TOs 11N-W80.83-2, 35D5-3-8-31, 35D5-3-8-41						-	-	-
30	Weapons Storage Area (WSA) Facilities/Support Systems	AFMAN 91-201, 32-1065, 91-203, AFI 23-201, DAFI 31-101, DoD 5210.41-M								
30.1	IMF systems									
30.1.1	Fire suppression							A	-	-
30.1.2	Static ground/lightning protection system							A	A	-
30.1.3	Hydraulic/electrical/pneumatic systems							-	A	-
30.1.4	Cruise missile bulk fuel storage system							-	A	-
30.1.5	Security systems (sensors/alarms)							A	A	-
30.1.6	Weapons physical security/limits	DOD 5210.41-M, DAFI 31-101, TOs 11N-20-1, 11N-20-7						A	A	-
30.2	Operate the following:									
30.2.1	Overhead hoist/monorail system							2b	-	-
30.2.2	Hydraulic/electrical/pneumatic systems							-	-	-
30.2.3	Cruise missile bulk fuel storage system							-	-	-
30.3	Perform the following									
30.3.1	IMF/storage structure open/close procedures		5					-	b	-
30.3.2	Munitions close-in sentry duties							-	-	-
30.3.3	Sole Vouching Authority duties							-	-	-
30.3.4	Key and lock procedures							-	-	-
31	Administrative Support Functions									
31.1	Perform marking, storage, handling, and destruction of classified material	AGM-86B/C SCG, AFI 16-404	7					-	-	-
31.2	Compile, update, and distribute reports	AFMAN 21-202, local operating instructions								
31.2.1	Weekly status report							-	-	-
31.2.2	Monthly testing summary							-	-	-
31.2.3	Forecast cruise missile maintenance							-	-	-
31.2.4	Update status in SharePoint							-	-	-
31.3	Compile, review, analyze, and maintain missile systems information for historical documentation	AFMAN 21-202, AFI 21-103, TO 00-5 series, 00-20 series								
31.3.1	Historical documentation							-	-	-
31.3.2	ESTS printouts							-	-	-
31.4	Perform trend analysis on:	AFMAN 21-202								
31.4.1	ELT/EPT							-	-	-
31.4.2	LLT/LPT							-	-	-
31.4.3	LVL I, LVL II, LVL III							-	-	-
31.4.4	SIT/MIT							-	-	-
32	Munitions Control Center	AFMAN 21-201, 21-204, DAFI 31-101, DOD 5210.41M, T.O. 00-20 series, applicable unit OPLANS and operating instructions								
32.1	Munitions Control fundamentals							-	A	-
32.2	Initiate recall and emergency checklists							-	-	-
32.3	Use radio, secure communications, and direct telephone lines							-	-	-

32.4	Coordinate munitions requirements							-	-	-
32.5	Advise agencies of maintenance activities							-	-	-
32.6	Coordinate storage structure and facility entry/exit with security forces							-	-	-
32.7	Advise security forces of movement or re-warehousing							-	-	-
32.8	Advise fire department of fire symbol and line number change							-	-	-
32.9	Coordinate work request with appropriate agencies							-	-	-
32.10	Create/issue unscheduled work orders							-	-	-
32.11	Coordinate emergency response activities							-	-	-
32.12	Utilize munitions command/control information system									
32.12.1	Track vehicle and equipment status							-	-	-
32.12.2	Update weapon storage locations							-	-	-
32.12.3	Coordinate weapon/munitions movements							-	-	-
32.12.4	Develop weapons breakout flow plan for aircraft generation							-	-	-
32.12.5	Perform Munitions Control relocation actions							-	-	-
32.12.6	Review flying schedule for munitions requirements							-	-	-
32.12.7	Coordinate cannibalization actions							-	-	-
33	Weapons Support									
33.1	Perform CTK custodian duties	DAFI 21-101						-	-	-
33.2	Perform TMDE custodian duties	TOs 00-20-14, 32B14-3-1-101, 33K-1- 100-1, 33K-1-100-2, 51-1-01						-	-	-
33.3	Perform HAZWASTE duties							-	-	-
33.4	T.O. Library	TO 00-5-1								
33.4.1	Maintain and generate products from ETIMS data base							-	-	-
33.4.2	Process and control technical order, and CPIN distribution							-	-	-
33.4.3	Maintain initial distribution requirements							-	-	-
33.4.4	Perform routine, annual, and other required checks							-	-	-
33.4.5	Post T.O.	TO 00-5-1								
33.4.5.1	Revisions							-	-	-
33.4.5.2	Changes							-	-	-
33.4.6	Supplements	TO 00-5-1								
33.4.6.1	Safety							-	-	-
33.4.6.2	Operational							-	-	-
33.4.6.3	Routine							-	-	-
33.4.6.4	TOPS							-	-	-
33.4.7	Maintain other support documents	TO 00-5-1								
33.4.7.1	CPIN							-	-	-