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SECRETARY OF THE AIR FORCE**

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***Space, Missiles, Command and Control***

**MANAGEMENT OF GROUND RADAR  
AND AIRFIELD SYSTEMS**

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This publication implements AFD 13-2, *Air Traffic Control, Airspace, Airfield, and Range Management*. It applies to all Air Force, Air National Guard (ANG) and Air Force Reserve Command (AFRC) 1C8 Ground Radar/Airfield Systems career fields (to include DoD and contract civilians). It directs the management of US Air Force (USAF), Air National Guard (ANG) and Air Force Reserve Command (AFRC) airfield operations personnel (to include DoD and contract civilians) and describes career development. It specifies minimum administrative, procedural and operational performance and management standards for services provided by all USAF Airfield Operations (AO) facilities, including contracted AO locations where the USAF has functional oversight responsibility. This Air Force Instruction (AFI) may be supplemented at any level, however all supplements to include interim changes to previously approved supplements must be routed to Headquarters (HQ) Air Force Flight Standards Agency, Director of Air Traffic Control and Landing Systems (ATCALS) Maintenance and Policy (HQ AFFSA/XM) for coordination prior to certification and approval. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, Table 1.1 for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through Major Command (MAJCOM) functional chain of command. Ensure that all records created as a result of processes prescribed in this publication

are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS). The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force. See Attachment 1 for a glossary of references and supporting information used in this instruction.

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## Chapter 1

### OVERVIEW

**1.1. Purpose.** The purpose of this instruction is to establish procedures for the maintenance management of ground radar and airfield systems equipment.

**1.2. Scope.** This instruction applies to the 1C8 Ground Radar/Airfield Systems career fields working on ground radar/airfield systems equipment unless exempted by the career field functional manager. It also applies to any organization with production responsibilities for ground radar and airfield systems/equipment and processes unless exempted by the appropriate AF-level functional manager. This includes all Air Force (AF) military and civilian personnel, members of the Air Force Reserve Command (AFRC), Air National Guard (ANG), and AF contractors. The procedures and practices listed in this instruction are established by Department of Defense (DoD), Air Force Instructions, Air Force Occupational Safety and Health (AFOSH), and other guidance. **Note:** Units using AF contractors will follow guidance provided in paragraph 1.6, Contract Maintenance.

1.2.1. Maintenance Objective. The primary objective of maintenance is to ensure continued operational availability of systems and equipment used to support the Air Force mission. A key factor in achieving this objective is maintenance discipline. Maintenance discipline involves integrity in all aspects of the maintenance process. It is the responsibility of all personnel to comply with all written guidance to ensure required repairs, inspections, and documentation are completed in a safe, timely and effective manner. Managers must establish a climate that promotes maintenance discipline.

1.2.2. Depth of Maintenance. Technology is constantly changing and traditional maintenance concepts must be adapted to the new environment. The depth and breadth of these concepts will vary considerably across the maintenance complex. Normally, older systems will be more maintenance intensive, than newer equipment sustained under the Line Replaceable Unit (LRU) replacement concept.

1.2.3. Readiness Expectations. Readiness requirements may cause deferment of essential maintenance or training. Failure to recognize and support valid requirements might cause maintenance backlogs or mission failure. Managers must ensure every action is taken to make systems available for required maintenance actions and ensure maintenance is completed to meet mission requirements.

### 1.3. Waivers and Recommended Changes.

#### 1.3.1. Waiver Authority.

1.3.1.1. Waiver authority for Tier 0: Non-AF authority (e.g. Federal Aviation Administration).

1.3.1.2. Waiver authority for Tier 1: MAJCOM/CC (delegable no lower than the MAJCOM/A3, with the concurrence of HAF/A3).

1.3.1.3. Waiver authority for Tier 2: MAJCOM/CC (delegable no lower than MAJCOM/A3).

1.3.1.4. Waiver authority for Tier 3: Wing/CC (delegable no lower than Group/CC or equivalent).

1.3.1.5. Waiver authority for Non-tiered compliance items targeted for functions above the wing or equivalent is HQ AFFSA/XM.

#### 1.3.2. Waiver Process.

1.3.2.1. Process waiver requests IAW AFI 33-360, paragraph 1.9. (T-1) Units may use the AF Form 679, *Air Force Publication Compliance Item Waiver Request*, to process waivers to this instruction.

1.3.2.2. If deemed necessary, submit additional data such as a Letters of Procedure (LOP) to substantiate the waiver request.

1.3.2.3. Upload approved waivers into Management Internal Control Toolset (MICT) for inspection activity review. (T-1)

1.3.2.4. Forward a copy of the approved waiver to AFFSA/XM ([hqaffsa.xm@us.af.mil](mailto:hqaffsa.xm@us.af.mil)) for publication OPR's situational awareness, consolidation/filing and to identify/track possible trends.

1.3.2.5. Tier 0 waiver. Not applicable.

1.3.2.6. Tier 1 waiver. MAJCOMs will forward waiver request to HQ AFFSA/XM prior to obtaining MAJCOM/CC (delegable no lower than MAJCOM/A3) approval. HQ AFFSA/XM will request HAF/A3 (Publication Approving Official) concurrence and forward results back to the MAJCOM OPRs for waiver authority staffing and approval. (T-1)

1.3.2.7. Tier 2 waiver. Staff waiver requests in accordance with MAJCOM guidance. (T-2)

1.3.2.8. Tier 3 waiver. Staff waiver requests in accordance with Wing guidance. (T-3)

#### 1.4. Terms and Definitions.

1.4.1. All terms and definitions applicable to this AFI are located in Attachment 1, *GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*.

**1.5. Responsibilities.** The organization commander or equivalent will assign responsibility for procedures outlined in this instruction. Only qualified personnel will accomplish inspection, preventive maintenance, servicing, opening, repair or replacement of ground radar and airfield systems. (T-1)

**1.6. Contract Maintenance.** This section identifies the basic responsibilities for managing Most Efficient Organization (MEO) or contract maintenance.

1.6.1. Compliance. Laws, executive orders, regulation, instructions and technical orders will be executed by the government unless waived by appropriate authority. When the government solicits services via contract, some requirements may be excluded from the Performance-Based Work Statement (PWS) or Statement of Work (SOW) due to cost. Requirements excluded from the PWS or SOW will be performed by the government.



1.6.1.1. When maintenance management responsibilities are required of a contractor, they must be specifically identified in the PWS. Managers will base PWS requirements on existing maintenance policy. The intent and philosophy of organic maintenance processes must be carefully considered and included when appropriate. Contract maintenance is not automatically exempt from standard logistics processes. For example, the requirement to document maintenance in an AF-approved Automated Information System (AIS) must be included in the PWS. As a minimum, PWSs shall have: (T-1)

1.6.1.1.1. Contractor Maintenance Data Collection. Enter systems and component failure according to T.O. 00202, *Maintenance Data Documentation*; material consumption according to T.O. 00-20-3, *Maintenance Processing of Repairable Property and Repair Cycle Asset Control System*, and TCTO reporting requirements according to T.O. 00-5-15, *Air Force Time Compliance Technical Order Process*, in PWSs. Cite appropriate data items and include collecting TCTO and repairable processing data in contracts. Contract instructions call out the time and place to turn in data. Specify if the contractor provides complete source documents and forms or automated products.

1.6.1.1.2. System restoral priorities.

1.6.1.1.3. Procedures to maintain configuration control.

1.6.1.1.4. Procedures to document historical records if AF automated information system is unavailable.

1.6.2. Contract Surveillance Programs/Contracting Office Representative (COR). Accomplish contract maintenance surveillance program duties according to procurement guidelines and command directives. When requested by the procurement office, the commander/superintendent provides a qualified COR for surveillance purposes. Surveillance programs may vary depending on the scope of the contract and directions of the procurement office. It is vital military personnel do not change or task contractors thus changing the contract.

1.6.3. Contract Rules and Assistance. Only contracting officers are authorized to enter into or change a contract, PWS or SOW. Air Force personnel do not give any directions or instructions to contractors or take any other action that could form the basis for a contractual claim. Direct problems with contract performance, contract changes or interpretation to the responsible contracting officer, administrative contracting officer or COR for resolution. Contractual assistance may be used to satisfy a wide variety of requirements ranging from minor one-time repairs to operation and maintenance of complete systems. For more information see AFI 63-138, *Acquisition of Services*, **Chapter 6** and AFPD 64-1, *The Contracting System*, paragraph 7.2.

1.6.4. Impact on Wartime Capabilities. Consider contract maintenance on a planned and selective basis; however, wartime capability may not be compromised by excessive use of this resource. Check with appropriate MAJCOM managers to ensure local contract efforts do not erode command wartime capabilities.

## Chapter 2

### RESPONSIBILITIES

**2.1. HQ A3.** AF/A3XJ will perform AF-level career field management functions for Ground Radar and Airfield Systems.

**2.2. HQ Air Force Flight Standards Agency (AFFSA).** HQ AFFSA/XM is designated as the USAF executive agent to develop policy and guidance in specific 1C8 maintenance management and related areas. HQ AFFSA/XM will:

- 2.2.1. Develop ATCALs maintenance management policy and guidance for HAF/A3.
- 2.2.2. Review waiver requests to this instruction and recommend appropriate actions.
- 2.2.3. Assess ATCALs equipment as directed or requested.
- 2.2.4. Review ATCALs MICT checklists.
- 2.2.5. Manage ATCALs Air Force Maintenance Special Instructions (AFMSI).
- 2.2.6. Represent the ATCALs maintenance community as a member of the following:
  - 2.2.6.1. Air Force Centralized Technical Order Management (CTOM) Group.
  - 2.2.6.2. Air Force Metrology and Calibration (AFMETCAL) Advisory Group.
  - 2.2.6.3. Maintenance Information Systems Integrated Process Teams (IPT).
  - 2.2.6.4. Air Force Modification Policy Work Group (AFMPWG).
  - 2.2.6.5. Integrated Maintenance Data System/Reliability and Maintainability Information System (IMDS/REMIS) Functional Review Board.
  - 2.2.6.6. IMDS/REMIS Configuration Control Board.
  - 2.2.6.7. Maintenance and Training Advisory Group (MATAG).
  - 2.2.6.8. Maintenance Training Technology Working Group (MTTWG).
  - 2.2.6.9. Functional Area Product Improvement Working Groups (PIWG).
  - 2.2.6.10. Maintenance Information Technology Working Group (MITWG).
  - 2.2.6.11. Allowance Source Code Review (ASC).
  - 2.2.6.12. Functional Area Weapon System Reviews (WSR).
  - 2.2.6.13. Functional Area Lead Command Advisory Group (LCAG).
  - 2.2.6.14. ATCALs System Safety Working Group (SSWG).
- 2.2.7. Provide guidance and support for ATCALs maintenance systems analysis, automated maintenance information systems, and reliability, availability, and maintainability programs.

**2.3. MAJCOM HQ.** MAJCOM HQ will implement the following guidance for their activities that perform 1C8 maintenance functions. **Note:** For this instruction, the term MAJCOM also applies to Field Operating Agencies (FOA) and Direct Reporting Units (DRU). Regardless of size and type of organizational structure, the functions and duties outlined in this instruction are

the minimum mandatory requirements necessary to ensure effective, quality maintenance is performed.

2.3.1. Forward validated waiver requests to this instruction to HQ AFFSA/XMS ([HQAFFSA.XMS@us.af.mil](mailto:HQAFFSA.XMS@us.af.mil)).

2.3.2. Concentrate management efforts on the unique needs within the command.

2.3.3. Develop the minimum procedures necessary to accomplish the mission without generating unnecessary workloads. Managers at all levels refine and improve these processes to minimize administration, documentation and reporting workload.

2.3.4. Serve as command focal point to implement Air Force guidance and directives concerning systems modifications, programmed and Mobile Depot Maintenance (MDM), TO improvements, Source, Maintenance, and Recoverability (SMR) code change requests, deficiency reports, product improvement reports, MICT checklists, AFMSIs, corrosion control, maintenance management directives, and T.O. 00-series publications.

2.3.5. Ensure life cycle logistics support for MAJCOM-acquired Commercial Off-The-Shelf (COTS) systems and equipment according to **Chapter 11** of this instruction.

2.3.6. Manage the 1C8 portion of the Engineering and Technical Services (ETS) program in conjunction with the MAJCOM OPR.

2.3.7. Perform MAJCOM-level Ground Radar and Airfield Systems career functional-level management.

**2.4. Unit Commander.** The unit commander will: (T-1) **Note:** The unit commander may delegate responsibilities to the flight commander.

2.4.1. Enforce sound maintenance, supply discipline, and financial management practices.

2.4.2. Identify structures that must be climbed for mission accomplishment and personnel required to maintain climbing proficiency IAW **Chapter 9**. The unit commander will also ensure sufficient unit funding exists to support climbing training and certification, if that training cannot be accomplished within the unit.

2.4.3. Provide status on training, manning, time compliance technical orders, upcoming modifications, installs, or other projects.

**2.5. Superintendent/Chief of Maintenance (where applicable according to local OSS organizational structure).** Superintendents will: (T-3) **Note:** Chief of Maintenance only applies to the Air Control Squadrons and NGB. If there is no superintendent, the maintenance work center supervisor will accomplish these duties.

2.5.1. Advise and assist unit leaders and technicians in managing and administering maintenance programs.

2.5.2. Make frequent visits to all maintenance functions to ensure they are familiar with all maintenance activities.

2.5.3. Control personnel assignment within the maintenance activity and advise leaders on manning levels.

**2.6. Maintenance Work Center Supervisors/Branch Chief.** Work center supervisors will: (T-1) **Note:** This section addresses the duties and responsibilities of individuals assigned to the position presiding over Airfield Systems or Radar maintenance work center(s). Duty titles will vary based on local organizational structure.

2.6.1. Ensure personnel have a thorough knowledge of their duties and comply with applicable directives and TOs.

2.6.2. Ensure compliance with maintenance schedules.

2.6.3. Emphasize quality and safety.

2.6.4. Ensure upgrade training and maintenance On the Job Training (OJT) training programs are established and effectively managed.

2.6.5. Ensure observed or reported training deficiencies are corrected.

2.6.6. Ensure maintenance data and analysis products are used to solve problems and improve the maintenance effort.

2.6.7. Inform the commander of problems that are beyond the capability to solve at the branch level.

2.6.8. Submit requests for maintenance assistance (when required) in accordance with T.O. 00-25-108-WA-1, *Communications - Electronics (C-E) Depot Support*, to the appropriate division in their MAJCOM/A3.

2.6.9. Review those portions of Operations Plan (OPLAN), Programming Plan (PPLAN) and Program Action Directives (PAD) that task the work center.

2.6.9.1. Ensure the work center has the capability to execute the required tasks.

2.6.9.2. Identify any training, equipment, supply support, vehicle support, additional manpower or other key elements required to execute the tasking.

## Chapter 3

### PRODUCTION WORK CENTER

**3.1. Introduction** . This chapter addresses production work center guidelines, planning and scheduling production, ordering and managing materials, and ensuring maintenance actions are properly documented and tracked from beginning to end. IMDS is the approved AIS for all maintenance activities. The fundamental concepts, responsibilities, and procedures are detailed in the following paragraphs.

#### **3.2. Responsibilities of the Production Work Center.**

3.2.1. Assign a Job Control Number (JCN) when a loss of capability or function in either equipment/system or service occurs. All jobs will be assigned a JCN. The same JCN will be used on the job and/or applicable equipment status report throughout the life span of the job. The same JCN applies to all actions taken because of the failure/outage. (T-2)

3.2.1.1. The JCN will remain open until the job is completed, regardless of whether or not control changes between the work center and other agencies.

3.2.1.2. Capture customer service request tracking number in the IMDS job subject line/narrative (e.g., CE work order number, AT&T tracking number, Fed Ex tracking number, etc.).

3.2.1.3. Work centers may use the automatic JCN creation capability in IMDS or the manual JCN process.

3.2.1.3.1. If manual JCNs are used, contact the IMDS host Database Manager (DBM) to obtain a block of JCNs for the work center to use.

3.2.1.3.2. Work centers will have blocks of JCNs for all jobs and will report status to the customer and other designated activities for all PMC and NMC jobs.

3.2.1.4. Assign JCNs and maintain the status of all active scheduled, unscheduled, and deferred jobs to include pre- and post-deployment actions in IMDS.

3.2.2. Route Situation Reports (SITREP). The work centers will only forward the draft SITREP to the wing command post and request SITREP be sent. Work centers will not issue SITREPs unless directed by their MAJCOMs. For detailed SITREP reporting instructions, see AFI 10-206, *Operational Reporting*. (T-3)

3.2.3. Review and accomplish all applicable TCTOs, Time Change Items and document in IMDS and any other completion reporting instructions specified within the TCTO. A TCTO is used to document all permanent modifications, update changes, and retrofit changes to standard AF systems and commodities. TCTOs are authorized by T.O. 00-5-1, *AF Technical Order System*, and published according to T.O. 00-5-15. They provide instructions for modifying military systems or commodities within specified time limits, initiate special one-time inspections or impose temporary restrictions on systems or commodities. For more information on permanent and temporary modifications, see AFI 63-131, *Modification Management*. For IMDS TCTO processing and procedures, review Air Force Computer Systems Manual (AFCSM) 21-568 V2, *Time Compliance Technical Order Software User Manual*, found at <https://ceds.gunter.af.mil/Publications.aspx?AIS=35>. (T-1) **Note:**

TCTOs for RMC-supported equipment will be accomplished by or in coordination with RMC personnel.

3.2.4. Utilize Restoral Priorities. The work center will work jobs in such an order as to follow agreed-upon restoral priorities (i.e., work on a lower priority asset would be deferred if an outage on a higher priority asset occurs). Guidance for establishing restoral priorities and outage response times is found in AFI 13-204, Volume 3, *Airfield Operations Procedures and Programs*. (T-2)

3.2.4.1. Generally, restoral priorities for key systems are determined with all key base/wing agencies. Many organizations also tie this to the base recovery plan.

3.2.4.2. Establish a Memorandum of Agreement (MOA) with the host base CS or responsible agency identifying all mission critical circuits. It is imperative that DISA-scheduled interruptions, or loss of service be reported to the OSS immediately. This process will be identified in the MOA between the CS and OSS.

3.2.5. Use locally generated tracking procedures if IMDS is temporarily unavailable and maintain a copy of locally generated documentation until IMDS is available. Upon IMDS restoral, enter all the applicable data as necessary. (T-3)

3.2.5.1. Document, maintain, and report system and/or equipment status according to AFI 21-103, *Equipment Inventory, Status and Utilization Reporting*, using IMDS.

3.2.5.2. Review the Open Incident Listing (OIL) to validate accurate status weekly.

3.2.5.3. Coordinate status changes with all concerned agencies and include start time and estimated time of return to operation (ETRO) in the job narrative or applicable IMDS field. Update ETROs when the original cannot be met.

3.2.5.4. Provide a 24-hour point of contact number to all customers, command post, and up-channels.

3.2.6. Direct, document, and control removal/replacement/cannibalization/controlled substitution actions in accordance with T.O. 00-20-2. For IMDS entries, use AFCSM 21-561 Volume 2, *Integrated Maintenance Data System (IMDS) Maintenance Event Subsystem* (available at the following web site: <https://ceds.gunter.af.mil/Publications.aspx?AIS=35>) for documentation details. (T-1)

3.2.7. Act as POC for depot and maintenance assistance requests according to T.O. 00-25-108-WA-1. (T-1)

3.2.8. Complete annual review of the Equipment Inventory List (EIL) and make required changes in IMDS. (T-2)

3.2.9. Verify master Preventive Maintenance Inspection (PMI) schedule and all required PMIs are scheduled and performed at appropriate interval. (T-1)

3.2.9.1. Prepare/maintain a master PMI schedule and complete annual review and make changes in IMDS.

3.2.10. Track/update deferred PMIs to ensure timely completion. (T-1) **Note:** PMIs will NOT be deferred in Equipment Status Reporting (ESR).

3.2.10.1. Update deferred PMIs via IMDS, or, if unavailable, the AFTO Form 349, *Maintenance Data Documentation Record*, in accordance with T.O. 00-20-2 and in accordance with local procedures.

3.2.10.2. The timeframe for deferring PMIs will be half of the PMI interval, otherwise it will be considered incomplete; i.e., if the PMI is a 28-day inspection, a unit's timeframe for deferring will only be 14 days after the original inspection date. In this example, the full time for completion would also be 14 days before the scheduled date (normal performing parameters) until the PMI is deferred through the 14 days after the schedule date.

3.2.10.3. If the deferred PMI continues to the next scheduled PMI, further inspections under the same Job Standard (JST) must be cancelled. Do not close out the original deferred PMI until its completion.

3.2.10.4. If a PMI must be deferred for more than two cycles a waiver request must be sent to the appropriate Lead Command System Manager for action. These will only be approved when extenuating circumstances prevent proper maintenance.

3.2.11. Annually review all Service Level Agreements (SLA), Memorandum of Agreements (MOA), and/or Memorandum of Understanding (MOU) with outside organizations. Maintain SLA, MOA or MOU for providing back-up services as needed. (T-1)

### **3.3. Work Center Supervisors will:**

3.3.1. Ensure shift continuity is maintained, via the following: (T-1)

3.3.1.1. Review all open jobs for accuracy and to ensure the most up-to-date status/information is captured.

3.3.1.2. Acquire appropriate IMDS management-level access (to include background rights).

3.3.1.3. Brief scheduled actions and situations that could adversely impact the mission.

3.3.1.4. Provide a standby telephone number to supported mission organizations, if the work center does NOT conduct 24-hour operations.

3.3.2. Process DPEM and maintenance assistance requests according to T.O. 00-25-108-WA-1. (T-1) **Note:** Not applicable to ANG and AFRC units. DPEM program is managed at the NGB and AFRC.

3.3.2.1. Submit completed depot requests (e.g. AFTO Form 227, *C-E Depot Maintenance Requirements and Schedule*) through AF Portal via System Requirement Management Application (D).

3.3.2.2. Obtain a SRMA account to submit AFTO Form 227s for depot support by going to the AF Portal, in Applications select SRMA, fill out the CAFDEX Registration, and fill out and submit the DD Form 2875, *System Authorization Access Request*, IAW the instructions on the registration page. For further information on submitting AFTO Form 227s, see T.O. 00-25-108-WA-1.

3.3.2.3. When Emergency Depot Level Maintenance (EDLM) support is required, refer to T.O. 00-25-108-WA-1.

3.3.3. Review EIL annually in IMDS to ensure all work center-supported assets/resources are accurately reflected/listed. (T-2)

3.3.4. Report all Job Data Documentation (JDD) and perform all ESR reporting. JDD reporting for systems will be required as follows: TCTO, SBSS, NRTS, and PMI scheduling. (T-1)

3.3.5. Schedule, monitor, control, and coordinate efforts for production. (T-1)

3.3.5.1. Dispatch personnel with the technical data and support items needed to troubleshoot, repair, and restore systems in an expedient manner.

3.3.5.2. Ensure work center personnel comply with standards and schedules and promptly respond to scheduled and unscheduled support requirements.

3.3.6. Ensure personnel receive flight line drivers training as required prior to entering aerodrome. (T-1)

**3.4. Critical Outage Reporting.** With the exception of ANG, work center(s) maintaining systems referenced in Table 3.1., will submit Critical Outage Reports (COR) via email. Use Table 3.2. as a template. ATCALs/DATCALs outages need to be reported to corresponding MAJCOM office, respective Special Maintenance Team (SMT) function, and HQ AFFSA System Management ([HQAFFSA.XMS@us.af.mil](mailto:HQAFFSA.XMS@us.af.mil)) within 1 (one) hour. GTACS outages need to be reported to corresponding MAJCOM office. COR will be used to report systems that are NMC. A sample COR format is provided in Table 3.2. (T-2)

**Table 3.1. Critical Outage Reports Equipment List.**

**Airfield Systems**

- GRN-29 (all version, all subsystems)
- GSH-74
- FRN-43
- FRN-44
- FRN-45
- FSC-127 50% failure
- Outage affecting entire ATCALs receiver/transmitter site
- FMQ-19/22/23
- TRN-41
- TRN-48
- MSN-7

**Ground Radar Systems**

- AN/FSQ-204
- WSR-88D
- DBRITE
- OK-235
- OK-236
- TPN-24
- TPN-25
- TPN-19
- TPS-75



- GPN-20
- GPN-22
- GPN-30
- GSN-12
- TPX-42A
- UPX-37
- ASR-9
- MPN-25

**Table 3.2. Critical Outage Report (COR) Template.**

Critical Outage Report

1. UNIT/BASE: Self explanatory.
2. TYPE REPORT: (Initial, Update, Closing).
  - Initial: First report during a NMC (RED) outage that exceeds 4 hours
  - Update: Report providing significant details regarding change in status
  - Closing: Last report indicating outage is closed and system is FMC (Green)
3. AFFECTED SYSTEM: Equipment designator and Nomenclature (i.e. AN/GPN-30, DASR).
4. JOB CONTROL NUMBER: JCN assigned and loaded into IMDS.
5. DATE/TIME OUT: Start NMC time (Local).
6. DATE/TIME IN: Start PMC/FMC time (Local).
7. ESTIMATED TIME TO REPAIR: Anticipated PMC/FMC time.
8. JOB STATUS: AWP, MIP, Weather Delay, Single Shift Delay, etc.
9. NARRATIVE DESCRIBING OUTAGE: Cause, Condition, Symptoms of outage.
10. NARRATIVE DESCRIBING ACTIONS TAKEN: Detailed synopsis of maintenance actions/results.
11. NAME AND STOCK NUMBER OF ITEM / PARTS ORDERED: Self-explanatory.
12. DOCUMENT NUMBER: Info for item(s) listed in Line 11.
13. OFF BASE REQUISITION NUMBER / PRIORITY: Info for item(s) listed in Line 11 (FBXXXXXXXXXX).
14. POC/RELEASING OFFICIAL: Name, rank, and telephone number of commander/superintendent or NCOIC responsible for the production work center.
15. MISSION IMPACT: Detailed synopsis of the outage's impact on base flight operations. Include name, rank, office symbol, and telephone number of person providing mission impact statement.

**3.5. Suggested Annual Reading List. Note:** Sections 3.6 through 3.11 only apply to ATCALs work centers.

3.5.1. Technicians should read the following documents annually and upon initial assignment or reassignment to a work center:

- 3.5.1.1. AFMAN 11-225 *United States Standard Flight Inspection Manual* (applicable sections for assigned equipment).
- 3.5.1.2. T.O. 31Z3-822-2-WA-1, *Air Traffic Control and Landing Systems (ATCALs) Site Requirements 404L* (ATCALs site requirements 404L).
- 3.5.1.3. AFI 13-204, Volume 3 (Applicable chapters).

#### 3.5.1.4. AFI 13-204, Volume 4.

**3.6. Facility Requirements.** Equipment technical orders/maintenance handbooks may require PMI measurement data record entries by qualified technicians on a reoccurring basis. Documentation of the completion of these PMIs or other required performance measurements will meet the ATCALs facility requirements. There will be no separate formal ATCALs certification program or requirement. All certification requirements will be met by fully qualified technicians performing PMI procedures in the technical orders to validate key parameters against the facility references or TO specification. Documentation of these PMIs will done through IMDS. ATCALs are Air Traffic Control (ATC) radar, meteorological, navigational, and air traffic radio, console, and recorder technologies. (T-1)

**3.7. Facility Records.** Maintain a facility record at each ATCALs facility (may not be applicable to radio sites). This record is a transitory portion of the equipment historical file. The site applicable forms prescribed in T.O. 31Z3-822-2-WA-1 and system specific certification forms, when outlined by equipment technical orders/maintenance handbooks, are mandatory and must be completely filled out. Superseded data will be retained in the work center equipment historical file. Facility records for equipment maintained by the RMC will be maintained at the RMC, not the local site. Electronic facility records are authorized. The facility record will contain the following information: (T-1)

3.7.1. Tab 1, *Reference Data*. Contains the reference flight inspection report and all data recorded following the reference flight inspection. Each page must be clearly marked at the top, "REFERENCE DATA," with the effective date of the reference data. When references do change as a result of maintenance, parts replacements, etc., make a single line in red pen through the changed item on the original reference data worksheet, annotate the new reference, and add the date the change was made. When the reference values are changed, explain the reason for the change in any of the available remarks blocks.

3.7.2. Tab 2, *Preventive Maintenance Inspection (PMI)*. Contains data recorded during PMIs as required by applicable maintenance technical manuals. All required blocks on the appropriate forms must be completed. An explanation is required in the remarks section of the form if required data is not recorded. The remarks section of the form may be used to document trends/adjustments made during PMIs. If adjustments are made during the PMI, the final reading will be recorded. **Note:** For systems where the equipment technical manuals require certification, the certification forms will be filed in this tab. The most recent piece of certification data will be kept in the facility record and the previous two years of certification data will be maintained in equipment historical records. For command unique equipment, use locally generated or MAJCOM generated forms.

3.7.3. Tab 3, *Periodic Flight Inspection Reports*. Contains the latest two periodic flight inspection reports and the FAA Form 8240-22, *Facility Data Sheet* (validate accuracy and currency with terminal instrument procedures).

3.7.4. Tab 4, *PMI Ground Check*. Contains data recorded during PMIs to determine radiation characteristics as required by technical manuals. **Note:** Not required for radar equipment.

3.7.5. Tab 5, *Other Data*. Include pertinent site information not filed elsewhere. Items may include the most recent: Mobile Depot Maintenance, grounding measurements, SMT trip

report, ATCALs Evaluation, Air Force Engineering and Technical Service (AFETS) trip report and earth ground check documentation.

**3.8. ATCALs Maintenance Special Considerations For Removing NAVAID Identification Signals.** Aircrews are trained to consider the navigation signal unreliable when identification is not received or the identification code is “T E S T” (- . . . -). The removal of identification is not a substitute for Notice to Airmen (NOTAM) requirements. Remove identification or transmit “T E S T” identification when the NAVAID facility is out of service. The preferred method is to remove identification when performing maintenance. (T-1)

**3.9. ATCALs Facility Reference Data.** If the facility cannot be returned to the established facility references, but facility performance meets or exceeds technical order specifications and can be verified with a ground check, the facility is considered usable. Perform complete data collection and forward existing facility reference data and newly recorded data to HQ AFFSA/XMR within 5 duty days for analysis. HQ AFFSA/XMR coordinates with SMT to determine if further adjustments are required, or if a special (reference) flight inspection should be accomplished to establish new facility references. If proper facility performance cannot be verified with a ground check, report the facility’s condition to the senior air traffic control supervisor as unusable and request SMT assistance in accordance with T.O. 00-25-108-WA-1. (T-1)

**3.10. Non-ATCALs Equipment.** ATCALs work centers maintaining equipment that they do not have ownership of will obtain a local MOA or SOW for maintenance of non-ATCALs equipment. This document must be reviewed annually, by all parties. (T-3)

**3.11. Work Center Duties and Responsibilities for Remotely Maintained Equipment.**

3.11.1. Provide a 24-hour point of contact to the RMC to facilitate augmentation duties. (T-1)

3.11.2. Work directly with the RMC to replace failed assemblies IAW RMC local augmentation guide. (T-1)

3.11.3. Respond to outages, after being notified by the RMC, on a 24-hour basis IAW LOP. (T-1)

3.11.4. Identify a point of receipt for parts delivery. (T-1)

3.11.5. Return failed assemblies using established RMC supply procedures. (T-1)

3.11.6. Work directly with the RMC to perform tasks in RMC local augmentation guide as well as general maintenance practices. (T-1)

3.11.7. Be responsible agency for on-site telephone, status line or modem line problems using existing procedures. (T-1)

3.11.8. Work directly with Civil Engineering Squadron to resolve commercial power or Environmental Control Unit (ECU) problems (including grounding and lightning protection). If modification is required, coordinate with the RMC to ensure any unique and/or standard configuration requirements are met. (T-1)

3.11.9. Provide augmentation, facility access, flight line communication and qualified flight line driver to RMC technicians when on-site maintenance is performed. (T-1)

- 3.11.10. Perform escort duties and facility access for required visits (I.E. local Civil Engineering, Safety, etc.). (T-1)
- 3.11.11. Provide common hand tools and test equipment (already existing in the work center) to responding RMC technicians. (T-1)
- 3.11.12. Maintain accountability for the equipment on CA/CRL. (T-1)
- 3.11.13. Maintain test equipment on CA/CRL and TMDE accounts. (T-1)
- 3.11.14. Perform facility/building manager responsibilities to include DPEM/SRMA requests on shelters, antenna towers, etc., IAW 00-25-108-WA-1. For antennas and antenna towers, see Attachment 3. (T-1)
- 3.11.15. Perform general housekeeping and corrosion prevention and control responsibilities on remotely maintained systems that do not require powering down of system. If required to power down system, coordinate actions with servicing RMC. (T-1)

## Chapter 4

### MOBILITY WORK CENTER

**4.1. Introduction.** This chapter addresses maintenance management policies for all units with a mobility mission. Regardless of the unit's organizational structure the principles of maintenance management shall be followed to ensure efficient and effective maintenance. **Note:** The contents of this chapter are meant as additional requirements for Unit Type Code (UTC) based work centers. Production work center maintenance practices and requirements must be adhered to in accordance with this AFI.

**4.2. Scope.** In-garrison maintenance, pre-deployment planning, and pre-deployment preparation are critical to ensuring equipment and personnel readiness when tasked for contingency operations. Maintenance management procedures in a deployed environment must be appropriately scaled to balance maintenance requirements against operational commitments. Personnel at all levels must leverage opportunities to compensate for the inefficiencies of contingency operations.

4.2.1. All units with a deployable Ground Radar or Airfield Systems mission and deployable UTC, will apply and perform the management policies prescribed within this instruction unless otherwise specified. Regardless of the unit's organizational structure, the principles of management will be followed to ensure efficient and effective activities in the deployed environment.

4.2.2. Units with deployable missions will designate a deployed UTC Team Lead prior to deployment and support management functions and activities. The appointed UTC Team Lead, managing functions structured by UTC, will ensure these functions adhere to the principles of a production work center in accordance with **Chapters 2** and 3 of this document.

4.2.3. The deployed commander/superintendent is responsible for overall management, while equipment/UTC Team Leads are responsible for ensuring their personnel comply with established guidance. Deployed maintenance management focuses on delivering the required operational capabilities while limiting operation interruptions.

#### **4.3. Deployed Site Commander Duties and Responsibilities.**

4.3.1. Ensure authorized unit weapons and ammunition are stored and issued according to DOD and Air Force directives. (T-1)

4.3.2. Establish a 24-hour point of contact for each deployed equipment/UTC and ensure they perform Maintenance Operations Center function. (Responsibilities may be assigned to Team Leads) (T-1)

4.3.3. Ensure Inspection and Evaluation (I&E) duties are performed by appointing one or more personnel to I & E duties when necessary as described in paragraph 4.5. (T-1)

4.3.4. Develop written guidance that outlines how to plan, schedule, monitor, control, report, and provide support for equipment maintenance and circuit restoral actions on all local and subordinate units. (T-1)

#### **4.4. Maintenance Operation Center Function Responsibilities.**

4.4.1. Contact the appropriate agency to request IMDS connectivity or verify that connectivity is already established. (T-2)

4.4.2. Assign a JCN to each equipment/UTC for initial operational or system checks during setup. These JCNs may be issued upon arrival at the deployment site or prior to departure from home station to minimize disruption during initial setup at the deployed site. Deployed IMDS updates will be completed as soon as access is obtained. (T-2)

4.4.3. Track milestones such as the maintenance-ready condition of equipment/UTCs, installation of telephone lines, and the setup or tear down of power generators, antennas, and signal cable runs. (T-2)

4.4.4. Coordinate external maintenance support for equipment/UTCs with host nation support activities (i.e., vehicle maintenance, Petroleum, Oil, & Lubricants (POL), civil engineering, etc.) or verify support is already in place. (T-2)

4.4.5. Ensure all systems subject to FAA flight inspection meet inspection requirements prior to being placed into service. AFMAN 11-225, authorizes military commanders to authorize use of the systems without current flight inspections for military only. (T-1)

4.4.6. Review ESR and maintenance data documentation for completion. (T-2)

**4.5. Inspections and Evaluations (I&E).** In most cases, UTC evaluations will not be required in the deployed environment. However, reconstitution and redeployment of equipment/UTCs demands the accomplishment of evaluations. Ensure the following I&E duties are performed: (T-1)

4.5.1. Conduct or participate in site transfer inspections when relieving/replacing personnel at a deployed location. This will only be done if previously deployed equipment/UTCs will remain in place at the deployed location. Site transfer inspections ensure systems are operational, problems are identified, and equipment inventory is complete and capable of meeting mission requirements.

4.5.2. Document site transfer inspections within 15 days after assuming maintenance responsibility. If possible, perform inspection with incoming and outgoing personnel. Inspection will include the following areas as a minimum:

4.5.2.1. Accomplish minimum essential checks as specified by the site commander to ensure the systems are operating within required parameters in accordance with associated technical data.

4.5.2.2. Ensure all safety items are on-hand and safety deficiencies identified.

4.5.2.3. Ensure all C-E facilities, shelters, work benches, and systems are grounded properly.

4.5.2.4. Ensure corrosion prevention and control has been conducted as required.

4.5.2.5. Ensure all mobility markings are up-to-date.

4.5.2.6. Ensure required support items (i.e., technical data, tools, TMDE, RSP, etc.) are available and in proper condition to support a sustained deployment.

4.5.2.7. Verify master PMI schedule and all required PMIs are scheduled and performed at appropriate interval.

4.5.2.8. Ensure all assets are accounted for and documented on applicable CA/CRL, mission critical systems and equipment listings, or other equipment accountability and inventory documents.

4.5.3. Maintain a copy of the inspection on site for a minimum of 12 months.

4.5.4. Conduct UTC Personnel and Equipment Evaluations.

4.5.4.1. These evaluations will only be performed while deployed if directed by the deployed site commander.

4.5.4.2. The deployed site commander will determine the personnel best suited to perform the evaluations. The evaluation report will be routed and closed within the deployed unit.

4.5.5. Perform air mobility and road mobility evaluation for redeploying equipment.

4.5.5.1. These evaluations must be completed prior to redeployment of equipment/UTCs to home station or alternate deployment location.

4.5.6. Deployable Evaluation Requirements. Work centers, equipment, and personnel will be evaluated under the UTC evaluation requirements in [Chapter 7](#).

**4.6. Materiel Control.** Materiel Control will function as organizational supply and provide mobility support. Materiel Control will perform the following duties: (T-1)

4.6.1. Set up a supply and equipment account with the support base as identified in the tasking directive. This will include the identification of contact points, means of communication, and delivery destinations.

4.6.2. Identify deployed or transferred assets to the support base. For long-term deployments, transfer assets to the support base account via Redistribution Order (RDO) procedures. **Note:** Transfer of ANG assets will follow the guidance in DODD 1225.6, *Equipping the Reserve Forces*.

4.6.3. Ensure Readiness Spares Package (RSP) storage availability, issue and turn-in procedures are followed, and establish procedures for RSP replenishment at deployed locations.

4.6.4. Maintain a “part number to National Stock Number (NSN)” cross-reference capability on all items contained in the RSP(s). WEBFLIS/FEDLOG is recommended.

4.6.5. Close supply and equipment accounts with the support base upon termination of deployment.

**4.7. Team Lead.** Team Lead will hold overarching responsibility for each particular UTC. The Team Lead will adhere to and enforce all production work center responsibilities in addition to performing the following duties: (T-1)

4.7.1. Ensure completion of pre-deployment and post-deployment inspections for assigned UTC to include:

4.7.1.1. Ensure completion of highest order preventive maintenance inspection and below.

- 4.7.1.2. Ensure completion of End Item equipment inventory AFTO Form 470, *Electronic Set Inventory Checklist*, AFTO Form 471, *Electronic Set Inventory Checklist Configuration Data*, and AFTO Form 472, *Electronic Set Inventory Checklist Completion Data*, and include copies of all historical records.
- 4.7.1.3. Check UTC inventory against Logistics Detail (LOGDET) for completion and accuracy.
- 4.7.1.4. Check RSP inventory for completion and accuracy.
- 4.7.1.5. Ensure completion of all required inspections on Primary Movers and Mobilizers.
- 4.7.1.6. Ensure all cargo is packed, prepared, and processed for shipment IAW AFI 10-403, *Deployment Planning and Execution*, **Chapter 4**.
- 4.7.1.7. Ensure all required shipping documents are acquired.
- 4.7.1.8. Coordinate with support work centers to ensure all support equipment will be available and in place (i.e. Power Pro, HVAC, and Vehicles).
- 4.7.1.9. Ensure all technical manuals are current, complete, and packed.
- 4.7.1.10. Ensure all required maintenance documentation forms and supply forms are acquired and packed.
- 4.7.2. Ensure all members of UTC follow established maintenance and safety practices in accordance with this guidance.
- 4.7.3. Ensure all maintenance actions are properly documented in IMDS or on an AFTO Form 349, *Maintenance Data Collection Record*, until IMDS can be updated.
- 4.7.4. Ensure documentation of all critical maintenance actions in historical records.
- 4.7.5. Ensure equipment statuses are being reported IAW AFI 21-103, **Chapter 6**.
- 4.7.6. Ensure completion of Maintenance Operation Center responsibilities if assigned by site commander.



## Chapter 5

### REGIONAL MAINTENANCE CENTER

**5.1. Introduction.** This chapter describes procedures and guidelines to ensure safe, reliable ATCALS performance for non-remote and remotely maintained systems. This chapter will outline RMC support of local ATCALS work centers and systems. The ATCALS support includes the three fixed-base RMCs in the European, Pacific, and CONUS theaters. HQ AFFSA/XMR manages all three RMCs in support of the using commands and local base units.

5.1.1. The CONUS RMC (HQ AFFSA/XMRC) is located at Oklahoma City, OK, and will service the continental U.S. as well as Greenland, and South/Central America. The European RMC (HQ AFFSA/XMRE) is located at Kapaun AB, Germany and will service sites in Europe and Africa. The Pacific RMC (HQ AFFSA/XMRP) is located at Yokota AB, Japan, and will service sites in the Pacific, including Alaska and Hawaii.

5.1.2. The appropriate RMC will provide maintenance support/monitoring for remote maintenance systems.

5.1.3. All RMCs will maintain equipment within their respective region, but can be called upon to support other regions.

5.1.4. The RMCs will provide all traditional AFETS, SMT, and ATCALS Radar Evaluation support for all units.

### **5.2. MAJCOM Duties and Responsibilities.**

5.2.1. Identify a central point of contact for administrative issues, Critical Outage Reports, and the Health of ATCALS.

5.2.2. Work closely with Chief of the RMC, and assigned units to resolve any policy, and support issues adversely affecting the mission.

### **5.3. HQ AFFSA/XM Duties and Responsibilities.**

5.3.1. Review annually all applicable MOAs with owning MAJCOMs and coordinate any changes as necessary.

5.3.2. Provide general guidance/policy for all RMC activities relating to Regional Maintenance (RM), AFETS/SMT support for non-remote systems, and ATCALS Radar Evaluation support. Implementation of HQ AFFSA guidance/policy is the responsibility of each RMC.

5.3.3. Advise HQ AFFSA/CC on all hiring for RMC positions and recommend the most qualified personnel.

5.3.4. Delegate authority and responsibility to each RMC to coordinate and work directly with each MAJCOM and associated units with regards to maintenance of RM ATCALS systems and AFETS/SMT support for non-remote systems.

5.3.5. Provide performance data via semi-annual "Health of the Fleet" reports or a real-time dashboard function.

5.3.6. Coordinate sustainment and logistic issues with HQ AFFSA/XMS (Lead Command System Managers).

5.3.7. Annually review policies, procedures, results and problems to continually improve the RM process with the Chief of the RMC.

5.3.8. Provide geodetic survey support as it pertains to ATCALs.

**5.4. RMC Positions Duties and Responsibilities.** The following section describes the only authorized duty titles for 1C8 personnel assigned to an RMC. Deviations must be approved by the 1C8 Career Field Manager. Team Chief, Supervisor, and Technician positions must be preceded by the specific career field function of the Airmen (e.g., “Airfield Systems Technician” or “Ground Radar Supervisor”) and succeeded by the location (e.g. “Pacific RMC” or “CONUS RMC”).

5.4.1. Flight Chief, Remote Maintenance.

5.4.1.1. Manage the day-to-day operations within the RMC, and directly supervise assigned technicians.

5.4.1.2. Meet 1C8XX guidelines outlined in Special Duty Catalog (SPECAT) under section 16 (Air Force Flight Standards Agency).

5.4.1.3. Lead and manage teams while maintaining the highest level of readiness to ensure mission success.

5.4.1.4. Ensure funds, facilities, and other resources are utilized in an effective and efficient manner and in the best interest of the RMC. Plan resource utilization, replenishment, and budget allocation to ensure personnel are provided the equipment and resources needed to accomplish the mission effectively.

5.4.1.5. Provide supervisory oversight to technicians, to include communicating expectations, conducting performance feedback, and completing/endorsing reports.

5.4.1.6. Detect and correct unsafe and/or irresponsible behaviors that negatively impact the RMC mission and/or individual readiness.

5.4.1.7. Ensure technicians receive applicable training (i.e. OJT, classroom) and maintain 100% work center task coverage.

5.4.1.8. Validate training courses and guides for RMC technicians; work with other RMC flight chiefs to standardize training on modernized ATCALs.

5.4.1.9. Develop/maintain duty, standby, and flight inspection schedules to provide 24/7 operations.

5.4.1.10. Manage all modernized ATCALs equipment discrepancies.

5.4.1.11. Issue job control numbers (JCN) to Air Traffic Control Facilities.

5.4.1.12. Report critical (“red”) jobs to applicable MAJCOMS.

5.4.1.13. Provide customers with accurate/timely outage updates.

5.4.1.14. Ensure all job data documentation is accurate and complete.

5.4.2. Flight Chief, Field Maintenance.

- 5.4.2.1. Manage ATCALs equipment restorals and preventive maintenance that cannot be performed remotely from the respective RMC.
  - 5.4.2.2. Meet 1C8XX guidelines outlined in SPECAT under section 16 (Air Force Flight Standards Agency).
  - 5.4.2.3. Lead and manage teams while maintaining the highest level of readiness to ensure mission success.
  - 5.4.2.4. Ensure funds, facilities, and other resources are utilized in an effective and efficient manner and in the best interest of the RMC. Plan resource utilization, replenishment, and budget allocation to ensure personnel are provided the equipment and resources needed to accomplish the mission effectively.
  - 5.4.2.5. Provide supervisory oversight to technicians, to include communicating expectations, conducting performance feedback, and completing/endorsing reports.
  - 5.4.2.6. Detect and correct unsafe and/or irresponsible behaviors that negatively impact the RMC mission and/or individual readiness.
  - 5.4.2.7. Coordinate with the Remote Maintenance Flight Chief and the ATCALs Installation Flight Chief to establish annual inspection schedule.
  - 5.4.2.8. Manage emergency restorals and assign technicians.
  - 5.4.2.9. Defer annual PMIs, when required, through the respective RMC Chief.
  - 5.4.2.10. Coordinate with base-level Airfield Systems personnel and base-level operations personnel for approved downtime to perform annual visits and/or restoral of equipment.
  - 5.4.2.11. Coordinate flight inspections on equipment restorals as outlined in T.O. 31Z3-822-2-WA-1.
  - 5.4.2.12. Manage modernized ATCALs equipment discrepancies requiring RMC technicians on-site.
  - 5.4.2.13. Provide critical (“red”) job updates, as applicable, to the Remote Maintenance Flight Chief.
  - 5.4.2.14. Update customers with accurate/timely outage information.
  - 5.4.2.15. Ensure all job data documentation is accurate and complete.
- 5.4.3. Flight Chief, ATCALs Installations.
- 5.4.3.1. Manage, schedule, and coordinate remote maintenance capable ATCALs installations.
  - 5.4.3.2. Meet 1C8XX guidelines outlined in SPECAT under section 16 (Air Force Flight Standards Agency).
  - 5.4.3.3. Lead and manage teams while maintaining the highest level of readiness to ensure mission success.
  - 5.4.3.4. Ensure money, facilities, and other resources are utilized in an effective and efficient manner to accomplish the mission effectively. Plan resource utilization,

replenishment, and budget allocation to ensure personnel are provided the equipment and resources needed to accomplish the mission effectively.

5.4.3.5. Provide supervisory oversight to technicians, to include communicating expectations, conducting performance feedback, and completing/endorsing reports.

5.4.3.6. Coordinate installation timeframe and ATCALs downtime requirements with applicable MAJCOM, wing, and base-level operations personnel.

5.4.3.7. Develop comprehensive installation schedule in coordination with applicable program office/personnel and contractors.

5.4.3.8. Coordinate with the Remote Maintenance Flight Chief and the Field Maintenance Flight Chief to assign qualified RMC technicians to pertinent installations.

5.4.3.9. Schedule flight inspections for new ATCALs through Flight Inspection Central Office (FICO).

5.4.3.10. Coordinate with HQ AFFSA/XRRF and the appropriate Program Management Office (PMO) to manage system installation schedule(s).

5.4.3.11. Provide updates, as applicable, to the program office and RMC.

5.4.3.12. Update customers with accurate/timely information on overall progress of the project.

5.4.3.13. Ensure required equipment data/documentation is gathered, accurate, and complete.

#### 5.4.4. Team Chief, [CONUS/Pacific/European] RMC.

5.4.4.1. Lead maintenance actions during ATCALs site visits, equipment restorals, and installations.

5.4.4.2. Maintain qualification IAW Team Chief Work Center JQS. Only fully qualified personnel will hold Team Chief positions. The Flight Chief of ATCALs Installations, Field Maintenance, or Remote Maintenance will evaluate team chiefs.

5.4.4.3. Select an appropriate team based on skills and number of technicians required. Careful consideration should also be given to determine technician development and training needs.

5.4.4.4. Schedule all annual site visits, restorals, installations, and site surveys.

5.4.4.5. Review and interpret all facility reference and site data prior to any site visit and equipment maintenance.

5.4.4.6. Notify and coordinate all equipment downtime and NOTAM schedules with site agencies responsible for system status.

5.4.4.7. Notify and coordinate with local work centers for all assistance with remote or on-site maintenance on all affected systems.

5.4.4.8. Schedule and confirm any flight checks necessary for any equipment restorals or installations prior to trip departure date.

5.4.4.9. Conduct in-briefs/out-briefs with respective operations agencies for all site visits.

5.4.4.10. Ship all tools and test equipment prior to departure. Ensure all shipping documentation has been accomplished for departure and return shipments.

5.4.4.11. Collect and document all data on appropriate equipment forms after any maintenance is performed.

5.4.4.12. Ensure all changes to facility reference data is verified, documented, and input into approved databases. (Verify by ground checks or necessary flight check.)

5.4.4.13. Confirm equipment configuration files are up to date and saved to any pre-designated file sharing locations.

#### 5.4.5. Supervisor, [CONUS/Pacific/European] RMC.

5.4.5.1. Aid in maintenance actions during ATCALs site visits, equipment restorals, and installations and perform supervisory duties for subordinates.

5.4.5.2. Maintain qualification IAW Supervisor Work Center JQS.

5.4.5.3. Provide supervisory oversight to subordinates, to include communicating expectations, conducting performance feedback, and assessing subordinate and unit climate for adverse trends.

5.4.5.4. Assist with annual site visits, equipment restorals, and installations.

5.4.5.5. Review and interpret all facility reference and site data prior to any site visit and equipment maintenance.

5.4.5.6. Perform preventive maintenance on ATCALs equipment and initiate action to correct unsatisfactory equipment performance trends.

5.4.5.7. Coordinate with local work centers for on-site maintenance on systems. Conduct flight inspections, performance tests and evaluate results to ensure proper system operation.

5.4.5.8. Assist with in-briefs/out-briefs with respective agencies for all site visits/installations.

5.4.5.9. Assist with data collection and documentation on appropriate equipment forms following maintenance actions.

5.4.5.10. Assist with facility reference data collection and documentation in the approved database. Perform necessary ground checks needed for equipment validation.

#### 5.4.6. Technician, [CONUS/Pacific/European] RMC.

5.4.6.1. Maintain ATCALs equipment and perform all assigned RMC tasks as directed by RMC team chiefs/supervisors. Responsible for assisting with site visits, conducting alignments and repairs, as well as modifications of ATCALs equipment.

5.4.6.2. Complete duty position upgrade tasks IAW Master Training Plan (MTP). Upon assignment to an RMC, personnel will begin at the technician level.

5.4.6.3. Complete all training on all RMC equipment and show technical proficiency.

5.4.6.4. Use specialized test equipment and software-controlled diagnostics to tune, align, and adjust RMC equipment.

5.4.6.5. Install, maintain and modify RMC equipment IAW applicable technical order procedures.

5.4.6.6. Conduct flight inspections, performance tests and evaluate results to ensure proper system operation.

5.4.6.7. Perform preventive maintenance on ATCALs equipment and initiate action to correct unsatisfactory equipment performance trends.

5.4.6.8. Record and maintain inspection and maintenance records.

5.4.6.9. Maintain the highest level of personal and team readiness to meet mission requirements.

### **5.5. Regional Maintenance (RM) Work Center Duties and Responsibilities.**

5.5.1. Perform all routine and specialized maintenance for fixed base remotely maintained equipment to include resets, alignments, adjustments and flight check inspections when required.

5.5.2. Respond (by dialing in to system) to troubleshoot failures and maintenance alerts 24 hours per day, 7 days per week. The expected response time is to be no more than 30 minutes during the normal duty hours, 60 minutes for non-duty hours.

5.5.3. System outage responses will be first in, first out. System restoral will be based on outage criticality, i.e. red outage vs. amber outage.

5.5.4. For RM system outages, initial fault notification will come directly from the responsible ATC organization.

5.5.4.1. Take control of the system and perform appropriate actions to correct the problem. For extended outages over 2 hours, JCNs will be issued to appropriate ATC agencies. MAJCOMS will receive CORs for extended outages.

5.5.5. Order parts for RM equipment and notify the local maintenance unit of the expected delivery date. Local maintenance personnel will conduct the parts replacement under the direction of RM personnel IAW RMC Local Augmentation Guide.

5.5.6. Respond on-site as soon as possible or in conjunction with required parts arriving on site, when on-site maintenance is required or in the event of a catastrophic outage.

5.5.7. Contact the appropriate ATC organization following restoral and return system control.

5.5.8. Provide quarterly status of remotely maintained ATCALs systems via health of fleet reporting available via RMC SharePoint.

5.5.9. Visit each base/site annually to perform on-site maintenance/system optimization on remotely maintained systems. RMs will coordinate visits with site POCs.

5.5.10. Perform quality assurance acceptance evaluations during equipment installation and provide orientation training to assigned work center personnel at that time.

5.5.11. Request out-of-cycle flight inspections through the base Air Traffic Manager, AOF/CC, or OSS/OSA.

5.5.12. RM personnel will analyze Flight Check Inspection reports.

## **5.6. AFETS/SMT Work Center Duties and Responsibilities.**

5.6.1. Provide technical assistance, training, and emergency on-site assistance for all non-remote systems. Initial response to an on-site assistance request from the unit will be as soon as possible after request received by HQ AFFSA via MAJCOM.

5.6.1.1. Restoral priorities for non-remote systems will be handled first-in, first-out and IAW MAJCOM MOA.

5.6.1.2. The corresponding MAJCOM will be notified when an AFETS/SMT technician will respond to an on-site emergency assistance request for non-remote systems.

5.6.2. Respond to and prioritize requests (based on mission impact, budget and manning constraints) for on-site support. Owning units will request support via the appropriate MAJCOM.

5.6.3. Provide telephone support to field technicians during normal duty hours.

5.6.4. Provide on-site outage response when outages exceed field technicians' abilities.

5.6.5. Provide training support on-site as requested.

5.6.6. Provide Subject Matter Expert (SME) for analysis of complex problems, flight check failures and engineering requests.

## **5.7. ATCALs Radar Evaluation Work Center Duties and Responsibilities.**

5.7.1. Provide technical assistance, training, and emergency on-site assistance for terminal ATC radar systems. Initial response to an on-site assistance request from the unit will be as soon as possible after request received by HQ AFFSA via MAJCOM.

5.7.2. Assist units with commissioning activities for new/relocated radar facilities. Duties may include coordination of geodetic survey; performing system performance analysis/optimization for mission requirements; planning and executing formal flight inspection; and documentation of results.

5.7.3. Provide first-call response to system outages in conjunction with radar AFETS/SMT. Coordinate restoral efforts if second-level assistance is required (e.g., FAA second-level engineering, STARS Operational Support Facility).

5.7.4. Provide technical expertise to PMO or LCSM for technical instruction changes, system modifications, procedure development, operational requirements development, and operational testing.

5.7.5. Re-optimize/certify radar systems following changes to the system, radar environment, or mission (e.g., new construction, changes to assigned airspace).

5.7.6. Provide pre-construction analysis of potential radar impacts related to construction of new buildings, solar farms, and wind turbines IAW AFI 13-201. Assist units with post-construction mitigation to reduce or eliminate impacts.

5.7.7. Monitor the FAA Obstruction Evaluation Database (OE/AAA) for wind turbine projects in the vicinity of CONUS terminal radars.

5.7.8. Provides representative to Air Staff Encroachment Management Working Group/Mitigation Response Team (EMWG/MRT) IAW AFI 90-2001 (in coordination).



## Chapter 6

### SYSTEM MANAGERS

**6.1. Introduction.** Lead Command System Managers (LCSM) provide an AF focal-point for maintenance and sustainment support for common communications equipment/systems. LCSMs ensure common systems are reliable, maintainable, and available to meet mission needs by providing all levels of support. They are in direct communication with the field units, PMOs, ATCAL SPO, logistics and acquisition communities, depots, lead commands, Cyber Systems Integrators, AFETS, EI community, the MAJCOM SME, and Air Force Career Field Managers (AFCFM).

**6.2. Duties and Responsibilities.** Basic system management duties and responsibilities include, but are not limited to, the following items.

6.2.1. In addition to duties and responsibilities outlined in AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*, LCSMs will:

6.2.1.1. Work with the MAJCOM SME to ensure equipment/systems are available to meet mission requirements.

6.2.1.2. Understand the reason for, and role of, designated Lead Commands (LC) and develop/maintain close working relationships with them for their designated systems.

6.2.1.3. Develop and maintain a Points of Contact (POC) list for all Item/Program Managers, MAJCOM Staff, and all maintenance work centers within each MAJCOM. Use of an organizational inbox is the preferred contact method for initial e-mail correspondence to and from LCSM.

6.2.1.4. Stay abreast of related technological changes in order to effectively manage the equipment/systems for which they are responsible.

6.2.1.5. Address HHQ inquiries and act as SME to support system development, sustainment, and logistical support.

6.2.1.5.1. Research, develop courses of action, and provide recommendations on life cycle management of fielded systems.

6.2.1.6. Provide logistical SME support by conducting reviews of AFEMS, Allowance Source Code (ASC), and other supply approved information systems (AIS). Provide change/improvement recommendation to MAJCOMs or individual organizations.

6.2.1.7. Interpret policy and procedures for requesting organizations.

6.2.1.8. Assist with development of AFMQCC, AFMSIs, other inspection checklists, and policy. See Attachments 5 and 6 for a list of AFMQCCs and AFMSIs.

6.2.1.9. Participate in maintenance and logistics community working groups, conferences, and seminars (e.g., Product Improvement Working Groups (PIWG), Weapon Systems Review (WSR), Supply Summits, Allowance Source Code (ASC) Review, etc.).

6.2.1.10. Conduct data calls for lead commands, HHQ, MAJCOMs, and lateral agencies. Draft requests, validate responses, consolidate information, conduct data/root cause analysis, and provide detailed report.

6.2.1.11. Assist in revision of system policy, training, and guidance documents (i.e., Technical Order (T.O.), Air Force Job Qualification Standard (AFJQS), Air Force Qualification Training Package (AFQTP), Air Force Instruction (AFI), Career Field Education and Training Plan (CFETP), Career Development Course (CDC), Specialty Training Standard (STS), as well as other documents impacting fielded systems.

6.2.1.12. Review system/equipment documentation for policy and procedural implications and coordinate legal review.

6.2.1.13. Coordinate and resolve Equipment Status Reporting (ESR) and job data documentation (JDD) issues with applicable organizations.

6.2.1.14. As requested, augment MAJCOM Inspector General (IG).

6.2.1.15. Coordinate operational issues that affect mission degradation with lateral agencies (e.g., LC, SPO, PMOs, PCO, FOA, 38 CEG, AFETS, and associated system depot offices).

6.2.1.16. Assist with new system requirements from LC, MAJCOM or unit. LCSM coordinates requirements with appropriate agencies, provides comprehensive recommendation, and forwards validated requirement to appropriate office.

6.2.1.17. Coordinate and process system modification request per T.O. 00-5-1 and AFI 63-101/20-101, *Acquisition and Sustainment Life Cycle Management*.

6.2.1.18. Provide SME support on system/equipment life cycle management plans.

6.2.1.19. Provide technical input, requirements, and assessment on system/equipment contracts. LCSMs may also provide source selection recommendation/technical assessment.

6.2.1.20. Review system/equipment architecture and technical information from equipment manufacturer/lateral agency to ensure fielded systems are reliable, available to meet mission needs, and logistically supportable.

6.2.1.21. Assist in health of fleet reporting.

6.2.1.22. Validate discrepancy notices and recommend potential solutions.

### **6.3. LCSM Points of Contact.**

6.3.1. HQ AFFSA/XMS will be the LCSM POC for Instrument Landing System ILS, TACAN, VORTAC, ATCALs Radars, DATCALs and FAA-managed systems such as ETVS, DALR, DASR, STARS, etc.

6.3.2. Units requiring assistance for non-ATCALs/DATCALs systems, command-unique, or cross-utilized end items will contact the MAJCOM functional manager.

6.3.3. Units requiring NEXRAD assistance contact AFMC AFWA/AFLCMC/HBAW-OL.

## Chapter 7

### INSPECTIONS AND EVALUATIONS

**7.1. Introduction.** Inspections and Evaluations (I&E) provide a process to ensure mission accomplishment occurs within the confines of public law, DoD/AF policy and guidance and technical orders. I&E also provides an analysis, reporting and deficiency resolution capability. It serves as the tool for ensuring that a process, equipment, system, end item or service is of the type and quality to meet or exceed requirements for effective mission operations.

7.1.1. Applicability and Authority. I&E is applicable to all base field-level units with Ground Radar and Airfield Systems personnel. Those units will apply and perform the I&E policies prescribed within this instruction and applicable checklists. Unit leadership is responsible for the safety and quality of equipment operation, training, and production. Additionally, quality and equipment reliability is the responsibility of all personnel performing mission operations. These actions will utilize the AFIS self-assessment program as detailed in AFI 90-201, *The Air Force Inspection System*, and Capstone inspection to meet compliance and evaluation requirements. **Note:** ATCS and GTACS units will continue to provide local QA support and will establish guidance for their work centers. NGB/A2/3/6A will establish guidance for fixed ANG work centers.

#### **7.2. Roles and Responsibilities.**

7.2.1. Fixed-Base Units. All fixed-base ATCALs/Weather will meet requirements as specified in Unit Effectiveness Inspection (UEI) criteria, outlined in AFI 90-201. The UEI team evaluator will follow the general evaluation guidelines outlined in Attachment 2 and document the results in the UEI report.

7.2.2. Mobile Units. UTC evaluations will consist of three separate components designed to measure readiness: personnel readiness evaluation, equipment readiness evaluation and acceptance readiness inspection when new or overhauled equipment is received from the manufacturer/depot.

**7.3. Self-Inspection/Assessment Program.** Operations group and/or operations support squadron commanders will appoint a work center self-assessment program manager, who will oversee the work center's self-inspection/assessment program as outlined in AFI 90-201, [Chapter 6](#).

7.3.1. Work center NCOICs are responsible for overseeing the application of MICT checklists per MAJCOM/wing guidance. They shall provide all necessary documentation to the unit MICT manager, adhering to the Commander's Inspection Program. Use Attachment 4, *Sampling Plan*, for all equipment inspections.

**7.4. Managerial Evaluations (ME).** MEs will be performed during UEIs utilizing the AFIS.

#### **7.5. Personnel Evaluations (PE).**

7.5.1. Overview. The personnel evaluation program assesses the effectiveness of a work center's training program, technician competence, and technical and procedural data adequacy. These evaluations ensure equipment or systems are maintained in an effective and efficient manner to meet mission requirements. The evaluation can be accomplished on a

system, equipment or service-oriented function the technician is qualified to perform (i.e., align radar system, repair navigation system, follow a written process, etc.). Evaluators observe how well processes are performed to determine if the technician demonstrates sufficient skill to accomplish the tasks.

7.5.2. There are four types of PEs: individual evaluations, UTC evaluations, special evaluations, and equipment personnel evaluations.

7.5.2.1. Individual Personnel Evaluation (IPE). This evaluation is completed on all 1C8 enlisted personnel within one year of initial assignment to an organization and upon return to the production work center after an absence of one year or longer. This does not apply to MSgt - CMSgt unless they are task qualified to maintain equipment. Air Force Reserve Command (AFRC) and Air National Guard (ANG) personnel conduct this evaluation within two years of assignment. For short tour overseas assignments of 18 months or less, IPEs will be accomplished no later than 9 months' time on station. (T-1)

7.5.2.2. UTC Personnel Evaluations (UTC PE). UTC evaluations assess UTC personnel readiness against the UTC MISCAP and ensure mission reliability. UTC PEs are completed on all 1C8 personnel assigned to UTC-based organizations whose primary mission is to deploy. These evaluations will be completed within 90 days (180 days for ANG/AFRC) after an individual is reported as Status of Reporting and Training System (SORTS)/ Air and Space Expeditionary Force Reporting Tool (ART) qualified by their supervisor. These evaluations can be accomplished during field training exercises and other internal training opportunities. Team UTC PEs are encouraged. These evaluations do not apply to UTCs that do not have an equipment/technical component. (T-1) **Note:** This evaluation can be accomplished in conjunction with the initial personnel evaluation and/or replace the initial personnel evaluation. If an individual is permanently reassigned to another UTC or the primarily assigned UTC has major changes (e.g., equipment replacement, new tasks identified) another UTC PE is required.

7.5.2.3. Special Personnel Evaluation (SPE). Special PEs are conducted on an as-needed basis. Commonly these evaluations are conducted after major modifications of equipment/systems, or reevaluation of an individual who received a Not In Compliance (NIC) result from a previous evaluation, or who has had his/her qualification status revoked for any reason other than supervisor decertification. (T-1)

7.5.2.3.1. Modification SPEs are required within 60 days of new equipment/system acceptance on a sampling of assigned active duty personnel. Modification PEs are required within 120 days of new equipment/system acceptance on a sampling of ANG/AFRC personnel. A major modification is defined as changes to published operating system parameters, specifications, requirements or any change that will revise published safety procedures.

7.5.2.3.2. Reevaluation SPEs are the assessment of an individual who received a NIC result from a previous evaluation, or who has had his/her qualification status revoked for any reason other than supervisor decertification. Reevaluation will be conducted within 90 days after notification of recertification by the individual's supervisor. ANG and AFRC will be reevaluated within 120 days. The reevaluation of an individual whose previous evaluation resulted in a NIC will include only the specific

tasks graded NIC, or the combination of the tasks that resulted in the NIC, unless the individual's leadership determines a complete reevaluation is necessary.

7.5.2.4. Equipment Personnel Evaluation (EPE). Equipment evaluations are conducted to ensure technicians meet proficiency requirements. The evaluation must evaluate the technician's ability to determine when a facility should be reported for possible termination of service and under what conditions the equipment/facility can be returned to service. Evaluations should measure the technician's capability to perform standard maintenance practices and troubleshooting processes. Evaluations should be accomplished during UEI Capstone events at the inspector's discretion, unless prescribed by a formal agreement. (T-1)

### 7.5.3. Conducting Evaluations.

7.5.3.1. Evaluators. Evaluations will be conducted by either a MSgt, work center supervisor, or 7-level technician as long as the evaluator is not the individual's trainer. Evaluators must make careful observations of actions taken to accomplish the process being evaluated and each evaluator shares the responsibility for safe mission conduct with the individual being evaluated. Whenever an evaluator observes a breach of security, safety, discipline or procedure during the evaluation, the evaluator will take immediate corrective action to ensure mission operations, security, and safety. Evaluators can serve as safety observers if they meet all safety requirements.

7.5.3.2. Before the Evaluation. Before the evaluation, evaluators must analyze and select tasks to be evaluated based on the type of evaluation, mission requirement, trend analysis indicators, training management visits, system performance data (metrics), previous evaluations done in the work center, and other management indicators requiring special emphasis. Evaluators then select tasks not previously evaluated in the work center of which at least two-thirds are performance-based and the remaining third are common knowledge core tasks as identified in the ITP. For UTC Personnel Evaluations, the evaluator will assess a minimum number of tasks to ensure proper pre-deployment, employment, and redeployment of the assigned UTC. These tasks will be selected from the individual's Training Business Area (TBA) Individual Training Plan (ITP) and align to the UTC Mission Capability (MISCAP).

7.5.3.2.1. Consider all equipment when selecting tasks for personnel evaluations to adequately assess the work center training program effectiveness. Although individuals may be evaluated on any task(s) they are qualified on, evaluators select processes that are comprehensive (consists of many basic tasks) in nature (e.g., alignments). Usually, actionable events or jobs tracked in IMDS fulfill this requirement.

7.5.3.2.2. Select alternate tasks to avoid the need to reschedule an evaluation when operational requirements do not permit completion of planned evaluations.

7.5.3.2.3. Brief the technician on the tasks to be evaluated, the rating/grading criteria, and the performance standards prior to beginning the evaluation. Evaluators focus on the evaluation process, not the specific evaluation steps the individual must accomplish to pass. Emphasize that the goal is to determine the effectiveness of the

work center's training program, not to pass the evaluation. The evaluator must advise the technician of the following:

7.5.3.2.3.1. The evaluation starts when the technician begins the task, or portion of the task to be evaluated, and is completed when the entire task or previously determined portion of the task is finished.

7.5.3.2.3.2. All maintenance actions performed are subject to evaluation.

7.5.3.2.3.3. Safety and security should not be compromised for any reason.

7.5.3.2.3.4. All detected errors during the evaluation will be used to calculate an overall award of Complies (C), Complies With Comments (CWC), or Not In Compliance (NIC).

7.5.3.2.3.5. The technician must notify the evaluator of applicable information that could affect the task evaluation. This includes any Previously Complied With (PCW) task(s)/step(s) (i.e. a setup task for tactical equipment requires driving a ground rod, however the evaluation is conducted in a bay, so the technician hooks to a facility ground instead). If the technician fails to do this, they may be charged with an error for requirements that were omitted during the task performance that were not identified as PCW prior to the evaluation critique.

7.5.3.2.3.6. The evaluator may ask questions or inject a task to determine technician/team knowledge of the task under evaluation. The technician may use technical references to answer any questions.

7.5.3.3. During the Evaluation. Evaluate the process from beginning to end. The process refers to three phases: preparation, task performance, and post completion procedures. Ref. Air Force Maintenance Quality Control Checklist (AFMQCC) 100-1.

7.5.3.3.1. Stop the evaluation if technicians use methods or procedures that could jeopardize safety, reliable environment, violate security or cause system/equipment damage. Task evaluations may be continued (at the evaluator's discretion) after the hazard is corrected.

7.5.3.3.2. Ask questions on the system knowledge, methods, and procedures used by the technician. However, questions should not distract the technician from the task at hand. Questioning before and after task accomplishment is best.

7.5.3.3.3. Assess a technician's task performance according to Attachment 2. Technicians are to accomplish the task independently and without outside assistance unless the task requires multiple personnel as directed by guidance.

7.5.3.3.4. Report Technical Order errors or deficiencies discovered during evaluations according to T.O. 00-5-1. Deficiencies in AFMSIs are reported according to this instruction. The work center will be responsible for correcting deficiencies in LWCs.

7.5.3.3.5. The evaluator may terminate the remaining portion of a task if the technician has demonstrated technical competency. The evaluator cannot terminate all remaining tasks for the evaluation.

7.5.3.3.6. Capture specific examples of how the individual performed various tasks for the report.

7.5.3.4. After the Evaluation. At the conclusion of the evaluation, evaluators will provide an initial out brief to the work center supervisor and the technician. Evaluators will complete and submit a written report IAW Attachment 2.

**7.6. Equipment Evaluations (EE).** The evaluation of systems maintained by the work center will be conducted as part of the AFIS by completing the applicable portions of the self-inspection checklist in the Management Internal Control Toolset (MICT) database. During the UEI Capstone event, the respective IG team will validate and verify the results of the unit's self-inspections. Attachment 4, *Sampling Plan*, can be utilized for equipment evaluations consisting of multiple like items. (T-1)

**7.7. UTC Evaluations.** UTC evaluations will consist of three separate components designed to measure readiness: personnel readiness evaluation, equipment readiness evaluation and acceptance readiness inspection when new or overhauled equipment is received from the manufacturer/depot. The components of the UTC inspection can be accomplished separately or grouped together into one evaluation depending on availability of equipment and personnel. If grouped together, there will only be one report versus separate reports for each equipment end item/person. (T-1)

7.7.1. Frequency of evaluations. The intervals are as follows:

7.7.1.1. UTC personnel. When assigned to a UTC or once every 24 months if already assigned to a UTC. Number of tasks evaluated is at the discretion of the evaluator, but should be UTC readiness oriented.

7.7.1.2. UTC equipment. Pre-deployment, post deployment, and once every 24 months beginning from last post deployment inspection if not deployed.

7.7.1.3. UTC acceptance. As required when equipment is received from the manufacturer or depot.

7.7.2. UTC Personnel Evaluations (UTC PE). Refer to paragraph 7.5.2.2. for UTC Personnel Evaluation information. Refer to paragraph 7.5.3. through 7.5.3.4. for evaluator selection criteria and procedures for conducting UTC PEs. **Note:** These evaluations can be accomplished in conjunction with the initial personnel evaluation and/or replace the initial personnel evaluation. If an individual is permanently reassigned to another UTC or the primarily assigned UTC has major changes (e.g., equipment replacement, new tasks identified) another UTC PE is required.

7.7.3. UTC Equipment Evaluations (UTC EE). UTC equipment evaluations assess mission readiness against the UTC MISCAP and ensures mission reliability. UTC EEs are completed on all equipment assigned to UTC-based organizations whose primary mission is to deploy. These evaluations are intended to ensure that equipment is operating within the same capabilities as reported in SORTS/ART. The evaluations can be accomplished during field training exercises and other internal training opportunities when available. Team UTC EEs are encouraged. These evaluations do not apply to UTCs that do not have an equipment/technical component.

7.7.3.1. UTC EEs should include highest order PMI and below to evaluate that equipment is operating within tolerances in accordance with governing technical orders/instructions, manuals, and/or COTS documentation.

7.7.3.2. Inspections should also evaluate that known equipment limitations or malfunctions at the time of inspection are being accurately reported in the Integrated Maintenance Data System (IMDS) and/or required reporting tool.

7.7.3.3. UTC evaluations must be conducted by qualified 5-level or higher. After completion, results must be reviewed by UTC Team Lead.

7.7.4. UTC Acceptance Inspections (UTC AI). UTC acceptance inspections will ensure that system(s) being accepted is/are within full operational capability IAW applicable T.O.s, T.I.s, manuals, and/or COTS documentation and documented on applicable acceptance paperwork. UTC AIs will also include completing a full inventory of all equipment supplied by the manufacturer or depot. These inventories will be completed on AFTO Form 470, *Electronic Set Inventory Checklist*, AFTO Form 471, *Electronic Set Inventory Checklist Configuration Data*, and AFTO Form 472, *Electronic Set Inventory Checklist Completion Data*.



## Chapter 8

### WORK CENTER SAFETY

**8.1. Introduction.** AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*, is the primary safety guidance for Air Force personnel. AFI 91-202, *The US Air Force Mishap Prevention Program*, outlines other safety program requirements and management information.

**8.2. Lockout/Tag Out (LOTO).** LOTO will be accomplished IAW system T.O. requirements outlined in AFI 91-203, and will be followed if a completed Job Safety Analysis (JSA) or Bioenvironmental Engineering's (BE) occupational and environmental health (OEH) risk assessment survey has determined the need for a more extensive LOTO program.

**8.3. Electrostatic Discharge (ESD).** Refer to T.O. 00-25-234-WA-1, *General Shop Practice Requirements For The Repair, Maintenance, and Test of Electrical Equipment*, [Chapter 7](#), for ESD requirements.

**8.4. Additional Requirements.** Individual MAJCOM supplements for AFI 91-203, or for AFI 91-202, may levy additional safety requirements.

**8.5. Ground and Lightning Protection.** Grounding, Bonding, Shielding, and Lightning Protection Subsystems. Grounding, bonding, and shielding are approached from a total system concept by the DOD. T.O. 31-10-24-WA-1, *Installation Practices -- Comm Sys Grounding, Bonding, and Shielding*; T.O. 31Z3-822-2-WA-1; MIL-STD-188-124, *Grounding, Bonding and Shielding for Common Long Haul/Tactical Communication Systems Including Ground Based Communications-Electronics Facilities and Equipment*, and MIL-HDBK-419A, *Grounding, Bonding, and Shielding for Electronic Equipment and Facilities*, layout the requirements of the subsystems.

8.5.1. Lightning Protection Subsystem (LPS) consists of a network of conductors which provide a nondestructive path to earth ground (EES) for lightning energy. Reference MIL-HDBK-124 for an explanation of lightning and its effects; and NFPA 78 for design requirements for lightning protection of facilities.

8.5.2. Inspection Requirements. Ensure Base Civil Engineer (BCE) performs facility grounding and lightning protection checks according to AFI 32-1065, *Grounding Systems*. Ensure work center facility managers and safety monitors perform physical/visual grounding and lightning protection inspections as part of PMIs and required site inspections. This includes mobile/transportable systems when operated at their garrison location.

**8.6. Climbing.** Work centers are required to adhere to program requirements IAW AFI 91-203.

## Chapter 9

### TRAINING MANAGEMENT

**9.1. Introduction.** Skilled and trained personnel are critical to the AF in providing a strong national defense capability. The AF OJT Program provides training for personnel to attain knowledge and skill qualifications required to perform duty in their specialty. All training will be conducted IAW AFI 36-2201, *Air Force Training Program* and AFI 36-401, *Employee Training and Development*.

**9.2. Program Responsibilities.** Work Center training requirements are available in AFI 36-2201, [Chapter 6](#).

9.2.1. Training Tracking and Documentation. All 1C8 personnel training will be tracked in the TBA except for ancillary training.

9.2.2. All AF required ancillary training will be tracked in Advanced Distributed Learning Service (ADLS) unless otherwise specified by program guidance.

9.2.3. All non-AF required ancillary training will be tracked in an AF-approved AIS such as IMDS. **Note:** AFRC/ANG are authorized to track ancillary training using ARCNet/ATMT.

**9.3. Climbing Training Requirements.**

9.3.1. Guidance for Technicians with Climbing Training. Climbing requirements are available in AFI 91-203, [Chapter 30](#).

9.3.2. Guidance for Technicians without Climbing Training. Technicians in career fields where climbing is required and do not receive initial climbing training in an apprentice course will receive initial training from a qualified training certifier. Certification will be limited to the type of structures required to accomplish work center task requirements.

9.3.3. Certification Resources. Installations without a climbing certifier will use an alternate source for climbing certification (e.g., AF Mobile Training Team, local climbing courses, E&I, Cable and Antenna Teams, SMT, etc.).

## Chapter 10

### LOGISTICS, LIFE CYCLE AND PROJECT MANAGEMENT

**10.1. Introduction.** This chapter provides logistics life cycle management procedures for mission systems and equipment. It is intended to assist and direct managers in a systematic approach to resolving mission systems and equipment sustainability problems and making critical logistics decisions. The chapter provides framework and elements to establish sustainability processes for mission systems and equipment support.

**10.2. Air Force Centrally Supported Equipment/Systems.** Centrally supported equipment/systems are managed by a PMO according to AFI 63-101/20-101. The PMO is responsible for the equipment's logistics life cycle management and OSS&E according to AFMCI 63-1201, *Implementing Operational Safety, Suitability and Effectiveness and Life Cycle Systems Engineering (LCSE)*.

**10.3. Non-Centrally Supported Equipment/Systems.** The PMO does not manage non-centrally supported equipment. For this type of equipment, the procuring activity (i.e., MAJCOM, unit, etc.) is responsible for all life cycle sustainment planning and OSS&E. Effective logistics life cycle management for both centrally supported and non-centrally supported equipment is essential to meet mission requirements.

**10.4. Life Cycle Management Plans.** Whether purchased for AF, MAJCOM, base or unit use, all mission systems and equipment will have a Life Cycle Management Plans (LCMP). MAJCOM/Base/Unit acquired COTS/GOTS systems and equipment will document the sustainment support strategy in an LCMP. The LCMP starts from the high-level logistics support strategy and becomes more refined. By the Production and Deployment phase (JCIDS - Milestone C) or Build and Test phase (IT Lean Reengineering - Test Readiness Review 2), the LCMP will be very detailed.

10.4.1. In accordance with AFPAM 63-128, *Integrated Life Cycle Management*, as a minimum, managers must consider the following LCMP sustainment elements to help manage, control, sustain, and dispose of mission systems and equipment:

- 10.4.1.1. Sustainment/Systems Engineering
- 10.4.1.2. Design Interface
- 10.4.1.3. Supply Support
- 10.4.1.4. Maintenance Planning and Management
- 10.4.1.5. Support Equipment/Automatic Test Systems (SE/ATS)
- 10.4.1.6. Facilities
- 10.4.1.7. Package, Handling, Storage, and Transportation (PHS&T)
- 10.4.1.8. Technical Data Management/Technical Orders
- 10.4.1.9. Manpower and Personnel
- 10.4.1.10. Training
- 10.4.1.11. Computer Resources Support

#### 10.4.1.12. Protection of Critical Program Information and Anti-Tamper Provisions

**10.5. MAJCOM Responsibilities.** MAJCOMs must ensure adequate logistics support is available for sustained operations for MAJCOM-acquired COTS/GOTS systems and equipment. MAJCOMs will:

10.5.1. Develop approved procedures necessary to procure MAJCOM/base/unit systems/equipment.

10.5.2. Develop a LCMP for MAJCOM-acquired COTS/GOTS systems/equipment early in the acquisition process (see paragraph 10.4.).

10.5.3. Use the LCMP and budget appropriately for the acquisition and logistics support through all phases of the system/equipment life cycle (concept through disposal).

10.5.4. Provide unit guidance and support concerning system/equipment analysis, reliability, availability, and maintainability programs. The Standard Reporting Designator (SRD) assignment or use of an approved contractor management information system with system/equipment control metrics is critical to standardized data collection.

10.5.5. Perform trend analysis and conduct special studies, when determined necessary, to identify adverse equipment performance and provide feedback to units.

10.5.6. Ensure units are aware of acquisition, C&A, and logistics sustainment requirements. Other key knowledge references include: AFI 10-601, *Capabilities Based Requirements Development*; AFI 63-101; AFPAM 63-128; the Defense Acquisition Guidebook at <https://dag.dau.mil/Pages/Default.aspx>. Details are also available on the Integrated Defense Acquisition, Technology, and Logistics Life Cycle Management Framework link at <https://dag.dau.mil/Pages/acqframework.aspx>.

**10.6. Base/Unit Responsibilities.** Bases/units must ensure logistics support is available for sustained operations for unit-acquired COTS/GOTS systems/equipment. Bases/units will:

10.6.1. Use referenced publications, forms, and MAJCOM-approved procedures to procure base/unit level systems/equipment.

10.6.2. Develop an LCMP for Base/Unit-acquired COTS/GOTS systems/equipment early in the acquisition process (see paragraph 10.4.).

10.6.3. Use the LCMP and budget appropriately for the acquisition and logistics support through all phases of the system/equipment life cycle.

10.6.4. Take prompt action to resolve logistics support problems and request assistance through appropriate channels when necessary.

**10.7. Work Center Supervisor.** Supervisors ensure work center logistics support management responsibilities and work center project coordinator duties are accomplished and appropriately documented. (T-2)

10.7.1. Supervisors ensure support requirements for new systems, programs, and plans are established.

10.7.2. Work centers must also assist in the preparation of the maintenance budget estimate.

10.7.3. Work center supervisors must understand all aspects of work center logistics support programs, and:

10.7.3.1. Appoint a work center project manager for each EI, contractor or self-help project to ensure project manager duties are accomplished.

10.7.3.2. Assign one or more technicians to work with EI project and special maintenance teams. The production work center's commander/superintendent may waive this requirement on a case-by-case basis. However, assigned technicians receive valuable training from the team and can train other work center technicians after the team departs.

10.7.3.3. Work with the functional manager and the production work center's commander/superintendent to resolve issues concerning manpower authorizations and allocations for the work center.

10.7.3.4. Review new work center extended UMD when issued.

10.7.3.5. Help prepare work center manpower change requests.

10.7.3.6. Help prepare work center manpower standard applications or reapplication. Supervisor must be familiar with the work center's manpower standards.

10.7.3.7. Provide budget estimate inputs to the commander/superintendent and monitor work center expenditures.

10.7.4. Develop annual budget estimates and amended estimates.

10.7.5. Review the D04, Daily Document Register, and D11, CRIS2 reports (Commanders' Resources Information System), BQ (Status of Funds), ODL (Open Document Listing), Daily Project Fund Management Record (PFMR)/ Organizational Cost Center Record (OCCR) Update and Reconciliation reports to monitor work center expenditures. Supervisor must be aware of what portion of the maintenance budget was programmed for their use and how much has been expended.

10.7.6. Include support for programmed systems and equipment in budget estimates.

10.7.7. Review support agreements to identify special support requirements. Identify training, equipment, supply, vehicle, additional manpower or other key elements required to provide the support.

10.7.8. Project Coordinator Responsibilities. Work center project coordinators act as the work center focal point for all matters concerning the assigned project.

10.7.9. Ensure projects are accomplished with minimum difficulty and the work center can support systems or equipment programmed for installation or major modification.

10.7.10. Work closely with the program office, EI (Engineering & Installation) engineers, and EI teams.

10.7.11. Participate in site surveys and provide technical advice to the EI or contractor team, work center, commander/superintendent, and the program office.

10.7.12. Coordinate with other work center project coordinators to identify and resolve conflicts (such as storage space, power requirements or programmed equipment locations).

10.7.13. Provide continuity of logistics support preparations for the project.

10.7.14. Review EI project packages and amendments.

10.7.14.1. Initiate engineering change requests with an AF Form 1146, *Engineering Change Request/Authorization*, according to T.O. 00-33D-2002-WA-1, *Engineering Installation Activities Management*, for necessary changes to the project for deficiencies noted in the project package.

10.7.14.2. Identify changes and deficiencies before the installation begins to ensure timely project completion and to prevent delays and work stoppages during installation.

10.7.15. Identify all enroute, field training documents, and other formal training required to support programmed systems and equipment.

10.7.16. Coordinate with the EI project team to obtain required technical data, test equipment, special tools, other support equipment, training, manpower, and so forth.

10.7.17. Coordinate with the work center test equipment monitor to ensure calibration capability is established for new test equipment authorized for programmed systems and equipment.

10.7.18. Appoint technicians to work with the EI project team, monitor progress of the project, and participate in systems or equipment acceptance tests.

10.7.19. Use Cyberspace Infrastructure Planning System (CIPS) to document project actions per T.O. 00-33D-3003-WA-1, *Methods and Procedures - Managing the Cyberspace Infrastructure with the Cyberspace Infrastructure Planning Systems (CIPS)*.

**10.8. Modification Management.** A modification proposal is a recommendation to change the operation, use or appearance of AF centrally supported equipment/systems. Modifications, whether temporary, permanent or for safety, to mission equipment/systems are explicitly prohibited without MAJCOM/OSS&E authority approval. Submit modification requests via change management process: (T-1)

10.8.1. AF Form 1067 Process. The AF Form 1067, *Modification Proposal*, is required for a specific improvement to maintenance or operation. The process begins with the initiator, who fills out the Form 1067, gains base approval, and then sends to the MAJCOM for initial validation. The form and request are then routed through the coordination chain.

10.8.1.1. Upon MAJCOM approval, the 1067 request is routed to the appropriate Lead Command.

10.8.1.2. Lead Command will validate the request and route to the appropriate Program Manager (PM).

10.8.1.3. The PM, with assistance of equipment specialists and engineering, will review the technical validity and OSS&E impact of the request and make a determination to implement or deny the request. **Note:** For more information on permanent and temporary modifications, see AFI 63-131.

## Chapter 11

### MATERIEL MANAGEMENT

**11.1. Introduction.** Materiel management is critical for mission accomplishment. Every person is responsible to manage and control all assets in the most cost effective and efficient manner.

11.1.1. Supply Discipline. Supply discipline as stated in AFI 23-111, *Management of Government Property in Possession of the Air Force*, “is everyone’s responsibility.” Supply discipline means to do everything in your power to do your job with minimum cost to the AF.

11.1.1.1. Supply discipline/materiel management not only applies to not spending money when you don’t need to, but also making sure equipment and supplies are properly accounted for, protected from loss or damage, used for their intended purpose, and returned to the supply system or disposed of properly when no longer needed. This includes sending items to Defense Logistics Agency Disposition Services (DLADS).

**11.2. Logistics Readiness Squadron (LRS) Liaison.** The LRS liaison coordinates with support agencies and assists work center personnel by expediting all supply transactions. The LRS liaison is the primary liaison between the work center and LRS/supply activities. Refer to AFMAN 23-122, *Materiel Management Procedures*, and T.O. 00-20-3.

11.2.1. LRS Liaison Responsibilities. The commander/superintendent (or applicable level of responsibility according to local OSS organizational structure) provides written procedures and guidance to ensure the LRS liaison has the responsibility and authority to function successfully. The LRS liaison duties may be completed as an additional duty by work center personnel if the unit does not have a designated liaison. The LRS liaison will: (T-1)

11.2.1.1. Coordinate with the LRS to set up organizational codes, shop codes, and delivery destinations to receipt for property (e.g., issues and due-out releases), and to process serviceable and unserviceable turn-ins.

11.2.1.2. Maintain close relations with the LRS and/or the applicable Logistics Support Center (LSC) to ensure Mission Capable (MICAP)-reportable items are reported and non-mission capable supply requirements are satisfied. Ensure correct use of Force Activity Designator (FAD), Urgency of Need Designator (UND), and requisition priorities. Be familiar with LRS after-hours procedures.

11.2.1.3. Set up procedures to route, store, and control repair cycle assets and act as the repair cycle monitor to include Due In From Maintenance (DIFM), Awaiting Parts (AWP), and Equipment Inoperative for Parts (EIP) for the production work center. Ensure proper management of repair cycle assets.

11.2.1.4. Act as the monitor for the work center Low Density Level (LDL) requests. The request will be completed using format designated and submitted through the LRS to the 439 SCOS [439SCOS.GWM.LDL@us.af.mil](mailto:439SCOS.GWM.LDL@us.af.mil) for coordination/approval. Additional information can be found at <https://www.my.af.mil/gcss-afbvpcp/USAF/ep/browse.do?programId=t88B4F00B35113C4D01355344A57D09D&channelPageId=sF575FC8E256A5E6A01256F8D9872016E>

11.2.1.5. Coordinate with the LRS to ensure all required TCTO kits and time change items are promptly requisitioned and delivered to the production work center.

11.2.1.6. Coordinate with the LRS to ensure TCTO actions are accomplished on supply controlled spares.

11.2.1.7. Serve as Turn-Around Monitor (TRN) monitor.

11.2.1.8. Advise the production work center on the use of repair cycle asset initial issue procedures.

**11.3. General Materiel Management.** Supervisors ensure cost-effective mission support through the proper use and management of supply assets, support equipment, and local purchase materials.

11.3.1. Supervisor Responsibilities. Supervisor will:

11.3.1.1. Comply with the Precious Metals Recovery program according to AFI 23-101, *Air Force Materiel Management*, para. 5.3.3.4.4.

11.3.1.2. Use IMDS to requisition parts directly whenever possible.

11.3.1.2.1. Use the direct call-in method between the work center and LRS customer service/demand processing when IMDS is not available.

11.3.1.2.2. Use AF Form 2005, *Issue/Turn-In Request*, AF Form 2413, *Supply Control Log*, or any other control register to document requests for direct demands on supply. Automated supply log from IMDS is authorized. Verify UND "A" and "B" requests prior to call-in.

11.3.2. Ensure repair cycle assets are properly managed.

11.3.2.1. Notify the DIFM monitor of status changes for assets kept in the work center.

11.3.2.2. Process repaired assets and review associated NRTS paperwork according to T.O. 00-20-3.

11.3.2.3. Process repairable property under warranty or guarantee according to T.O. 00-20-3, T.O. 00-35D-54-WA-1, *USAF Deficiency Reporting, Investigation, And Resolution*, and Air Force Joint Manual (AFJMAN) 23-215, *Reporting of Supply Discrepancies*.

11.3.2.4. Submit TRNs according to T.O. 00-20-3 and AFMAN 23-122, para 4.3.5.

11.3.2.5. Coordinate with LRS to ensure RSP assets requiring functional checks are identified. Notify LRS when functional checks are completed.

11.3.3. Submit deficiency reports or reports of discrepancy when deficient materiel is received according to T.O. 00-35D-54-WA-1. For items not addressed in T.O. 00-35D-54-WA-1, follow the manufacturer's instructions.

11.3.4. Monitor and control bench stock according to AFMAN 23-122, para 5.3.12.4.

11.3.5. Review applicable Allowance Standards (AS) to identify additions, deletions, and changes to work center support equipment authorizations. Perform AS review semi-annually. Submit recommended changes according to AFMAN 23-122, para 5.4.2.

11.3.6. Ensure TCTO kits are correct and complete when received from the LRS. (T-1)



11.3.7. Notify equipment custodians when TCTO actions result in equipment stock number changes and initiate AFTO Form 22, *Technical Manual (TM) Change Recommendation and Reply*, as applicable. (T-1)

11.3.8. Identify preplanned items, time change items, and TCTOs. Complete required actions when scheduled. (T-1)

11.3.9. When authorized by the commander/superintendent (or applicable level of responsibility according to local OSS organizational structure), establish and manage work order residue. Maintain a list of items on work order residue and develop procedures to encourage consumption of work order residue prior to using bench stock.

11.3.10. Develop written guidance to monitor and control shop/operating stocks according to AFI 23-111.

11.3.10.1. For explanatory purposes, shop/operating stocks are those items (e.g., Government Services Administration (GSA) purchased cable stocks, connectors, hardware, etc.) purchased with AF funds to fulfill mission requirements (e.g., PMIs, equipment maintenance, jobs, etc.) that cannot be loaded on bench stock or other accounts.

11.3.10.2. Establish procedures covering part number, purchasing information, condition, etc.

11.3.10.3. Ensure items critical to deploying equipment are stocked, maintained, and secured. These items should not be used for in-garrison requirements.

11.3.11. Ensure the equipment custodian completes and updates the applicable report to address incoming or outgoing equipment/systems when Engineering Installation (EI) or self-help installation or removal projects are complete.

11.3.12. Ensure forward supply point assets are managed according to AFMAN 23-122, para. 5.3.7.

11.3.12.1. Comply with ESD storage procedures according to AFI 23-101, para. 5.3.3.4.3.

11.3.12.2. For AF-supplied/depot-supported systems, ensure that all spare assets supplied during installation or modification are brought to record and added to forward supply point.

11.3.13. Return all useful consumable and non-consumable materials to the LRS/Materiel Management Activity IAW AFMAN 23-122, [Chapter 6](#), para. 6.2.3.4.

11.3.14. Coordinate with the local LRS, Equipment Accountability Officer (EAO), and work center personnel to identify deploying assets.

11.3.14.1. Identify all deploying assets to the applicable base-level ECO upon receipt of mission tasking order during the pre-deployment actions. For supply assets, follow the LRS procedures.

11.3.14.2. Ensure lists of deploying assets accompany the UTCs and the deploying equipment custodian to the Area of Responsibility (AOR). Start asset transfers as soon as

possible depending on the AOR policy and mission-tasking instructions. Custodians will complete the required training prior to deploying.

11.3.14.3. Upon return to home station, identify the assets that were returned to the LRS and ECO.

11.3.15. Dispose and demilitarize designated materials according to AFMAN 23-122, para 6.3 and AFH 23-123, Volume 1, *Materiel Management Reference Information*.

## Chapter 12

### TECHNICAL ORDER MANAGEMENT

**12.1. Introduction.** AF instructions and technical publications are essential for production organizations to function properly and to provide the maintenance activity with accurate information. Technical publications include technical instructions, TOs, commercial manuals, and other specialized publications. Set up and maintain these publications according to AFI 33-360, *Publications and Forms Management*, and T.O. 00-5 series publications.

**12.2. Work Center/Section/UTC Publication Management.**

12.2.1. Supervisor's Responsibilities. A supervisor must: (T-1)

12.2.1.1. Ensure availability and strictly enforce adherence to and compliance with instructions, technical publications, and supplements.

12.2.1.2. Establish procedures for shipping instructions, technical publications, and supplements to support mobility requirements.

**12.3. Technical Manual (TM) Distribution and Control.** This section pertains to necessary actions for the distribution and control of technical orders within the AF. (T-1) **Note:** See T.O. 00-5-1 for Lead TODO responsibilities. 1C8 personnel should only perform TODO duties as a work center-level additional duty. This duty is not intended to be performed as a unit-level additional duty.

12.3.1. TODO Responsibilities. The TODO will ensure the adequacy and accuracy of TO files in the maintenance activity according to T.O. 00-5-1. TODOs will:

12.3.1.1. Provide special attention to all electronically transmitted TCTOs and TOs due to the urgent nature of this type of change.

12.3.1.2. Ensure current methods and procedures TOs, TCTOs, evaluation work cards, work unit code manuals, and other TMs are available to the entire maintenance activity. The primary consideration is availability of TOs, with minimum duplication. For more information on each of these publications, review T.O. 00-5-1.

12.3.1.3. Properly manage all eTool computers and work closely with network representatives to ensure hardware remains fully operational and network requirements are fully met to support real-time updates and the most current status of technical data and TCTOs as required by T.O. 00-5-1. Refer to T.O. 31S5-4-ETool-1, *ETool Setup and Management*, for guidance on set-up and management of eTools.

12.3.2. TO Waiver Requests. Route equipment or policy TO waiver requests to MAJCOM.

**12.4. Local Work cards Sets (LWCS).** LWCs, Job Guides (LJG), Page Supplements (LPS), and Checklists (LCL) are created by the using activity. PMI requirements are normally shown in -6WC work card sets or -6 maintenance technical manuals. Refer to T.O. 00-5-1 for guidance on the development and maintenance of LCWC. (T-1)

12.4.1. COTS Items. Some systems, especially electronic components, are bought COTS and do not have PMIs published in the TO System. In this event, follow manufacturer's

recommended maintenance schedules provided in the technical guidance or complete PMIs per flight commander's/superintendent's direction. Local work cards may be developed.

12.4.2. The commander/superintendent or equivalent will determine if PMIs are to be accomplished in absence of commercial manuals or publications. If there is not a commander/superintendent then this duty will be the responsibility of the unit commander. Refer to T.O. 00-5-1, T.O. 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*. Consider specifications for mean-time-between-failure, operational requirements, corrosion control, and other checks.

12.4.3. AFMC-Supported Equipment/Systems. Locally prepared technical instructions must not be used to circumvent centrally managed responsibilities. Technical data (e.g., TO, COTS manuals, etc.) procurement is AFMC responsibility on AFMC-supported equipment/systems or the appropriate SPO/ PM if it is an enterprise-fielded solution.

12.4.4. To report changes to technical data for centrally managed and procured equipment, use AFTO Form 22, *Technical Manual (TM) Change Recommendation and Reply*.

12.4.5. Non-AFMC-Supported Equipment/Systems. For non-AFMC-supported equipment/systems, technical data must be provided by the Lead Command and applicable Program Management Office. New systems will be fielded with all applicable data.

**12.5. TCI Management.** Time change items management include such items as TCTOs, and other AF or MAJCOM-directed modifications and inspections that provide units with instructions for completing a one-time change, modification or inspection of equipment. (T-1)

12.5.1. Overview. All documentation directing modifications and inspections (with the exception of immediate and urgent action documentation) are considered scheduled maintenance and will be integrated into maintenance planning cycles.

12.5.2. Considerations. Consider concurrent accomplishment of modification and inspection work with other scheduled or unscheduled maintenance actions. When practical, all Peacetime Operating Stock (POS), spares, and RSP assets will be modified before use or installed in equipment.

12.5.3. Applicable Guidance. Manage time changes according to T.O. 00-5-15 and specific MAJCOM instructions. Detailed guidance and codes for processing TCTOs are contained in *Introduction to Integrated Maintenance Data System Central Database (IMDS CDB)*, and AFCSM 21-568, Volume 2.

12.5.4. PMO-Managed Systems. For PMO-managed systems with no SM support, refer to guidance COTS/GOTS manuals/modifications in T.O. 00-5-1.

12.5.4.1. Organizations must establish an alternate method to process TCIs including TCTO data. Complete the TCTO acknowledgment form per TCTO instructions and maintain copy of completed form. Enter data into IMDS when restored for units experiencing a delay.

12.5.4.2. Service bulletin requirements are addressed in T.O. 00-5-1 and T.O. 00-5-15.

12.5.5. TCTO Processing. The Technical Order Distribution Office (TODO) initiates TCTO processing actions according to T.O. 00-5-15.

12.5.5.1. Work center Technical Order Distribution Account (TODA) reviews each incoming TCTO and advises the NCOIC of its applicability.

12.5.5.2. For RMC-maintained ATCALs systems, the RMC will process, complete, and document completion of all TCTOs. For ATCALs systems not maintained by the RMC, the ATCALs work center will interface directly with unit TODO, determine applicability, complete and document TCTOs.

12.5.6. Preplanned and Time Change Procedures. Work center reviews all applicable -6 scheduled inspection and maintenance requirements manuals and -6WC work cards to determine if preplanned and time change items are required. When requirements exist, the work center will provide the appropriate authority the information needed to initiate suspense procedures.

**12.6. FAA Technical Manual Management.** The TODA will ensure FAA Technical Instructions (TI), Joint Orders (JO), System Support Modifications (SSM), and System Documentation Releases (SDR) are current. (T-1)

12.6.1. All FAA documents can be retrieved from ADX Air Force community, [www.adx.faa.gov](http://www.adx.faa.gov).

12.6.2. FAA TIs and JOs need to be reviewed weekly to ensure all SDRs are being utilized. If hard copy, document last review on front cover.

12.6.3. The SSM is used to authorize and deliver hardware, software, firmware, and structural modifications.

**12.7. AFMQCC.** AFMQCCs are guides used to evaluate processes, equipment condition, maintenance quality, and maintenance management effectiveness. AFMQCCs are created using a standardized format. AFMQCCs and the standardized template can be accessed on the AFFSA/XMS SharePoint Page. See Attachment 5 of this document of a listing of AFMQCC's and link to SharePoint.

12.7.1. Policy.

12.7.1.1. AFMQCCs for ATCALs are only published by AFFSA/XMS and can be used in the absence of an Air Force-wide standardized checklist governing a particular process, function, or piece of equipment.

12.7.1.2. AFMQCCs do not prescribe nor establish AF-wide policy.

12.7.1.3. Do not use AFMQCCs to operate, maintain (e.g., tune, align, adjust, etc.) or troubleshoot equipment or processes.

12.7.1.4. Do not limit equipment or management evaluations to the checks in the AFMQCCs. MAJCOMS are authorized to develop supplements to AFMQCCs, supplements to MQCCs, and LMQCCs (see paragraph 12.7.5) to check additional items based on operational needs. Forward proposed revisions of AFMQCCs to the checklist OPR.

12.7.2. Air Force Flight Standards Agency (AFFSA/XMS) Responsibilities. HQ AFFSA/XMS centrally manages the ATCALs AFMQCC program for standard processes and systems (i.e., used by more than one MAJCOM). HQ AFFSA/XMS will:

12.7.2.1. Maintain a record copy of all published ATCALs AFMQCCs.

12.7.2.2. Coordinate new AFMQCCs with appropriate MAJCOMs to determine AF-wide applicability.

12.7.2.3. Assign AFMQCC control numbers as appropriate and forward new AFMQCCs to the Career Field Manager for approval.

12.7.2.4. Publish AFMQCCs and changes as required with approval from the Career Field Manager.

12.7.2.5. Assign Offices of Prime Responsibility for AFMQCCs. **Note:** Lead commands may designate OPRs, and MAJCOM OPRs may appoint unit level OPRs for appropriate AFMQCCs, but MAJCOMs retain overall responsibility.

12.7.2.6. Coordinate annual review of AFMQCCs with appropriate OPRs for continued need, accuracy and currency.

12.7.2.7. Make copies of all current AFMQCCs available on the AFFSA/XMS SharePoint.

12.7.3. AFMQCC OPR Responsibilities. AFMQCC OPRs will:

12.7.3.1. Format AFMQCCs according to paragraph 12.7.7. Ensure updated AFMQCCs are treated as new requirements and routed according to paragraph 12.7.4.

12.7.3.2. Review appropriate AFMQCCs annually for continued need, accuracy, and currency. Provide AFFSA/XMS with changes and updates as required.

12.7.3.3. Evaluate and validate AFMQCCs before forwarding to AFFSA/XMS Policy for approval and publication.

12.7.4. Changes to AFMQCCs.

12.7.4.1. Forward changes (except for minor punctuation and spelling errors) as AFMQCC revisions. To revise an AFMQCC, the complete AFMQCC is re-accomplished and processed in the same manner as new AFMQCCs (see paragraph 12.7.5).

12.7.4.2. Send changes to AFFSA/XMS for consolidation. Comply with MAJCOM and/or local procedures for changing their MQCCs.

12.7.5. Proposed AFMQCCs.

12.7.5.1. MAJCOMs ensure evaluation and field-testing is accomplished for proposed AFMQCCs prior to forwarding them to AFFSA/XMS.

12.7.5.2. Include the projected number of MAJCOMs and users for proposed AFMQCCs.

12.7.5.3. Proposed AFMQCCs not formatted according to paragraph 12.7.7 will be returned for correction, update or local use as appropriate.

12.7.6. Local Maintenance Quality Control Checklists (LMQCC).

12.7.6.1. Use, Approval, and Processing. Commander/superintendent authorizes the use of local MQCCs. If there is no commander/superintendent, this duty will be the

responsibility of the unit commander. Forward local MQCCs with AF applicability through MAJCOM channels for processing according to paragraph 12.7.5. (T-3)

#### 12.7.6.2. Local MQCC Requirements. Local MQCCs:

12.7.6.2.1. Are conspicuously marked or labeled as local MQCCs.

12.7.6.2.2. Are not retained or used after an AF or MAJCOM MQCC is published on the same item of equipment, grouping of equipment (General AFMQCC) or management function.

12.7.6.2.3. Supplement AF or MAJCOM MQCCs if local requirements dictate.

#### 12.7.7. Checklist Format.

12.7.7.1. The title block of the AFMQCC contains the process, function, or nomenclature and noun of the equipment (normally the end item or system). If the title or type of equipment is not the end item, add the end item in parentheses (e.g., ASXXX Antenna Group (AN/GRT-XX Transmitter), etc.).

12.7.7.2. The "item" section of the AFMQCC will contain checks to determine overall performance, operation, and maintenance practices. Each item is limited to one sentence (if possible). Mark each item under appropriate column as either in compliance "Yes", not in compliance "No" or N/A.

12.7.7.3. Do not duplicate individual checklist items currently published in any existing AFMQCC series checklists.

12.7.7.4. Do NOT use specific equipment parameter values (e.g., voltage and frequency measurements, etc.) in AFMQCCs.

12.7.7.5. Provide specific references (i.e., publication number and paragraph) for each equipment parameter and evaluation item.

12.7.7.6. Provide OPR name and office symbol.

12.7.7.7. Checklists are maintained in an electronic word processing format.

**12.8. Air Force Maintenance Special Instructions (AFMSI).** This section establishes the procedures to develop, publish, distribute, implement, file, and dispose of a series of specialized publications for ATCALs equipment. See Attachment 6 of this document for a listing of AFMSI's.

#### 12.8.1. General Information.

12.8.1.1. AFMSIs are not published for use in place of AF technical orders, FAA TIs or FAA JOs.

12.8.1.2. AFMSIs provide a means to issue inspection and servicing requirements, operational performance checks, and special maintenance instructions related to ATCALs equipment for which formal technical order procedures are not published. They may also provide the means to issue optional or temporary modifications on ATCALs equipment. AFMSIs will only be published for equipment that is applicable to more than one MAJCOM.

12.8.1.3. AFMSIs are published only after determining that the supporting Air Logistics Center (ALC) or contracted function cannot produce the required technical data or implement a permanent modification. **Note:** For more information on permanent and temporary modifications, see AFI 63-131.

#### 12.8.2. AFFSA/XMS Responsibilities.

12.8.2.1. Process and publish proposed AFMSIs and changes.

12.8.2.2. Maintain record copies of AFMSIs.

12.8.3. Format. Format modification-type AFMSIs as full-page documents. PMI-type procedures may be formatted as T.O. -6WC work cards (to fit six-hole binders) or as full-page documents, per OPR decision.

12.8.4. New, Revised or Changed AFMSI. Submit proposed AFMSIs, recommended changes, additions or deletions through command channels to AFMSI OPRs in an electronic Word format. AFMSI OPRs will submit approved changes to AFFSA/XMS: [HQAFFSA.XMS@us.af.mil](mailto:HQAFFSA.XMS@us.af.mil).

12.8.4.1. Numbering and Indexing. AFMSIs are numbered in three series. Use the 100-series for instructions of a general nature, 200-series for special maintenance instructions and temporary modifications, and 300-series for inspection, servicing, and lubrication requirements, and operational performance checks.

12.8.4.2. Obtaining AFMSIs. AFMSIs can be accessed on the AFFSA/XMS SharePoint Page. See Attachment 6 of this document of a listing of AFMSIs and link to SharePoint.

12.8.4.3. Implementation. Implement AFMSIs on receipt unless otherwise directed. Schedule modifications, inspections, servicing, lubricating, and operational checks in the same manner as -6 WC T.O.s/TCTOs.

12.8.4.4. Documentation. Document accomplishment of AFMSIs as follows:

12.8.4.4.1. Scheduled Periodic Inspection, Servicing, Lubrication, and Operational Performance AFMSIs. Use the same procedures as those used to document -6WC T.O. work cards.

12.8.4.4.2. Special Maintenance Instructions/Temporary Modifications. Upon completion of the AFMSI procedures, make appropriate entry in approved AIS historical record. For more information on temporary modifications, see AFI 63-131.

12.8.4.5. Rescission of AFMSI. Rescind AFMSI when no longer required or when material is incorporated into the technical order. When an AFMSI should be rescinded, notify AFFSA/XMS through command channels.



## Chapter 13

### TMDE AND TOOLS MANAGEMENT

**13.1. Introduction.** Test Measurement, and Diagnostic Equipment (TMDE) is critical to proper operation and maintenance of mission systems. Out-of-tolerance TMDE can cause mission systems to be misaligned or erroneously declared unserviceable. Man-hours and parts may be expended unnecessarily to restore already serviceable equipment. Personnel who use TMDE must understand their responsibilities and the procedures for the use and care of TMDE. TMDE management is critical to proper operation and maintenance of mission systems. Proper use, handling, storage, transportation, and calibration are essential to ensure TMDE accurately performs its function.

13.1.1. TMDE Definition. Any device used to maintain, evaluate, measure, calibrate, diagnose or otherwise examine materials, supplies, equipment, and systems to identify or isolate actual or potential malfunction/discrepancies/deficiencies or decide if they meet operational specification established in technical publications. Some examples of test equipment are fiber testers, cable tester, spectrum analyzers, etc. See T.O. 00-20-14-WA-1, for details.

13.1.2. Applicability and References. TMDE and Tool management applies to all sections supporting maintenance. All technicians will be knowledgeable of T.O. 00-25-234-WA-1; T.O. 00-20-14-WA-1, *Air Force Metrology and Calibration Program*; T.O. 33K-1-100-1-WA-1, *Calibration Procedure – Maintenance Data Collection Codes and Calibration Measurement Summaries*; T.O. 33K-1-100-2-WA-1, *Material Management Procedures*; AFMAN 23-122, *Technical Manual TMDE Calibration Interval Technical Order and Work Unit Code Reference Guide*; any applicable CMS T.O.s; T.O. 00-25-234-WA-1; T.O. 33-1-27-WA-1, *Logistic Support of Test, Measurement and Diagnostic Equipment*; T.O. 33-1-32-WA-1, *General Instructions for Input Power Wiring of Electrical/Electronic Support Equipment*, and any applicable commercial manuals/guides.

13.1.3. Ensure all work center technicians' document training according to AFI 36-2201. If local tasks are required, ensure tasks are identified, added to the training plan, and training is conducted.

13.1.4. Establish limited calibration requirements whenever possible. This eliminates time spent to calibrate unused functions or ranges and expedites return of the TMDE to the work center. However, before establishing limited calibration, consider the following:

13.1.4.1. Determine the functions and ranges needed for all mission systems and equipment supported by the TMDE in the work center. TMDE needs to be calibrated only for those functions and ranges used.

13.1.4.2. TMDE shared by two or more work centers must be calibrated for the ranges and tolerances required by each using work center.

### 13.2. General TMDE Requirements.

13.2.1. Request priority calibration or repair, through the work center TMDE monitor, only when justified to meet urgent mission requirements. Pick up the TMDE from Precision Measurement Equipment Laboratory (PMEL) as soon as the priority calibration is completed.

13.2.2. Request an extension of the calibration due date, through the work center TMDE monitor, if loss of the TMDE will delay or prevent critical mission accomplishment.

13.2.3. Provide or arrange for training of work center personnel on proper use and care of TMDE, including how to determine calibration condition and limitations.

13.2.4. Advise the work center project coordinator of problems in obtaining or calibrating TMDE needed to install or maintain mission systems scheduled for installation.

13.2.5. Notify commander or designated representative/equivalent when the lack of TMDE impacts completion of the work center's mission.

13.2.5.1. Work centers are required to perform TMDE User Responsibilities according to T.O. 00-20-14-WA-1, paragraph 3.6.

13.2.5.2. Personnel are responsible to provide proper care, handling, cleanliness and transportation of TMDE according to T.O. 00-20-14-WA-1, paragraph 3.8.

13.2.6. Replacement TMDE may be required if PMEL is unable to repair an item of TMDE, or when an item is condemned or designated as obsolete. T.O. 33-1-27, Appendix II, lists obsolete or disposal TMDE items.

13.2.6.1. When new or replacement TMDE is required, work center TMDE monitors:

13.2.6.1.1. Determine if substitute items are acceptable.

13.2.6.1.2. Notify the work center TMDE monitor when TMDE items are turned in to or received from supply.

13.2.6.1.3. Coordinate with the work center TO monitor to obtain applicable TOs for new TMDE and to dispose of TOs for TMDE which has been turned in.

**13.3. General Tool Requirements.** Tool kits are defined as all government-purchased tools, to include tools provided by government-paid contractor, utilized to perform Airfield System/radar maintenance activities (restore/sustain/maintain systems). In this publication, the term "tool" refers to all types of tool kits as well as a basic tool (e.g., Xcelite kits, drill, sockets kits, etc.).

13.3.1. Tool Definition. Tools are any physical or mobile device used to maintain or otherwise examine materials, supplies, equipment, and systems to identify or isolate actual or potential malfunctions or decide if they meet operational specifications established in technical publications.

13.3.2. Objectives. The objectives of the tool management program are to reduce replacement costs through effective control and accountability of assets and minimize unsafe acts.

**13.4. Work Center Tool Management.** This section pertains to the duties and responsibilities at the work center level and applies to deployable tool kits as well as home station kits. Work centers are responsible for the following:

13.4.1. Operating Instruction (OI)/Management Procedures. Create and implement a local operating instruction published by the unit/work center addressing the following areas, as a minimum:

13.4.1.1. Appointment of a tool custodian and alternate in writing. The unit may appoint a unit level tool custodian and alternate if desired instead of individual work center custodians.

13.4.1.2. Procedures addressing effective tool control and accountability.

13.4.1.3. Procedures addressing tracking/using UTC/mobility tool kits.

13.4.1.4. Managing industrial shop machinery tools and accessories/attachments (e.g., Hilti's, band saws, arbors, chucks, portable vise, blades, Pionjars, etc.) that normally do not fit within the tool kit.

13.4.1.5. Establishing tool inventory tracking system that facilitates quick inventory and accountability of tools.

13.4.1.6. Procedures addressing lost, broken or unserviceable tool replacement.

13.4.1.7. Recurring inspection schedule for all tools and tool kits to ensure serviceability.

13.4.1.8. Procedures addressing management of tools with warranties and/or guarantees. Refer to AFI 33-153, *Information Technology (IT) Asset Management (ITAM)*, for IT transactions; T.O. 00-35D-54-WA-1 and T.O. 00-20-3-WA-1 for AFMC-managed systems.

13.4.1.9. Procedures addressing control and management of replacement, expendable and consumable hand tools, and other items contained in tool kits or tools (e.g., connector pins, extraction pins, alcohol wipes).

13.4.1.10. Procedures addressing accountability, control, and use of Electronic Tools (E-Tools). See AFMAN 33-153 for further guidance.

13.4.1.11. Procedures addressing positive control of rags when used in and around the flight line.

13.4.1.12. Procedures addressing management of locally manufactured, developed or modified tools and other support equipment. All locally manufactured, developed or modified tools and equipment must be approved by the commander/designated representative. Examples of these items are test fixtures. This procedure does not apply to local manufacture, modification or design of tools authorized in specific technical data.

13.4.2. Unit Type Code (UTC)/Mobility Tool Kits. Consider the following items when establishing procedures for tracking and using UTC/mobility tools kits.

13.4.2.1. Inspect/inventory and document master tool inventory on UTC/mobility tool kits/tools when opened, prior to resealing for storage or at a minimum, quarterly. If resources do not permit designated UTC/mobility tool kits, garrison kits can be used.

13.4.2.2. Inventory and seal the UTC/mobility tool kits to eliminate use while in garrison.

13.4.2.3. The seal on the UTC/mobility tool kits will show date it was sealed and who completed inventory.

13.4.2.4. Mark the UTC/mobility toolboxes according to AFI 10-403 (e.g., packing list, etc.).

13.4.3. Special Considerations. Consider the following when addressing the management of industrial shop machinery tools and accessories/attachments (e.g., Hiltis, band saws, arbors, chucks, portable vise, blades, Pionjars, etc.) that normally do not fit within the tool kit.

13.4.3.1. Develop master tool inventory listing reflecting all industrial shop machinery tools and accessories/attachments that are not stored within the tool's container. Inventory includes storage location of tool.

13.4.3.2. If a tool has multiple pieces stored within its container, create an inventory of the contents (i.e., Hiltis drill box contains one drill, two 1/2-inch and one 3/4-inch 6-inch bits, and 3 ounces of lubricating oil).

13.4.4. Inventory Tracking System. Consider the following when establishing a tool inventory tracking system that facilitates quick inventory and accountability of tools.

13.4.4.1. Design tool kits to provide a quick inventory and accountability of tools.

13.4.4.2. Develop a simple inventory method, a "show" (e.g., a shadow of the tool) and "know" (knowledge of tool or kit location) concept.

13.4.4.3. Establish tool kit contents for ease of inventory. Tool kit contents will be standardized to the maximum extent possible within functional areas within a unit that have similar missions.

13.4.4.4. Each tool, equipment item or consumable contained in a tool kit that can have an assigned location identified will have one of the following: inlay cuts in the shape of the item, shadowed layout, label, silhouette or drawer/location assignment. No more than one item is stored in a cutout, shadow or silhouette except for tools issued in sets such as drill bits, Allen wrenches, apexes or paired items (e.g., gloves, booties).

13.4.4.5. Utility tool kits (e.g., green tool bags, briefcase kits, etc.) do not have assigned/marked individual tool locations within the utility tool kit; however, the master inventory needs to reflect where the utility tool kits are stored when not in use.

## Chapter 14

### CORROSION PREVENTION AND CONTROL PROGRAM (CPCP)

**14.1. Introduction.** Corrosion is a natural phenomenon that attacks metal by electrochemical action and converts the metal into a metallic compound, such as an oxide, hydroxide or sulfate. Corrosion occurs because of the tendency for metals to return to their natural state. Corrosion, if left unchecked, will progressively degrade an item's strength until its structure can no longer sustain its design load and/or cause malfunctions. Unchecked corrosion can result in excessive maintenance and repair as well as system downtime and product contamination. Everyone needs to understand the corrosion principles of prevention, detection, control, and minimization of corrosion impact on the AF's combat capability.

#### 14.2. Production Work Center Responsibilities.

14.2.1. Ensure effective and timely equipment corrosion prevention and control actions are taken according to T.O. 1-1-700-WA-1, *Corrosion Prevention and Control Ground Communications-Electronic Equipment (C-E)*; T.O. 31Z-10-37-WA-1, *Corrosion Prevention and Protection; General Engineering Technical Manual Corrosion Prevention and Protection*, applicable technical manual/order, and other command instructions.

14.2.2. Ensure all work center technicians complete AFJQS XXXXX-201C, Corrosion Prevention and Control, and document in training record according to AFI 36-2201. If local tasks are required, ensure tasks are identified, added to the training plan, and training is conducted.

14.2.3. Provide accurate and timely maintenance and historical documentation submissions that address the type, extent, and repair/treatment of corrosion on equipment.

14.2.4. If deemed necessary, research, develop, and publish corrosion-control procedures tailored to work center unique needs or highly corrosion prone areas. **Note:** It is important to identify corrosion-prone areas, such as dissimilar metals, fasteners, hinges, latches, rivets, mating surfaces, crevices, faying surface, fillet sealing, spot-welding assemblies, and water entrapment areas.

14.2.5. Possess a thorough working knowledge of corrosion-control policy, procedures, prevention, identification, and treatment.

14.2.6. Modify/change equipment corrosion-control PMIs intervals to meet the corrosion environment in which the equipment will be operating. Some locations may need to clean equipment more frequently.

14.2.7. Ensure local work cards and PMIs for equipment contain clear corrosion-control inspection requirements and procedures. Consider pertinent factors including operational environment, cost, resources, availability, and probability to establish inspection interval.

14.2.8. Coordinate with parent MAJCOM Corrosion-Control Manager for guidance and resolution of corrosion problems beyond the unit's capability to repair. See link to find MAJCOM Corrosion-Control Managers: <https://www.my.af.mil/gcss-af/USAF/ep/browse.do?programId=t6925EC2E5C9A0FB5E044080020E329A9&channelPageId=s6925EC133EFE0FB5E044080020E329A9>.

## Chapter 15

### HISTORICAL RECORD MANAGEMENT

**15.1. Introduction.** This chapter prescribes general requirements and procedures for the administration of maintenance documents, equipment inspection, equipment transfers, and equipment historical data. Work center facility, systems installation, and equipment records are historical documentation that constitute a permanent record of significant maintenance actions or significant changes to the facility or system. Historical records must remain with each equipment or system throughout its life cycle. They are designed to provide technicians and item managers with an accurate portrayal of significant actions, modifications, issues, and overhauls. Maintain system/equipment historical files in the work center in a centralized file according to Air Force Manual (AFMAN) 33-363, or other applicable directives. Dispose of records in accordance with AFRIMS RDS, or other applicable directives. Electronic files are authorized. For classified reporting, follow the approved AF/MAJCOM security classification guide for applicable equipment/system.

#### 15.2. Overview.

15.2.1. Master Inventories. Units will develop master inventories based on shipping, acceptance, catalog, and other applicable documents for AF, MAJCOM or locally procured COTS/GOTS equipment if an AFTO Form 470, *Ground Communications-Electronic Equipment Electronic Set Inventory Checklist*, has not been established per T.O. 00-35D-2-WA-1, *Electronic Set Inventory Checklist for General Communication Electronic (CE) Equipment*.

15.2.2. Historical Records. Historical records, AFTO Form 95, *Significant Historical Data*, IMDS history files or other records are required on all MICAP-reportable equipment, command-supported equipment, and other equipment as designated by the Item Manager/System Manager/Program Manager (IM/SM/PM). IMs determine which items in the MDS-specific -6 manual require historical reporting, and inform the SM so the equipment/system can be identified for reporting.

15.2.3. For ALC-managed systems/equipment, AFTO Forms 95 or IMDS history files are required on all SRD-coded systems/equipment except for COMSEC equipment, command-supported equipment, and other equipment as designated by the IM/SM/PM. The IMs determine on which equipment items specific -6 manual historical reporting is required, and inform the SM so the equipment/systems can be identified for reporting.

15.2.4. For non-ALC-managed systems/equipment, maintain historical records or equivalent information utilizing AFTO Form 95. Each item does not require its own record; you may establish records based on location. Records may be maintained in either electronic or manual forms. See paragraph 15.3.4.2.

15.2.5. All equipment/systems tracked in IMDS must utilize the IMDS history files and record all significant maintenance actions; especially Time Change Items (TCI), Time Compliance Technical Orders (TCTO), and Time Compliance Network Orders (TCNO). In addition, all tactical and mobile equipment requires historical records. The records or record duplicates must accompany the equipment when deployed.

15.2.6. Historical records must accompany equipment sent to depot for repair/overhaul and transferred between units.

15.2.7. For more information, refer to T.O. 00-20-1 **Chapters 1** through 3. These chapters apply to all AF personnel, equipment/systems, and contractors.

**15.3. Work Center Responsibilities.** Work centers ensure facility, systems installation, and equipment records are current and available. Work centers will:

15.3.1. Collect Data. Use IMDS to collect historical data. If IMDS is not available, manually collect the information with enough detail to satisfy IMDS reporting requirements when the system is back up.

15.3.2. Use AFTO Form 95, *Significant Historical Data*, or its automated equivalent.

15.3.3. Create Data. Create historical data upon the issuance of the first TCTO or the occurrence of the first condition or incident requiring data entries.

15.3.4. Maintain Permanent History and Historical Files.

15.3.4.1. Maintain a permanent history on end items listed on the SRD table in IMDS, command-supported equipment designated by the MAJCOM, and other critical systems assigned to the organization that are not tracked in IMDS.

15.3.4.2. Maintain system/equipment historical files in the work center in a centralized file according to AFMAN 33-363, and dispose of in accordance with AFRIMS RDS. Electronic files are authorized.

15.3.4.2.1. Establish and maintain an individual historical file in accordance with AFMAN 33-363, for each designated equipment end item per applicable AF directive.

15.3.4.2.2. Centrally locate historical document files in the documentation activity of the unit possessing/maintaining the equipment (i.e., one file cabinet). Online computer systems are considered centrally located files and authorized.

15.3.4.2.3. Include hard copy or electronic historical document files for subsystems and components in equipment end item files, or maintain them in a separate file.

15.3.4.2.4. Consolidate files for noncomplex items into a single folder or a series of folders. Each individual file will contain historical documents, operational data, maintenance status documents, and reports that reflect current status.

15.3.5. Document Facility Grounding and Lightning Protection Checks. Document BCE facility grounding and lightning protection checks in the facility or historical files. See T.O. 31-10-24-WA-1, for more information. Work centers will submit a 332 to BCE every 21 months per AFI 32-1065, to ensure ground check frequency is maintained. ATCALs work centers will document completion of grounding and lightning protection for facilities that are maintained by the RMCs.

15.3.6. Transfer Documents with Equipment Transfers. Transfer documents with all equipment being transferred to another organization.

15.3.6.1. Ensure all current maintenance and historical documents or computer-generated equivalents accompany the equipment or are forwarded to the new activity electronically,

no later than the same day that the transfer occurs. Records may be burned onto a Compact Disk-Read Only Memory (CD-ROM) or Digital Versatile Disc-Read Only Memory (DVD-ROM).

15.3.6.2. When end items that require separate historical files are transferred as separate units, the applicable documents will be placed in a waterproof envelope and will be securely attached to the component, item or container. If the item is not packaged or crated, the waterproof envelope will be securely attached to the item in a location that will provide the best protection from exposure to the elements and prevent loss during handling and/or mail a copy to the gaining organization to prevent loss.

#### 15.3.7. Use and Maintain TCTO Information.

15.3.7.1. Units using IMDS Automated History Entry (AHE) will print a copy of the AHE record or provide an electronic copy in the applicable e-file. Ensure the history, whether an electronic version on a CD-ROM or paper copy accompanies the equipment/system being turned in or transferred to another unit or going to depot. **Note:** Do not delete the AHE in IMDS if the equipment is being transferred. Instead, transfer the records to the gaining organization according to AFCSM 21-567, Volume 2, *Integrated Maintenance Data System (IMDS) Equipment/ Personnel Transfer*.

15.3.7.2. Ensure equipment/systems gained and loaded into IMDS have the AHE block annotated. See AFCSM 21-568, Volume 2, for details. This allows the TCTO history to be recorded in the AHE.

15.3.7.3. Units using manual AFTO Form 95 instead of AHE will print a copy of the TCTO history from the IMDS TCTO subsystem and attach it to the AFTO Form 95.

15.3.8. Make Entries on Historical Documents. Print or type all entries on historical documents, with the exception of signatures (when available, electronic signatures are authorized). If electronic signatures are not available in IMDS or approved form and the record is maintained electronically, the first name, last name, rank, organization/office symbol will be included.

15.3.9. Resolve Missing/Incomplete Historical Documents. Immediately notify the shipping/losing organization when equipment is received and the historical documents are missing or contain incomplete information.

15.3.9.1. The shipping/losing organization will promptly forward the missing documents or provide all available information for completion of the documents or for initiation of new documents.

15.3.9.2. When the documents cannot be located, and the asset serviceability cannot be readily assessed, contact the applicable system manager through the MAJCOM for instructions.

#### 15.3.10. Maintain Historical Documents on Equipment in Extended Storage.

15.3.10.1. Historical documents can be filed with the equipment or in the centralized file if the equipment is stored at the unit/base level.

15.3.10.1.1. Prepare up-to-date maintenance and historical documentation for each piece of equipment being returned to service.



15.3.10.1.2. When equipment is maintained in extended storage at an organization or activity, the commander may request a waiver through the respective MAJCOM on a case-by-case basis. All approved waivers must be maintained in the equipment's historical documents.

15.3.10.2. When equipment is in extended storage at a depot facility, the responsible inspector will record all applicable technical orders released during the storage period. Equipment containers need not be opened solely to make entries on the maintenance or historical documents.

15.3.10.2.1. For equipment, post these entries on the applicable condition tag or label attached to the item or container for subsequent transfer to the maintenance and historical documents. Forward the TCTO data reflecting current applicability.

15.3.10.2.2. When equipment is removed from storage, the removing organization will review TCTO data, or the maintenance and historical documents, as required, to ensure they are current and accurate, and that all outstanding TCTOs are listed on the applicable forms.

15.3.11. Record Dates in Proper Format. Record all dates on the required forms using 8 digits in the order of year, month, and day. Example: YYYYMMDD, 20160418 for 18 Apr 2016. **Note:** Approved automated forms in IMDS may deviate from this procedure based upon system standards. Hand written formats may follow the IMDS format.

15.3.12. Use Electronic Signatures. Only use electronic signatures to sign off maintenance documentation where the records are protected with passwords and IDs, and authorization is password limited to those individuals as outlined in the 00-20-series technical manuals or other directives.

15.3.13. Process Documents during Depot Maintenance. Ensure the processing of documents during depot maintenance follow the correct procedures.

15.3.13.1. Documents will be processed in accordance with T.O. 00-25-108-WA-1 and the 00-20-series technical manuals. Personnel preparing organic or contract work statements will ensure that the provisions of these technical manuals are included in all applicable maintenance contracts.

15.3.13.2. Maintain records on mobile equipment.

15.3.13.2.1. Maintain one AFTO Form 95 or automated equivalent on each mobile facility to record significant historical data; however, in cases where a facility is comprised of more than one van, an AFTO Form 95 or automated equivalent will also be maintained on each van.

15.3.13.2.2. Maintain an AFTO Form 95 or automated equivalent on each end item of equipment not permanently assigned to a van or facility. **Note:** These items have their own SRD and are listed with a WUC under the van or facility WUC.

15.3.13.2.2.1. If the nonpermanent item is permanently transferred to a van or facility, all its entries will be transcribed to the document for the assigned van or facility.

15.3.13.2.2.2. If a permanent item removed from a van or facility becomes its

own end item, initiation of new documents is mandatory. Document/transfer of pertinent information to the new record and annotate in the original record the removal reason and date.

15.3.13.2.3. A duplicate copy of historical documents may accompany all deployed equipment and appropriate entries will be accomplished on the documents while deployed, if the original historical documents do not accompany the equipment when deployed. Use of a duplicate record is at the unit commander/flight commander's discretion.

15.3.13.2.3.1. If duplicate records are used, when the equipment is returned to the home station, the original documents will be updated to reflect events from the deployment.

15.3.13.2.3.2. If duplicate records are used, both files will match upon deployment.

15.3.14. Follow AFTO Form 470-Series Procedures. Ensure applicable AFTO Form 470-series checklists (if available), automated copies or master COTS inventories accompany equipment items being turned in to supply, transferred to another agency, or deployed. Refer to T.O. 00-35D-2-WA-1 for additional guidance on use of AFTO Form 470-series.

15.3.15. Develop Master Inventories for COTS/GOTS equipment. For COTS/GOTS equipment units will develop master inventories based on shipping, acceptance, catalog, and other applicable documents. When establishing the master COTS inventories, include the initial quantity received, date received, and serial number if applicable, part number, kit number/box number, and description.

15.3.16. Ship Historical Documents. Ship historical documents with equipment or component to disposal, storage activity, next using activity or depot unless otherwise directed.

15.3.17. Maintain Current Drawings.

15.3.17.1. Production work centers will have a Communications Systems Installation Records (CSIRs) Manager appointed by the Commander. Each production work center is responsible to document and maintain outside plant drawings for their area of responsibility according to T.O. 00-33D-3003-WA-1. The local Communication Squadron, Plans and Requirements office maintains and manages the CSIRs. The production work center appointed CSIRs manager, manages and processes CSIRs for inside plant. For legacy paper drawings that have been converted to Visio/Microstation, ensure currency through real-time updates. For legacy paper drawings that have not been converted to Visio/Micro station, ensure currency by manually updating the drawing using the standard color codes (yellow/red/blue), as appropriate, and forwarding the drawing to the base CSIRs manager. See T.O. 00-33D-3003-WA-1 for more information.

15.3.17.2. Ensure an updated copy of facility record drawings needed for system troubleshooting is available in the work center or in an easily accessible central location within the complex.

15.3.17.3. Review paper drawings annually according to T.O. 31W3-10-22, *Signal Manual - Telecommunications Engineering, Outside Plant, Telephone*. Annotate changes

to all copies of affected drawings (i.e., newly installed projects, etc.) during the review or sooner if required. If using CIPS, update automated records to reflect current configuration.

#### 15.4. Completion of AFTO Form 95, Significant Historical Data.

15.4.1. Purpose. The AFTO Form 95 is a permanent document of those significant actions and provides the maintenance organization with a life profile of the item. This information portrays those conditions that could have a bearing on future maintenance of the equipment.

15.4.2. Minimum Documentation Requirements. As a minimum, annotate the installation/removal dates and component accumulated hours, reason for removal, and a brief narrative as to the maintenance performed on the component (i.e., unit overhauled; unit cleaned, inspected and repaired; replaced minor parts, TCTOs completed, and scheduled maintenance complied with).

15.4.2.1. Block 1, MDS or type designator of the weapon system or equipment. Enter the part number assigned to the item.

15.4.2.2. Block 2, "Manufacturer". Enter the name of the manufacturer.

15.4.2.3. Block 3, "Serial Number". When assigned, enter the serial number of the item identified in block 1. Example: 85-1428, 64-14828. **Note:** For systems that have multiple pieces/boxes and no data plate identifying the serial number, prior to establishing the equipment record and associated historical, verify how to identify the item in IMDS with the item manager or Lead Command.

15.4.2.4. Block 4, "Acceptance Date." Enter the date the equipment was accepted by the AF. If unknown, enter "unknown." Generally this is the date the first organization to get the equipment accepts it.

15.4.2.5. Column A, "Date." Enter the date the significant event such as maintenance action or inspection occurred.

15.4.2.6. Column B, "Remarks". Enter the applicable information, using as many lines as necessary, to document significant data.

#### 15.5. Historical Records.

15.5.1. Contents. At a minimum, historical records will contain the following:

15.5.1.1. Applicable AFTO 470 or equivalent.

15.5.1.2. TCTO Compliance if not recorded in IMDS. Document a TCTO noncompliance due to modified or removed systems in which an AF Form 1067, *Modification Proposal*, was approved by MAJCOM. All AF Form 1067 must be maintained in the historical files. Annotate an entry stating a TCTO was received and whether or not it is applicable. If the TCTO is deemed applicable, annotate compliance and when the kits were ordered, if necessary.

15.5.1.3. TCIs when not recorded in IMDS.

15.5.1.4. Removal and replacement of critical subsystems or items or WUC items to include the reason for removal and a brief narrative as to the maintenance performed on the component (e.g., unit overhauled, unit cleaned, inspected and repaired, corrosion,

replaced minor parts, TCTOs completed, DIFM, exchange of end item [controlled substitution)], scheduled maintenance complied with).

15.5.1.5. Remarks concerning special service test equipment installed or removed.

15.5.1.6. Information regarding corrosion: location, extent, and treatment accomplished or required.

15.5.1.7. Circumstances regarding mishaps: extent of damage, repair authority, repairing activity, and date of repair and repairs accomplished.

15.5.1.8. Weather damage to equipment.

15.5.1.9. Data on chemical, biological or radiological contamination: contamination date, type of contaminant, decontamination date, type of decontaminants, and decontamination procedures used. Records will be maintained for the lifecycle of the equipment (including removed/installed parts).

15.5.1.10. Any variance records (e.g., AF Form 1067), approved and not approved, that change the standard configuration according to technical manual/commercial manual or original installation paperwork.

15.5.1.11. If the facility or equipment requires a flight check before commissioning, enter the initial flight check data, together with any significant maintenance actions that were required to pass initial flight check.

15.5.1.12. The removal or decommissioning of end items of equipment and the date the equipment was packed for shipment or the date the equipment was placed in storage as applicable.

15.5.1.13. The removal and replacement of items resulting from excessive contaminants discovered through the Spectrometric Oil Analysis Program (SOAP).

15.5.1.14. Remarks concerning special service tests and special test equipment installation and removal are required.

15.5.1.15. All circumstances regarding accidents or incidents. The extent of damage and repairs accomplished.

15.5.1.16. Significant maintenance action and circumstances involving emergency maintenance accomplished by depot, Engineering Installation Squadrons (EIS), Special Communications Teams or contractor maintenance personnel.

15.5.1.17. TCTO actions, when not under the mechanized system (T.O. 00-5-15, Section II).

15.5.1.18. Date and signature showing that the annual review of historical records was conducted and that they reflect all required actions and are accurate and current.

15.5.1.19. Document chronic problems and any condition or maintenance action that could affect future maintenance of the equipment.

15.5.1.20. Copies of approved system and site specific waivers and deviations.

SCOTT A. VANDER HAMM, Maj Gen, USAF  
Assistant DCS, Operations

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

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**AF Form 2005**, *Issue/Turn-In Request*

**AF Form 2413**, *Supply Control Log*

**AFTO Form 22**, *Technical Manual (TM) Change Recommendation and Reply*

**AFTO Form 95**, *Significant Historical Data*

**AFTO Form 227**, *C-E Depot Maintenance Requirements and Schedule*

**AFTO Form 229**, *Engineering Installation Assistance Request*



**AFTO Form 349**, *Maintenance Data Collection Record*

**AFTO Form 470**, *Electronic Set Inventory Checklist*

**AFTO Form 471**, *Electronic Set Inventory Checklist Configuration Data*

**AFTO Form 472**, *Electronic Set Inventory Checklist Completion Data*

**DD Form 2875**, *System Authorization Access Request*

**FAA Form 8420-22**, *Facility Data Sheet*

### ***Abbreviations and Acronyms***

**ADX**—Aeronautical Data Exchange

**AEF**—Air and Space Expeditionary Force

**AFCFM**—Air Force Career Field Manager

**AFCSM**—Air Force Computer Systems Manual

**AFETS**—Air Force Engineering and Technical Service

**AFEMS**—Air Force Equipment Management System

**AFI**—Air Force Instruction

**AFIS**—Air Force Inspection System

**AFJQS**—Air Force Job Qualification Standard

**AFMETCAL**—Air Force Metrology and Calibration

**AFMPWG**—Air Force Modification Policy Work Group

**AFMQCC**—Air Force Maintenance Quality Control Checklist

**AFMSI**—Air Force Maintenance Special Instructions

**AFQTP**—Air Force Qualification Training Package

**AFRIMS**—Air Force Records Information Management System

**AHE**—Automated History Entry

**AIS**—Automated Information System

**ALC**—Air Logistics Center

**AOR**—Area of Responsibility

**ART**—Air and Space Expeditionary Force Reporting Tool

**AS**—Allowance Standards

**ATC**—Air Traffic Control

**ATCAL**—Air Traffic Control and Landing Systems

**AWP**—Awaiting Parts

**BCE**—Base Civil Engineer

**BE**—Bioenvironmental Engineer  
**C**—Complies  
**C-E**—Communications Electronics  
**C&A**—Contracts and Acquisition  
**CA/CRL**—Custodian Authorization Custody Receipt Listing  
**CDB**—Central Database  
**CDC**—Career Development Course  
**CEG**—Cyberspace Engineering Group  
**CFETP**—Career Field Education and Training Plan  
**CFP**—Communications Focal Point  
**CIPS**—Cyberspace Infrastructure Planning System  
**COMSEC**—Communications Security  
**COR**—Contracting Office Representative  
**COR**—Critical Outage Report  
**COTS**—Commercial Off-The-Shelf  
**CPCP**—Corrosion Prevention and Control Program  
**CS**—Communications Squadron  
**CSIR**—Communications Systems Installation Records  
**CTK**—Composite Tool Kit  
**CTOM**—Centralized Technical Order Management  
**CWC**—Complies With Comments  
**DATCALs**—Deployable Air Traffic Control and Landing Systems  
**DBM**—Database Manager  
**DIFM**—Due In From Maintenance  
**DLADS**—Defense Logistics Agency Disposition Services  
**DPEM**—Depot Purchased Equipment Maintenance  
**DRU**—Direct Reporting Unit  
**EAO**—Equipment Accountability Officer  
**ECU**—Environmental Control Unit  
**EDLM**—Emergency Depot Level Maintenance  
**EE**—Equipment Evaluations  
**EI**—Engineering Installation

**EIL**—Equipment Inventory Listing  
**EIP**—Equipment Inoperative for Parts  
**EIS**—Engineering Installation Squadrons  
**EPE**—Equipment Personnel Evaluation  
**ESD**—Electrostatic Discharge  
**ESR**—Equipment Status Reporting  
**ETRO**—Estimated time of return to operation  
**ETS**—Engineering and Technical Services  
**FAA**—Federal Aviation Administration  
**FAD**—Force Activity Designator  
**FMC**—Fully Mission Capable  
**FOA**—Field Operating Agencies  
**FOD**—Foreign Object Damage  
**GOTS**—Government Off-The-Shelf  
**GSA**—Government Services Administration  
**HQ AFFSA**—Headquarters Air Force Flight Standards Agency  
**IDS**—Intrusion Detection System  
**IG**—Inspector General  
**ILS**—Instrument Landing System  
**IM**—Item Manager  
**IMDS**—Integrated Maintenance Data System  
**IPE**—Individual Personnel Evaluation  
**IPT**—Integrated Process Teams  
**ITP**—Individual Training Plan  
**JCIDS**—Joint Capabilities Integration & Development System  
**JCN**—Job Control Number  
**JDD**—Job Data Documentation  
**JO**—Joint Orders  
**LC**—Lead Command  
**LCL**—Local Work card Checklist  
**LCMP**—Life Cycle Management Plans  
**LCSE**—Life Cycle Systems Engineering

**LCSM**—Lead Command System Manager  
**LDL**—Low Density Level  
**LJG**—Local Work card Job Guide  
**LMQCC**—Local Maintenance Quality Control Checklist  
**LOGDET**—Logistics Detail  
**LOP**—Local Operating Procedures  
**LPS**—Lightning Protection Subsystem  
**LPS**—Local Work card Page Supplements  
**LSC**—Logistics Support Center  
**LWC**—Local Work Card  
**MATAG**—Maintenance and Training Advisory Group  
**MDM**—Mobile Depot Maintenance  
**MDS**—Mission Design Series  
**ME**—Managerial Evaluations  
**MICAP**—Mission Capable  
**MICT**—Management Internal Control Toolset  
**MISCAP**—Mission Capability  
**MITWG**—Maintenance Information Technology Working Group  
**MOA**—Memorandum of Agreement  
**MOU**—Memorandum of Understanding  
**MQCC**—Maintenance Quality Control Checklist  
**MTP**—Master Training Plan  
**MTTWG**—Maintenance Training Technology Working Group  
**NAS**—National Airspace System  
**NAVAIDS**—Navigational Aids  
**NGB**—National Guard Bureau  
**NIC**—Not In Compliance  
**NMC**—Not Mission Capable  
**NOTAM**—Notice to Airmen  
**NRTS**—Not Repairable This Station  
**NSN**—National Stock Number  
**OCCR**—Organizational Cost Center Record

**OI**—Operating Instruction  
**OIL**—Open Incident List  
**OJT**—On the Job Training  
**OPR**—Office of Primary Responsibility  
**OPLAN**—Operations Plan  
**Or**—Operational reliability  
**OSS&E**—Operational Safety, Suitability, and Effectiveness  
**PAD**—Program Action Directives  
**PCO**—Primary Contracting Officer  
**PCW**—Previously Completed With  
**PE**—Personnel Evaluations  
**PFMR**—Project Fund Management Record  
**PHS&T**—Package, Handling, Storage, and Transportation  
**PIWG**—Product Improvement Working Groups  
**PM**—Program Manager  
**PMC**—Partial Mission Capable  
**PMEL**—Precision Measurement Equipment Laboratory  
**PMI**—Preventive Maintenance Inspection  
**PMO**—Program Management Office  
**POL**—Petroleum, Oil, & Lubricants  
**POS**—Peacetime Operating Stock  
**PPLAN**—Programming Plan  
**Q-Flight**—Qualification Training Flight  
**QAP**—Quality Assurance Program  
**RDO**—Redistribution Order  
**RDS**—Records Disposition Schedule  
**REMIS**—Reliability and Maintainability Information System  
**RM**—Regional Maintenance  
**RMC**—Regional Maintenance Centers  
**RPIE**—Real Property Installed Equipment  
**RSP**—Readiness Spares Package  
**SDR**—System Documentation Releases

**SE/ATS**—Support Equipment/Automatic Test Systems

**SITREP**—Situation Report

**SLA**—Service Level Agreement

**SM**—System Manager

**SME**—Subject Matter Expert

**SMR**—Source, Maintenance, and Recoverability

**SMT**—Specialized Maintenance Team

**SOAP**—Spectrometric Oil Analysis Program

**SOR**—Source of Repair

**SORTS**—Status of Reporting and Training System

**SPAWAR**—Space and Naval Warfare Systems Command

**SPECAT**—Special Duty Catalog

**SPO**—System Program Office

**SRD**—Standard Reporting Designator

**SSM**—System Support Modifications

**STS**—Specialty Training Standard

**SRMA**—System Requirements Management Application

**TBA**—Training Business Area

**TCI**—Time Change Item

**TCNO**—Time Compliance Network Order

**TCTO**—Time Compliance Technical Order

**TDY**—Temporary Duty

**TI**—Technical Instructions

**TM**—Technical Manual

**TMDE**—Test, Measurement and Diagnostic Equipment

**TO**—Technical Order

**TODA**—Technical Order Distribution Account

**TODO**—Technical Order Distribution Office

**TRN**—Turn-Around Monitor

**UEI**—Unit Effectiveness Inspection

**UMD**—Unit Manning Document

**UND**—Urgency of Need Designator

**UTC**—Unit Type Code

**UTC PE**—Unit Type Code Personnel Evaluations

**VORTAC**—VHF Omnidirectional Range Tactical Air Navigation System

**WSR**—Weapon Systems Review

**WUC**—Work Unit Code

### *Terms*

**Aerodrome**—A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure, and movement of aircraft.

**Airfield Facilities**—Includes runways, taxiways, aircraft parking and servicing areas, ATC facilities, Airfield Management Operations, ATCALs, aircraft fire suppression and rescue services, airfield lighting systems and systems to hold or stop aircraft (where required).

**Airfield Management (AM)**—A function that conducts airfield inspections and checks for safety and compliance with planning and design criteria. Plans, organizes and directs airfield activities to include airfield construction/repairs, airfield driving program, ice/snow removal operations, Bird/Wildlife control, etc. Procures, maintains, and produces information on safe operation of aircraft through the national and international airspace system such as Flight Information Publications, aeronautical charts and maps, NOTAM, local airfield and navigational aid status, and weather information. Process domestic and international flight plans. Coordinates with base agencies to meet aircrew requirements for billeting, messing, refueling, transportation, and transient aircraft maintenance.

**Airfield Operating Hours**—The hours of airfield operations as published in the MAJCOM Supplement.

**Airfield Operations Instruction (AOI)**—Formerly known as the base flying regulation. The AOI provides guidance regarding airfield and terminal environment activities which directly affect flying operations.

**Air Traffic Control and Landing Systems**—Department of Defense facilities, personnel, and equipment (fixed, mobile, and seaborne) with associated avionics to provide safe, orderly, and expeditious aerospace vehicle movements worldwide.

**Career Field Education and Training Plan (CFETP)**—CFETP is a comprehensive core-training document that identifies: life-cycle education and training requirements; training support resources, and minimum core task requirements for a specialty. The CFETP aims to give personnel a clear path and instill a sense of industry in career field training. It is the formal training contract between the AF Career Field Manager and AETC for formal accession and life-cycle skills training.

**Computer Based Training**—Student conducted training through lessons received at a computer terminal and via computer interaction. Also called CBT.

**Flight line**—Any area or facility including apron, hardstand and ramps on or in which aircraft may be parked, stored, serviced or maintained.

**Go/No Go**—The stage at which an individual has gained enough skill, knowledge and experience to perform the tasks without supervision. Meeting the task standard.

**Ground Controlled Approach (GCA)**—A fixed, mobile, or transportable facility that provides Radar arrival and RFC services within airspace designated by an approach control facility.

**Ground Radar and Airfield Equipment/Systems**—Defined as air traffic control, weather, ground aircraft control and warning Radar systems; related Radar operator training devices; aircraft identification equipment; remoting systems; video mappers; computerized processors; meteorological; navigational aids; and Air Traffic Control radio and communications systems and facilities, fixed and deployable. In this document, “Ground Radar and Airfield systems” are referred to as equipment/system. This type of equipment/system is normally tracked in an AF approved formal accounting/tracking system such as the IMDS, AFEMS CA/CRL or the AFEMS Asset Inventory Management (AIM) system. This equipment generally has defined preventive maintenance inspections and other sustainment programs in place.

**Host Wing Commander**—The individual with ultimate responsibility for operating the airfield.

**Knowledge**—Use of the mental process, which enables a person to recall facts, identify concepts, apply rules or principles, solve problems, and think creatively. Knowledge is not always directly observable. A person manifests knowledge through performing associated overt tasks.

**Local Operating Procedures**—Supplemental procedures issued as letters of agreement, operations letters, operating instructions, memorandum of understanding, squadron regulations, operations plans, or base manual or instructions. Also called LOP.

**Major Command (MAJCOM)**—For the purpose of this instruction, includes all USAF Major Commands plus the Air National Guard Readiness Center, Air Force Reserve Command, Direct Reporting Units, and Field Operating Agencies.

**Master Training Plan (MTP)**—Employs a strategy for ensuring the completion of all work center job requirements by using a Master Task Listing (MTL) and provides milestones for task, Career Development Course completion, and prioritizes deployment/UTC, home station training tasks, upgrade, and qualification tasks.

**Mishap**—A mishap is an unplanned occurrence, or series of occurrences, that results in damage or injury and meets Class A, B, C, D and Class E event reporting criteria IAW AFI 91-204, *Safety Investigations and Reports*, paragraph 1.10. Damage or injury includes: damage to DoD property (excluding normal wear and tear or aging); occupational illness to DoD military or civilian personnel; injury to DoD military personnel on- or off-duty; injury to on-duty DoD civilian personnel; damage to public or private property, or injury or illness to non-DoD personnel caused by Air Force operations.

**Mobility Equipment**—Any item/asset that specifically supports deployable Ground Radar and Airfield Systems equipment. These items/assets include but are not limited to tents, poles, mobility boxes, tables, chairs, and other non-electronic items. Generally, these items/ assets are not tracked in an AF approved accounting system or contained within non-airborne Mobility Readiness Spares Packages (MRSP) or considered War Reserve Material (WRM). These items will be tracked locally.



**Non-airborne Readiness Spares Package (RSP)**—Items other than aircraft, such as communications electronics, vehicles, and bare base systems, that are a transportable set of spares and repair parts required to support planned wartime or contingency operations for a specified period of time pending resupply. RSP is also referred to as MRSP.

**Objective**—A statement that specifies what behavior is to be exhibited, the conditions under which behavior will be accomplished and the minimum standard of performance. Objectives describe only the behaviors that directly lead to or specifically satisfy a job performance requirement. An objective is a statement of instructional intent.

**On-the-Job Training**—Hands-on, over-the-shoulder training conducted to certify personnel in both upgrade and job qualification training. Also called OJT.

**Precision Approach Radar (PAR)**—Radar displaying range, azimuth, and elevation (in relation to a glide slope) normally encompassing an area from 10 to 20 miles on final approach to a position on the runway intercepted by the glide slope.

**Qualified Personnel**—Refers to those individuals with the technical skills required to perform various functions relating to Ground Radar and Airfield equipment/system corrective, inspection, production, and preventive maintenance activities. An individual is considered “qualified” if that individual has been trained to the level necessary to perform specific activities or functions under this technical order. Technical qualifications will vary by function being performed and technical competency required. For example, an individual qualified to troubleshoot a system will require more specialty/technical training than an individual qualified to remove and install a part. An individual qualified to remove and install a part will require more specialty/technical training than a custodian who conducts operational inspections and assessments.

**Qualification Training Package**—An instructional package designed for use at the unit to qualify, or aid qualification, in a duty position or program, or a piece of equipment. It may be printed, computer-based, or in other audiovisual media. QTPs do not require third-party.

**Radar and Tower Coordination System**—A radar and tower coordination system (lights serve as a reminder to the tower controller that an arriving radar controlled aircraft is in a defined location, or at a prescribed position). This system may supplement or simplify the voice coordination between facilities. It does not replace voice coordination.

**Radar Approach Control (RAPCON)**—A fixed, mobile, or transportable radar facility that provides approach control, arrival and RFC services using surveillance radar.

**Recurring Training**—Training provided to periodically review selected current operational procedures and techniques.

**Remotely Piloted Aircraft (RPA)**—Replaces the term —unmanned aircraft as an element of the Air Force’s group 4 and 5 UASs (e.g., PREDATOR, REAPER, GLOBAL HAWK and SENTINEL).

**Review Training**—Training conducted for the purpose of correcting or precluding specific operational deficiencies. Review training is developed based on analysis of performance evaluations, supervisory observations, trends, operational evaluations, etc.

**Skill Level**—The level of qualification within an awarded Air Force specialty, shown by the fourth digit of the Air Force Specialty Code.

**Specialty Training Standard**—An Air Force publication that describes an Air Force specialty in terms of tasks and knowledge which an airman in that specialty may be expected to perform and identifies the training provided to achieve a 3-, 5-, or 7-skill level within an enlisted Air Force specialty. It further serves as a contract between Air Education and Training Command and the functional user to show the overall training requirements for an Air Force specialty code that are taught in formal schools and correspondence schools. Also called STS.

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

**Task**—A unit of work activity or operation that forms a significant part of a duty. A task usually has clear beginning and ending points and directly observable or otherwise measurable processes, frequently but not always resulting in a product that can be evaluated for quantity, quality or fitness in the work environment. A task is performed for its own sake; that is, it is not dependent upon other tasks, although it may fall in a sequence with other tasks in a duty or job array.

**TMDE/Test Equipment**—Any device used to maintain, evaluate, measure, calibrate, diagnose or otherwise examine materials, supplies, equipment, and systems to identify or isolate actual or potential malfunction/discrepancies/deficiencies or decide if they meet operational specification established in technical publications. Some examples of test equipment are fiber testers, cable tester, spectrum analyzers, etc. See T.O. 00-20-14-WA-1, for details.

**War Reserve Materiel (WRM)**—The pre-stocked portion of the total wartime requirement. WRM is materiel required, in addition to mobility equipment and peace time stock, to support wartime activities reflected in the WMP-1, USAF War and Mobilization Plan. WRM represents that part of the war requirement needed in addition to RSP and peace time stock in order to sustain wartime operations until industrial production can meet total wartime needs.

## Attachment 2

### PERSONNEL EVALUATION REPORT WRITING AND SUBMISSION

#### A2.1. Report Writing.

A2.1.1. Determine Results. To determine overall results, evaluators will review notes and captured examples, then validate references. Results are based on overall process performance. Evaluators must:

A2.1.1.1. Document all evaluation task deficiencies including Corrected During Evaluation (CDE) corrections.

A2.1.1.2. Grading Criteria. All deficiencies are tracked for trend analysis using standardized codes to include CDEs. The decision to document a deficiency must be based on published standard practices and procedures, technical data, and other policy guidance.

A2.1.1.3. All validated deficiencies will include a deficiency code and a category rating of either critical (Cat I), major (Cat II); or minor (Cat III) based on Table A2.1.

A2.1.1.4. Rate each task included in the overall evaluation. All deficiencies are then totaled and assigned an overall task result according to Table A2.2, Personnel Evaluation Task Result Matrix. Results are based on the following three-grade system: In Compliance (C); Complies With Comments (CWC), or Not In Compliance (NIC), per Table A2.2. Technicians will be decertified on task(s) rated NIC.

A2.1.1.5. Examples of Deficiencies. Table A2.1 shows what deficiency code may apply to a certain situation.

A2.1.1.6. Examples of Task Results. Table A2.2 shows how to determine the results based on the deficiency codes results for each task evaluated.

A2.1.1.6.1. If a technician sets up an oscilloscope that is overdue calibration and does not use it, document this mistake as a Category III.

A2.1.1.6.2. If the technician sets up an oscilloscope that is overdue calibration and uses the oscilloscope during the evaluation to make measurements according to specifications outlined within a technical order or technical guidance, then the evaluator documents the mistake as a Cat I or II deficiency depending on how serious the impact might be on system or equipment capability by using potentially out-of-tolerance test equipment. Based on the evaluator's assessment using Table A2.1 and Table A2.2, the task result would be either a CWC or a not in compliance (NIC) for that task. A NIC would require the member be decertified on the task and reevaluated. A CWC result allows the supervisor based on the evaluator recommendation to determine if the member requires task decertification. **Note:** Table A2.1 provides an objective method to evaluate errors. Nevertheless, the evaluator's experience and subjective judgment will play a part in the assessment.

A2.1.1.7. Personnel evaluations that contain no (zero) NIC tasks are rated as "Satisfactory." Evaluations that contain one or more NIC tasks are rated as "Unsatisfactory."

A2.1.1.8. Brief the evaluatee and the work center supervisor upon determining the evaluation resulted in one or more NIC task ratings. **Note:** An evaluation that resulted in one or more NIC-rated tasks requires an investigation to determine the root cause of the identified deficiencies for each NIC task, and initiation of the decertification process on those respective tasks. See AFI 36-2201, for more details.

A2.1.1.9. Develop an executive summary that contains a summary of what was evaluated, the overall result (satisfactory or unsatisfactory), a comment about the technician's performance, strengths and weaknesses, and a deficiency trend analysis to include root causes and recommended management actions to prevent recurrence.

**Table A2.1. Task Deficiency Code.**

<b>CODE NUMBER</b>	<b>DESCRIPTION</b>	<b>CATEGORY ASSIGNMENT</b>
P001	Tools or support equipment overdue inspection or calibration and utilized and/or tools or support equipment missing needed parts but used.	I or II
P002	Tools or support equipment damaged by improper use or handling.	I or II
P003	Applicable technical data not on hand, incorrect, out of date or not used.	I or II
P004	Technician not able to perform emergency procedures and/or did not comply with warnings, cautions, and notes.	I or II
P005	Technician lacked sufficient knowledge of the task and/or technician lacked sufficient knowledge of the operation of required support equipment.	I or II
P006	Controlling agencies not advised of changes in mission/equipment status when status changes due to task performance.	I or II
P007	Not all required steps performed (not the entire overall process) or not all steps were performed in the required sequence (not the entire overall process).	I or II
P008	An out-of-tolerance condition or an error in measurement was not recognized and resulted in the equipment not meeting technical data specifications.	I or II
P009	Inability/weakness in explaining weapon safety standards or nuclear related two- person concept requirements.	I or II
P010	Assets/equipment or materials not properly identified for turn in or disposal (this statement includes improper disposal of materials), and/or parts required to fix/clear equipment deficiencies not identified or ordered.	I, II, or III
P011	Not Otherwise Coded Deficiency.	I, II, or III
P012	Tools or support equipment improperly used or handled and/or repairable assets not properly identified for turn-in or repair.	II or III
P013	CFP not notified of changes in equipment status as a result	II or III

	of task performance and/or maintenance documentation not properly completed.	
P014	Lack of coordination with required agencies to ensure a safe, timely, and effective evaluation, and/or work area cleanup actions not accomplished.	II or III
P015	Tools or support equipment overdue inspection or calibration but not used and/or tools or support equipment missing needed parts but not used.	III
P016	Tools or support equipment not obtained before task initiation and/or tools or support equipment not properly stored after task completion.	III
P017	Technician not knowledgeable with emergency procedures and/or safety briefing not conducted when required and/or technician lacked sufficient knowledge of the operation of required support equipment documentation (e.g., sign out, sign off, etc.).	III
P018	Equipment status not checked to determine the existing condition and/or a Control Number (CN) was not obtained for required documentation and/or no method available to document deficiencies discovered during the task performance.	III

**Table A2.2. Task Result Matrix.**

<b>Rule</b>	<b>If the Individual Committed</b>	<b>And</b>	<b>And</b>	<b>The result is</b>
1	No Category I Deficiency	No Category II deficiency	No Category III deficiency.	C
2	No Category I Deficiency	Two or less Category II deficiencies	The accumulation of Cat III deficiencies did not detract from overall satisfactory job performance.	CWC
3	No Category I Deficiency	Two or less Category II deficiencies	The accumulation of Cat III deficiencies caused unsatisfactory job performance.	NIC
4	No Category I Deficiency	Three or more Category II deficiencies	N/A	NIC
5	One or more Category I deficiencies	N/A	N/A	NIC

**A2.2. Report Submission.**

A2.2.1. Document PEs on AFMQCC 100-1, Personnel Evaluation Report, or an automated substitute. Comments and recommendations are made on the evaluation report to eliminate the need for separate correspondence. The report(s) also provide a source for analyzing the effectiveness of the overall training program.

A2.2.1.1. Identify task deficiency codes and results, provide additional comments and references to each deficiency code, provide recommendations, and explain rescheduling actions, if required. Explain management, system or equipment deficiencies not directly reflecting on job performance in a separate special equipment report.

A2.2.1.2. The unit commander must review all evaluation reports with an overall result of unsatisfactory. All other reports are reviewed at commander's discretion.

A2.2.1.3. If an individual's UTC evaluation result is unsatisfactory, the unit commander determines whether or not the individual's SORTS/ART status is changed.

A2.2.1.4. PE reports will be routed only once through the routing chain. At a minimum, include the evaluated individual, individual's supervisor, work center supervisor, and UTM. For reports with an overall result of unsatisfactory, also include the unit commander and flight commander/superintendent. Reports will be closed within 30 calendar days from the date of evaluation as indicated on the AFMQCC 100-1. The closing authority for "Satisfactory" evaluations is the evaluator that performed the evaluation. Closing authority for "Unsatisfactory" evaluations is the unit commander or their designated representative.

A2.2.2. PE date completion will be annotated in IMDS by the work center supervisor or the UTM. Supervisors will annotate PE date completion as a journal entry in TBA.

### Attachment 3

#### ANTENNA PREVENTIVE MAINTENANCE INSPECTION PROCEDURES

**A3.1. Antenna Preventive Maintenance Inspection (PMI)/Inspection Policy.** Proper antenna inspections and maintenance/support are essential to effective management of AF command, control, and communications. Annual antenna PMIs consist of Voltage Standing Wave Ratio (VSWR) and visual/physical inspection of antennas/associated cabling. Annual PMIs will be completed IAW governing publications to include: T.O. 31R-10-5, *Air Force Comm Commands (E-I Standards) - Antenna Systems, Maint, Repair and Testing*, T.O. 31-10-21, *Installation Practices: AF Communications Service (E-I\_ Standard) Antenna System Protection, Stepping, and Splicing of Poles*, T.O. 31-20-24, T.O. 31W3-10-19, *AF Communications Service (E-I Standard) - Standard Instl Practices, Telephone, Outside Plant Instl, Pole Line*, AFMSI 300-1, and applicable commercial manuals. Annual PMIs will be conducted by any qualified technician regardless of AFSC. Units without the capability or technical experience to perform annual PMIs will submit an AFTO Form 229, *Engineering Installation Assistance Request*, IAW T.O. 00-25-108-WA-1 and T.O. 00-33D-2002-WA-1. Forward all AFTO 229s to owning MAJCOM POC.

**A3.2. Antenna PMI Intervals.** Unless specified otherwise, antenna PMIs will be performed annually according to applicable technical manuals and manufacturer's manual. PMIs will be loaded in IMDS IAW **Chapter 3**. PMI deviation requests will be sent to the owning MAJCOM POC coordination.

**A3.3. Inventory Listings.** Load and maintain inventory listings for all antenna systems in IMDS in accordance with individual antenna T.O., T.O. 00-20-2, and AFCSM 21-556, Volume 2, *Introduction to Information Management Distribution System Central Database (IMDS CDB)*.

**A3.4. Leadership Notification.** Notify the commander/superintendent or applicable leadership of any issues that degrade antenna support for communications services.

## Attachment 4

### SAMPLING PLAN

#### A4.1. Common Terms.

A4.1.1. Population. The number of like items assigned to a work center will be used as the population for equipment evaluations.

A4.1.2. Like Items. Like items perform the same basic function; are of the same basic design; and are maintained using the same basic tests and alignments.

A4.1.3. Sample Size. Sample size is the number of items that need to be sampled.

**A4.2. Using a Sampling Plan For Equipment Evaluations.** Count the amount of like items and find the corresponding block under the column titled population size in Table A4.1, Sample Sizes. The corresponding sample size in the sample size column is the minimum number of like items to be inspected. For example, the unit has 25 A-Widgets and 30 B-Widgets which are considered like equipment end items. The total is 55; therefore, the sample size is 19 items. Nine (9) A-Widgets and ten (10) B-Widgets would be inspected over the 18-month timeframe.

**Table A4.1. Sample Sizes.**

Population Size	Sample Size
1	1
2 through 5	2
6 through 10	3
11 through 15	4
16 through 25	6
26 through 50	13
51 through 75	19
76 through 100	20
101 through 150	30
151 through 200	40
201 through 250	50
251 through 300	60
301 through 350	70
351 through 500	100
501 through 1000	200
1001-plus	25 percent of total

**A4.3. Random Sampling.** For other large quantities of materials that need to be sampled, use a sampling size of 25 percent. This sampling rate can be useful to inspect any large population commodity, such as technical order files, publication files, bench stock bins, etc. Rather than inspect 100 percent of a file/commodity, evaluation of an appropriate sample size normally provides a reliable indication of the condition of the total file. This is the minimum required and units can increase this sample size depending on the deficiencies noted. For example, you are performing a self-assessment on training. You determine you have 145 training records consisting of the following: 60 3-levels, 70 5-levels and 15 7-levels. You can either sample 25 percent of the 145 total (approx. 36) or 25 percent of each sub category so 15 3-levels, 18 5-



levels, and 4 7-levels with a total of 37 records. The latter provides a more comprehensive review and ensures you evaluate on skill levels.

**A4.4. Use of a Random Number Table.** To effectively evaluate a random sample of commodity, you can use a random number generator to identify which item in the commodity to evaluate. To determine the specific items or records to be evaluated, develop a way to randomly identify the items. For example: enter the list of items to be evaluated into an Excel spreadsheet. After determining how many need to be inspected by multiplying the total by 0.25, use a sequence generator to help provide the number of an item to be sampled. If you have 16 items, four items need to be sampled, and the sequence generator responds with 3, 5, 13, and 15 or you pull the corresponding number from a hat. Those items corresponding to those numbers are to be sampled. They were randomly selected to be evaluated. There are random sequence generators available via the Internet.

## Attachment 5

## AIR FORCE MAINTENANCE QUALITY CONTROL CHECKLIST (AFMQCC)

**A5.1. Obtaining AFMQCCs.** The most current version of AFMQCCs listed in Table A5.1. can be found at: AFMQCC SharePoint

**Table A5.1. AFMQCC Listing.**

<b>Number</b>	<b>Title</b>
AFMQCC 100-1	Personnel Evaluation Report
AFMQCC 300-1	FRN-44
AFMQCC 300-2	FRN-45
AFMQCC 300-8	GRN-32
AFMQCC 300-9	GRN-30
AFMQCC 300-10	GRN-31
AFMQCC 300-11	FMQ-19
AFMQCC 300-13	GRN-29v1
AFMQCC 400-3	TPX-42
AFMQCC 400-8	FA-10221
AFMQCC 400-10	FA-10095
AFMQCC 400-11	GPN-20
AFMQCC 400-12/13	FSQ-204
AFMQCC 400-14/15	GPN-30
AFMQCC 400-16	MPN-14K
AFMQCC 500-1	GRT-21/22
AFMQCC 500-2	GRR-23/24
AFMQCC 500-3	OK-423
AFMQCC 500-4	GRC-211
AFMQCC 500-5	GRC-171
AFMQCC 500-11	FSC-127a
AFMQCC 500-13	GSH-74
AFMQCC 500-14	MSN-7
AFMQCC 1500-1	TRN-26
AFMQCC 1500-2	TRN-41
AFMQCC 1500-3	TRN-48

**Attachment 6****ATCALSDATCALSAFMSIS**

**A6.1. Obtaining AFMSIs.** The most current version of AFMSIs listed in Table A6.1. can be found at: AFMSI SharePoint

**Table A6.1. AFMSI Listing.**

<b>Number</b>	<b>Title</b>
AFMSI 300-1	Scheduled periodic inspections, ATC
AFMSI 300-6	FSC-127