BY ORDER OF THE COMMANDER
AIR FORCE INTELLIGENCE SURVEILLANCE AND RECONNAISSANCE AGENCY

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Maintenance

AIR FORCE TECHNICAL APPLICATIONS CENTER MAINTENANCE MANAGEMENT

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This instruction implements AFPD 21-1, *Air and Space Maintenance* and provides guidance to the Air Force Technical Applications Center (AFTAC). It provides essential guidance and procedures for effectively maintaining, servicing, and repairing AFTAC equipment. It applies to all personnel assigned to the AFTAC, its detachments, and individual mobilization augmentees. This instruction does not apply to Air Force Reserve Command (AFRC) and other individual reservists administered by Headquarters AFRC or to the Air National Guard. 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 Forms 847 from the field through the appropriate functional's chain of command. Maintain records created as a result of the processes prescribed in this publication in accordance with (IAW) AFMAN 33-363, *Management of Records*, and disposed of IAW the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at **https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**. Contact your supporting records manager as required.

SUMMARY OF CHANGES

This publication has been substantially revised and must be reviewed in its entirety. It has been revised to provide a clearer understanding of responsibilities. Chapter 2 has been rewritten to clarify maintenance responsibilities throughout the organization; Chapter 3 has been renamed to identify the work center directly responsible for maintenance operations; Chapter 4 has been

renamed and rewritten to follow quality assurance procedures outlined in AFI 21-101, Chapter 8; Chapter 5 has been rewritten to include tool control procedures outlined in AFI 21-101, Chapter 10.

Chapter 1

MAINTENANCE MANAGEMENT POLICY

1.1. Introduction. This instruction prescribes Special Electronics Equipment (SEE), Geophysical Equipment (GE), Materials Collection, and Advanced Atmospheric Research Equipment (AARE) maintenance policy and procedures for AFTAC maintenance personnel. It identifies Headquarters responsibility for AFISRA/A4MM. In addition, it prescribes AFTAC/LS maintenance responsibilities. This instruction does not dictate organizational structure.

1.2. Terms. AFTAC systems maintenance is defined as any action taken to restore SEE, GE, Materials Collection, and AARE equipment to operational status, to perform Preventative maintenance routines on equipment, to perform scheduled and unscheduled maintenance, or to install or remove SEE, GE, Materials Collection, and AARE equipment. Computers identified as mission capable (MICAP)/mission critical reportable are governed by this instruction.

1.3. Publications. AFTAC may publish Center instruction(s) for maintenance (e.g., 21-series). Center instruction(s) may supplement guidance from this parent instruction. AFTAC may also publish guidance for Center detachments.

1.3.1. In addition to complying with guidance in this instruction, AFTAC must comply with DoD, Air Force, MAJCOM, and local directives beyond the scope of this instruction (i.e., safety, environmental, training, supply, etc.). For clarification purposes, AFISRA serves as the MAJCOM.

1.3.2. Use of prescribed technical instruction/orders to maintain SEE, GE, Materials Collection, and AARE equipment is mandatory.

1.4. Maintenance Capability. Maintenance capability is AFTAC's ability to maintain its assigned systems and equipment in proper condition. Managers and supervisors must plan/schedule maintenance to ensure personnel are productively employed, ensure personnel have appropriate skill/technical level, and justify enough resources to support a maintenance workload.

1.5. Maintenance Organization. AFTAC/LS is comprised of the Chief of Maintenance, Maintenance Superintendent, Systems Control, Plans and Programs, Logistics Support, Engineering and Maintenance, Material Collection, and numerous work center supervisors and their respective work centers, to include detachments.

1.6. Roles.

1.6.1. AFTAC Chief of Maintenance (COM). The COM defines responsibilities and provides staff support, guidance, and direction to US Atomic Energy Detection System (USAEDS) and AFTAC maintenance elements in accordance with (IAW) the procedures described in this instruction. Maintenance personnel at all levels are primarily responsible to their individual superintendents, commanders, and/or directors for performing the maintenance function in an effective manner.

1.6.2. Systems Control. Systems Control Branch functions in direct support of AFTAC's maintenance operations mission. The branch supervisor provides direct oversight of the Systems Control Center and is the management function which monitors and ensures data

availability, coordinates field operations and maintenance, and performs special field maintenance and support as required to accomplish the unit mission. They are the 24/7 focal point for the assembly, collation, and assessment of significant logistics information and requirements.

1.6.3. Quality Assurance. The Quality Assurance Section is directly responsible to the AFTAC/LS for the implementation of the Maintenance Standardization and Evaluation Program (MSEP), maintenance training support, COM guidance generation, and development of logistic and maintenance processes. They are also tasked with ensuring effective maintenance and management practices are used throughout the maintenance activity.

1.6.4. Chief of Logistics (COL). The COL utilizes the Logistics Support Division to directly support the COM for the maintenance, supply, transportation, documentation, and contract support of AFTAC mission systems. The division oversees the Center's acquisition requirements process by providing guidance, training, and policy development. The division is responsible to provide supply and transportation requirements for both CONUS and overseas units. The division acts as the Contracting Technical Representative and Program Manager for all logistics, maintenance, supply, and transportation contracts. The division provides daily interface with AFTAC customers and the 45th Space Wing.

1.6.5. Geophysical Equipment Maintenance (GEMS). The GEMS Branch is directly responsible to the COM and directs the support to maintenance engineering, depot, and deployable maintenance services to accomplish upgrades or maintenance activities at locations requiring maintenance assistance. The branch provides mobile maintenance repair capability to the COM and the sustainment maintenance section which provides intermediate and depot level maintenance.

1.6.6. Materials Collection. The Materials Collection Systems Branch is directly responsible to the COM for the execution of Mission Area Manager (MAM) tasking related to the materials collection mission to include new system development, operational deployment, and overall network management. The branch exercises functional control over material systems work centers and provides mobile maintenance repair capability to the COM and the sustainment maintenance section which provides intermediate and depot level maintenance.

1.6.7. Maintenance Work Centers. Maintenance work centers are the production elements under the COM and are responsible for accomplishing all maintenance and providing operational status changes as they occur. Maintenance production work centers are supported by and must maintain a close working relationship with the maintenance staff. All 9S100 personnel in maintenance positions are considered traditional maintenance technicians.

1.7. Maintenance Staffing and Utilization.

1.7.1. Select the best-qualified personnel to fill staff and supervisory positions. Refrain from placing retrainees in staff positions as much as possible until their skill level is commensurate with their grade.

1.7.2. Consider the availability of qualified technicians and redundant systems to attain a 100 percent availability to support mission requirements.

1.8. Maintenance Information Systems (MIS). MIS refers to the automated MIS which may include the Sampler Operations and Data System (SODS), Maximo Enterprise Suite, or other established tracking system.

1.9. Contract Maintenance. Accomplish contract maintenance surveillance program duties IAW procurement guidelines and command directives.

1.10. Metrics. The COM may use maintenance management metrics (e.g., operational availability, personnel training status, etc.) to better forecast resources.

Chapter 2

ASSIGNED RESPONSIBILITIES

2.1. Introduction. The following paragraphs provide a summary of objectives, organizational functional relationships, and responsibilities that form the foundation of the AFTAC maintenance management system.

2.2. AFISRA/A4MM. AFISRA/A4MM will:

2.2.1. Perform maintenance management oversight for AFTAC maintenance activities.

2.2.2. Perform maintenance site visits and staff assistance visits (SAVs) as needed.

2.2.3. Provide necessary guidance to Center maintenance personnel.

2.2.4. Coordinate on Center instructions.

2.2.5. Assist Center in correcting maintenance deficiencies as needed.

2.3. AFTAC/LS. AFTAC/LS will:

2.3.1. Ensure all personnel performing AFTAC systems maintenance follow maintenance practices in AF directives, this instruction, Center Instructions, and applicable documents.

2.3.2. Designate a COM, a COL, and Maintenance Superintendent in writing.

2.3.3. Require strict adherence to technical data and all other written management procedures.

2.3.4. Enforce sound material management discipline IAW AFMAN 23-110, *USAF Supply Manual*, and financial management practices.

2.3.5. Ensure life cycle logistics support for Center-acquired systems and equipment to include commercial off the shelf (COTS) systems and equipment.

2.3.6. Establish and maintain system/item management.

2.4. AFTAC/COM. AFTAC/COM will:

2.4.1. Use the procedures in this instruction to achieve the best possible maintenance effectiveness by managing the maintenance activity to meet mission needs in specified time frames.

2.4.2. Direct all field logistics activities through the formulation, publication, and implementation of maintenance management guidance for AFTAC-owned equipment. The number and complexity of maintenance responsibilities dictate that some are handled by staff functions. In those cases, the staff functions act through, or in the name of, the COM.

2.4.3. Ensure an orientation program is established for newly assigned personnel, as needed. The orientation program should augment rather than duplicate the unit orientation program.

2.4.4. Develop and maintain a mobile maintenance repair capability.

2.4.4.1. Perform emergency restoral of failed or degraded facilities, systems, or equipment.

2.4.4.2. During emergency trips to stations, provide training as necessary to local personnel to promote self-sufficiency.

2.4.4.3. Perform system evaluations at stations on a periodic basis to detect potential problems that may require initiating product improvement programs.

2.4.5. Establish procedures for the development, maintenance, and distribution of Plant-In-Place Records (PIPR).

2.4.5.1. Establish procedure to ensure annual reviews of PIPRs by field station.

2.4.5.2. Ensure PIPRs are readily available and distributed to field sites.

2.4.6. Ensure a depot level maintenance submission program is established for assigned equipment IAW TO 00-25-108, *Communications-Electronics (C-E) Depot Support.*

2.4.7. Publish maintenance plans as needed.

2.4.8. Develop and approve maintenance operating instructions (MOI) to delineate maintenance responsibilities. The COM approves quality assurance (QA)-validated MOIs for publication.

2.4.9. Ensure effective training programs are established in production work centers, Systems Control, Logistics Support, Plans and Programs, Materials Collection, and other assigned maintenance staff functions.

2.4.10. Ensure effective safety and radiation protection practices are established IAW Air Force Occupational Safety and Health (AFOSH) STD 48-series, AFOSH STD 91-series, and TO 31Z-10-4, *Electromagnetic Radiation Hazards*.

2.4.11. Ensure review of MIS maintenance documentation is conducted and errors are corrected.

2.4.12. Identify factors which limit (or can limit) the capability of the maintenance activity to meet its mission requirements to appropriate agencies.

2.4.13. Act as approval authority for cannibalization requests. The COM may delegate cannibalization approval.

2.4.14. Review MSEP managerial evaluations that document unsatisfactory task results.

2.4.15. Ensure the following responsibilities are accomplished:

2.4.15.1. Maintenance data collection focal point duties.

2.4.15.2. Corrosion prevention and control program.

2.4.15.3. Maintenance training management to include tower/pole climbing training and fall protection.

2.4.15.4. Consolidation of maintenance staff responsibilities as required.

2.4.15.5. Maintenance management responsibilities.

2.4.16. Establish written restoral criteria in coordination with MAM.

2.4.17. Approve local work cards (LWCs) for Preventative Maintenance Routines. LWCs may expand established procedures, but will not be used to correct errors in TO/TIs.

Publishing LWCs does not relieve units of submitting AFTO Form 22, *Technical Order Improvement Report and Reply*, to correct TO/TI deficiencies.

2.4.18. Establish procedures for the following areas. Note: One or more functions may be consolidated into one instruction for ease of use.

2.4.18.1. Plans and Programs (LSX) responsibility for management of the MIS used within maintenance.

2.4.18.2. Electrostatic Discharge (ESD) Program.

2.4.18.3. Control of Maintenance.

2.4.18.4. Job control number assignment.

2.4.18.5. Test, Measurement, and Diagnostic Equipment (TMDE) responsibilities.

2.4.18.6. Maintenance Training Management.

2.4.18.7. Safety (if not included in unit instruction).

2.4.18.8. Tool control.

2.4.18.9. PIPR management.

2.4.19. Manage antenna maintenance per Attachment 3 and local instructions.

2.4.20. Manage climbing training requirements per Attachment 5 and local instructions.

2.4.21. Use MIS management products to ensure accurate equipment inventories, maintenance data documentation, and equipment status reports (ESRs).

2.4.22. Establish a consolidated contact point to receive problem reports and complaints from supported customers.

2.5. AFTAC/COL. AFTAC/COL will:

2.5.1. Resolve all supply related issues and problems, confirm maintenance supply data and status, forecast supply requirements for maintenance, and participate in maintenance meetings.

2.5.2. Advise senior staff of the overall supply situation as it affects maintenance and recommend ways to improve supply support.

2.5.3. Provide/obtain training and assist work centers on all supply matters (supply function may be delegated).

2.5.4. Establish and maintain a technical publications program per Technical Order (TO) 00-5 series publications.

2.5.4.1. Ensure current method and procedures TO/Technical Instructions (TIs), Time Critical Technical Orders (TCTOs), evaluation work cards, work unit code manuals, and other TO/TIs are available to the entire maintenance activity.

2.5.4.2. Designate a Technical Order Distribution Office to ensure the adequacy and accuracy of Technical Order Distribution Account (TODA) files in the maintenance activity.

2.5.4.3. Review, process, and monitor TO/TI deficiency reports IAW TO 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution*.

2.5.4.4. Review, approve, and process Air Force Technical Order (AFTO) Form 22 IAW TO 00-5-1, *AF Technical Order System*. Forward TO change requests to AFISRA/A4MY for processing. TI changes will be handled by LSLD or CPSD depending on the technique.

2.5.4.5. Initiate and follow up on all correspondence related to the development of new publications.

2.5.4.6. Initiate TCTO/Time Critical Technical Instruction (TCTI) processing actions IAW TO 00-5-15, *Air Force Time Compliance Technical Order Process*.

2.5.5. Ensure life cycle logistics support plans are developed and implemented for unit-acquired COTS systems and equipment.

2.5.6. Ensure the following responsibilities are accomplished:

2.5.6.1. Vehicle management.

2.5.6.2. Technical publications program management.

2.5.6.3. Logistics support responsibilities.

2.5.6.4. Supply warehouse management.

2.6. AFTAC Maintenance Superintendent. AFTAC Maintenance Superintendent will:

2.6.1. Function as an advisor and teacher to maintenance personnel.

2.6.2. Act as the COM when required.

2.7. Maintenance Supervisors. Maintenance Supervisors will:

2.7.1. Know the capabilities and limitations of their work centers.

2.7.2. Ensure work center supervisors have a thorough knowledge of their duties and comply with applicable directives and TOs.

2.7.3. Ensure compliance with maintenance schedules.

2.7.4. Emphasize quality and safety.

2.7.5. Ensure observed or reported maintenance and training deficiencies are corrected.

2.7.6. Maintain a close liaison with the maintenance staff.

2.7.7. Inform the COM of problems that are beyond the maintenance supervisor's capability.

2.7.8. Coordinate the repair and maintenance of assigned equipment.

2.8. AFTAC Systems Associated/Installed on Aircraft.

2.8.1. AFTAC units responsible for maintaining systems associated/installed on aircraft will follow applicable guidance in AFI 21-101 as well as AFISRA and host base supplements to the same.

Chapter 3

SYSTEMS CONTROL

3.1. Introduction. Maintenance operations is the responsibility of the COM. The function will include monitoring data availability as well as coordinating field operations and maintenance in support of mission requirements. Systems Control is the focal point for the assembly, collation, and assessment of significant logistics information and requirements.

3.2. Systems Control will:

3.2.1. Establish a centralized contact point to receive trouble reports and other AFTAC Mission Systems issues.

3.2.2. Direct, monitor, and report all maintenance actions that affect mission equipment status.

3.2.3. Monitor data availability, guide field operations, and coordinate station requests for mission equipment support.

3.2.4. Be knowledgeable of work section responsibilities and procedures.

3.2.5. Ensure support is scheduled, monitored, controlled, and coordinated for maintenance production.

3.2.6. Assemble, collate, and assess significant maintenance information and requirements to enhance the maintenance production effort.

3.2.7. Ensure assigned personnel are trained on duties, responsibilities, and procedures.

3.2.8. Develop procedures to sustain operations in the event of power failure, communications outages, etc.

3.2.9. Keep senior staff apprised of outages (i.e., status, estimated repair time, etc.).

3.2.10. Have a working knowledge of contractor-maintained systems and the procedures to call out the appropriate vendor.

3.2.11. Monitor and control all maintenance actions that create a Problem Report (PR). The COM may direct tracking of non-PR reportable equipment.

3.2.12. Establish an after-duty hours contact point to perform maintenance control duties when a 24-hour work section is not utilized. Provide detailed written procedures for the after-duty hours function.

3.2.13. Maintain status visibility. Automated status visibility programs are encouraged.

3.2.14. Maintain the status of on-call technicians and dispatch them as required.

3.2.15. Notify affected production work section/activities of changes in priorities, plans, and schedules.

3.2.16. Coordinate anticipated mission downtime with the appropriate mission customer or activity and the affected maintenance work center. Coordination may be delegated to the appropriate work center.

3.2.17. Use MIS to initiate and control maintenance actions that change equipment status.

3.2.18. Notify the performing work centers for scheduled TCTOs, time change items, and other anticipated maintenance actions which require TO 00-20 series documentation.

3.2.19. Maintain the status of active and deferred maintenance actions. Reconcile deferred discrepancies with affected organizations.

3.2.20. Approve deferred Preventative Maintenance Routines and ensure inspections are completed ASAP after the cause for deferment is resolved.

3.2.21. Obtain estimated time of return to operations (ETRO) from maintenance technicians.

3.2.22. Monitor all unscheduled maintenance actions if the status of a mission or mission system is affected.

3.2.22.1. Report all problems to the appropriate maintenance work center or organization OPR.

3.2.22.2. Maintain a list of unit OPRs for contractor maintained or contractor operated communications systems.

3.2.22.3. Establish local procedures (e.g., trouble log, shift log, etc.) to document significant events and customer reported jobs that do not require an entry into MIS.

3.2.22.4. Coordinate response/action on problems that affect equipment status with the customer and the appropriate work center or organization OPR capable of resolving the problem.

3.2.22.5. Request applicable OPRs notify Maintenance Management when such problems are resolved, even if resolved by functions outside of the maintenance activity.

3.2.22.6. Follow-up with the work center or organization OPR if the job is not completed by the established ETRO and advise the senior staff of the delay.

3.2.23. Ensure resources are allocated according to job importance and mission requirements and are related to established system, equipment, and circuit restoral criteria.

3.2.24. Provide status briefings to the LS and senior staff.

3.2.25. Manage maintenance on data problems identified by AFTAC Operations Center personnel.

3.2.26. Monitor all mission data streams, including communications circuits, to identify problems.

3.2.27. Direct restoral of data acquisition and transmission capabilities of the field locations.

3.2.28. Support daily operations of the alternate National Data Center (ALTNDC).

3.2.29. Support operations during activation of the ALTNDC and Remote Operations Center.

Chapter 4

QUALITY ASSURANCE

4.1. Introduction. Maintenance quality and equipment reliability is the responsibility of all personnel performing maintenance. The combined efforts of Quality Assurance (QA) personnel, maintenance leaders, and technicians are necessary to ensure high quality maintenance production and equipment reliability. The QA staff evaluates the quality of maintenance accomplished and performs necessary functions to manage AFTAC's Maintenance Standardization and Evaluation Program, which provides an objective sampling of the quality of equipment, the proficiency of maintenance personnel, and the compliance of AFISRA and unit focus areas, programs, and processes. QA personnel are not an extension of the work force and shall not be tasked to perform production inspections. QA serves as the primary technical advisory agency in the maintenance organization, assisting maintenance supervision at all levels to resolve quality problems. The evaluation and analysis of deficiencies and problem areas are key functions of QA that highlight and identify underlying causes of poor quality in the maintenance production effort. Equipment condition and personnel proficiency are validated through the Maintenance Standardization and Evaluation Program and shall be recorded using an approved QA database. Note: The COM will determine the most effective structure and may realign responsibilities under more than one work center or staff function.

4.2. Responsibilities. QA is responsible to AFTAC/LS to perform as the primary technical advisory agency for maintenance and assists work center supervisors in managing the maintenance effort. QA inspectors will have authority to observe, correct, and document maintenance activities. QA personnel will:

4.2.1. Be knowledgeable of work section responsibilities and procedures.

4.2.2. Ensure accomplishment of maintenance support responsibilities.

4.2.3. Ensure personnel are trained on duties, responsibilities, and procedures.

4.2.4. Provide functional systems management, including maintenance practices, for Center-unique systems.

4.2.5. Review MIS management products.

4.2.6. Direct and control authorized cannibalization actions IAW TO 00-20-2, *Maintenance Data Documentation*. When cannibalization is the only option available, identify the end item to be cannibalized and request approval to cannibalize from the COM or designated representative.

4.3. Quality Assurance Superintendent Responsibilities. The QA Superintendent will:

4.3.1. Make recommendations to AFTAC/LS or AFTAC/COM to enhance the quality of maintenance.

4.3.2. Develop and monitor the Maintenance Standardization and Evaluation Program (MSEP) using an approved QA database and provide supervisors access to MSEP data.

4.3.3. Notify the appropriate agencies when deficiencies are found in instructions.

4.3.4. Review maintenance related local Operating Instructions (OIs) and IMTs/forms every 2 years for accuracy and necessity (document these reviews).

4.3.5. Ensure local checklists are reviewed every 2 years for currency and document this review.

4.3.6. Ensure management and special inspections are performed.

4.3.7. Coordinate on all requests for locally manufactured, developed, and modified tools and equipment, and maintain records for approved requests. This includes pictures or drawings and a description of the use for each item. If a TO/TI contains the option of these tools or equipment, QA does not need to coordinate or maintain the records on that tool as long as the tool remains approved by the TO/TI.

4.3.8. Develop Key Task and Routine Inspection Listings (KTL/RTL) in addition to AFISRA listings, if required, in conjunction with the COM and provide copies of approved lists to all affected organizations.

4.3.9. Ensure Acceptable Quality Level (AQL) standards are developed for all tasks including key tasks and routine inspection lists.

4.3.10. Ensure agendas and presentations are compiled for the MSEP Summary.

4.3.11. Designate a Chief Inspector.

4.3.12. Monitor the Self-Inspection Program (SIP).

4.4. Chief Inspector Responsibilities. The QA Chief Inspector will:

4.4.1. Use assigned inspectors to provide on-the-spot assistance to correct problems.

4.4.2. Spot-check TO/TIs, inspection work cards, checklists, job guides, and work unit code (WUC) manuals during evaluations and inspections for currency and serviceability.

4.4.3. Assist Program Analysis with investigations and studies.

4.4.4. Initiate actions when additional attention is required to resolve adverse maintenance trends or training problems. Actions include preparing cross-tell information bulletins and messages for AFTAC/LS release to other similarly-equipped units and HQ AFISRA.

4.4.5. Review Category II major discrepancies for trends quarterly. If frequency or severity of identified discrepancies warrant inclusion of that item into a specific TO/TI governing an action or inspection, the QA Chief Inspector must submit an AFTO IMT 22 or develop a local work card, local page supplement, or checklist IAW TO 00-5-1.

4.4.6. Review MSEP data quarterly to identify high-missed carded items from personnel evaluations (PEs) and quality verification inspections (QVIs). A high-missed carded item is defined as any work card item missed at least three times during a one-month period. Coordinate with Program Analysis to identify any relationships with repeat, recur, and CND trends. Include this data in the monthly MSEP summary.

4.5. Quality Assurance Training. Develop a local training plan to train all QA inspector personnel, to include augmentees.

4.5.1. Training must cover inspection and evaluation techniques, documenting inspection worksheets, and actions to prevent personnel injury or equipment damage. Document QA Inspector training in individual training records or MIS.

4.5.2. A qualified inspector will conduct an Evaluator Proficiency Evaluation (EPE) on each inspector performing one PE and one technical inspection (QVI/Special Inspection). Each QA inspector, permanent or augmentee, must pass the EPEs prior to performing unsupervised evaluations and inspections.

4.5.2.1. QA augmentees require an annual EPE on either a PE or technical inspection.

4.5.2.2. All EPEs must be tracked in the MIS or QA database.

4.5.3. QA inspectors inspecting outside of their Air Force Specialty Code (AFSC) will be AFTO Form 797 qualified on the requirements of the KTL they evaluate. Chief Inspectors will identify other critical tasks requiring AFTO Form 797 qualification as required. For all other tasks, inspectors must be familiar with the requirements/procedures of tasks they evaluate.

4.6. Quality Assurance Augmentation. If a functional area does not warrant a full-time position in QA, but specialized expertise is required, select qualified technicians that are recommended by their Supt or Branch Chief to be augmentees. Each QA must maintain a listing of current augmentees. In coordination with AFTAC/LS, the QA Section Chief establishes augmentee duties.

4.7. Maintenance Standardization and Evaluation Program (MSEP). MSEP is the systematic, continuous self-evaluation program for AFTAC systems maintenance. MSEP consists of managerial evaluations. An effective MSEP is essential to successful AFTAC systems maintenance and requires the full commitment of all maintenance complex resources, to include the most competent technicians and the production work centers full participation.

4.7.1. MSEP provides the COM with key indicators to judge the maintenance activity's ability to meet mission requirements. The COM is responsible for establishing the MSEP to determine the quality of maintenance management, production, and procedures; technician competence; and training program effectiveness. MSEP addresses issues from a maintenance perspective. Other programs OPRs (i.e., Safety, Security, Personnel, Records Management, etc.) maintain responsibilities for their specific program areas. When issues are identified in other program areas, they are passed to the appropriate OPR.

4.7.2. This instruction establishes the minimum requirements for MSEP.

4.7.3. The COM is functionally responsible for AFTAC systems maintenance management programs.

4.7.4. MSEP establishes periodic evaluations to determine the overall capabilities of the maintenance activity, assess the adequacy of technical data, evaluate maintenance actions, and ensure satisfactory equipment operation.

4.7.5. Compliance with MSEP is required for work centers or functions responsible for MICAP, MDC reportable, or mission critical systems and equipment (e.g., managerial evaluations).

4.7.6. Evaluators use the results to determine the effectiveness of maintenance and management practices. Management practices, systems, and facilities must be evaluated periodically to identify and correct problems.

4.7.6.1. Evaluators are the key to the evaluation program and are not to be the same individual who certified task proficiency of the person being evaluated. Ideally, the evaluator is certified on the tasks being evaluated and possesses the same skill set at a higher skill level than the individual being evaluated.

4.7.6.2. Hard-copy and/or electronic copy of all MSEP evaluation reports will be maintained for a minimum of two years.

4.7.7. Evaluation guides will be used during managerial evaluations for subjects such as safety, supply, vehicles, and administration. Evaluators shall use Air Force Maintenance Quality Control Checklists (AFMQCCs) and/or Center Maintenance Quality Control Checklists (MQCC) for managerial evaluations, as applicable.

4.7.8. Managerial evaluations provide the senior leadership, the COM, and supervisors with factual, objective assessments of a section's ability to meet mission requirements. SAVs, Inspector General inspections, and assessments (unit self-assessments, etc.) do not replace MSEP managerial evaluations.

4.7.8.1. Perform managerial evaluations on each staff function and work center at least every 24 months. Use appropriate AFMQCCs and Center MQCCs for managerial evaluations, as applicable. Ensure applicable areas listed in Paragraph 4.7.8.8. are evaluated.

4.7.8.2. Before beginning managerial evaluations, review reports of previous managerial evaluations. Review other evaluation reports such as administrative files evaluations, IG evaluations, operational evaluations, SAV reports, maintenance analysis trend data, and any other relevant management indicators.

4.7.8.3. Make impartial, factual, pertinent, and complete observations to identify deficiencies. Identify commendable practices and programs, especially those that may be useful to other work centers.

4.7.8.4. Demonstrate proper procedures and provide assistance to help work center and staff personnel meet mission requirements.

4.7.8.5. Ensure affected supervisors fully understand findings before formal evaluation reports are written.

4.7.8.6. Participate in Preventative Maintenance Routines to determine if mission requirements are being met.

4.7.8.7. Evaluate subject areas in enough depth to ensure the results indicate the actual condition of the activity. Not all areas require 100 percent evaluation for the evaluator to make this determination.

4.7.8.8. Determine how well work centers and support functions meet production and management requirements and if established procedures are followed. The minimum evaluation items include, if applicable:

4.7.8.8.1. Compliance with this instruction, associated and local directives, safety and security rules, and procedures as they pertain to the maintenance activities.

4.7.8.8.2. Equipment and system condition and performance.

4.7.8.8.3. Compliance with the Preventative Maintenance Routine schedule.

4.7.8.8.4. Compliance with the HAZMAT and HAZCOM programs.

4.7.8.8.5. Compliance with local, state, federal, and host nation environmental policy and guidance.

4.7.8.8.6. Back-up power procedures.

4.7.8.8.7. Cannibalization procedures and documentation.

4.7.8.8.8. Corrosion prevention and control program.

4.7.8.8.9. Compliance with ESD practices, where applicable, IAW TO 00-25-234.

4.7.8.8.10. Adequacy of training plans and training materials. Check training documentation, progression, and task coverage.

4.7.8.8.11. Compliance with job documentation and data accuracy.

4.7.8.8.12. TMDE management to include availability of required TMDE, limited and special calibration requirements, condition and calibration status, storage and handling, etc.

4.7.8.8.13. Supply management to include supply discipline, bench stock, supply point, and adjusted stock level management, and reparable processing.

4.7.8.8.14. Technical data to include maintenance of TO files, availability, and use of required technical and commercial data.

4.7.8.8.15. Standard and specialized publications (TIs) to include: the adequacy and availability of required publications, publications familiarization and use of files, and the clarity and accuracy of the local directives for which the work center or function is OPR or OCR.

4.7.8.8.16. Work center systems installation and equipment records.

4.7.8.8.17. Adequacy and accuracy of system or equipment historical files.

4.7.8.8.18. General housekeeping practices to include the condition of facilities and non-mission equipment.

4.7.8.8.19. Compliance with the Radio Frequency Radiation Safety Program IAW AFOSHSTD 48-9, *Electro-Magnetic Frequency (EMF) Radiation Occupational Health Program.*

4.7.8.9. Evaluation Reports. Provide complete, accurate, and impartial reports with sound recommendations designed to help correct discrepancies and eliminate underlying causes.

4.7.8.9.1. Reference deficiencies that result from procedural omissions or repeated errors. Failure to perform checks to ensure publications are current or determine out-

of-tolerance system or equipment measurements exist, are examples of procedural deficiencies.

4.7.8.9.2. References are not required when a deficiency or isolated minor error is easily understood and corrective action is obvious. General housekeeping practices, equipment cleanliness, and standard supervisory responsibilities and safety practices are examples of areas that may not require references.

4.7.8.9.3. Deficiencies caused by inefficient or ineffective management practices may require the use of rationale since a specific reference may not be published. The COM resolves differences of opinion over the validity of the type of discrepancy before reports are finalized.

4.7.8.9.4. Include recommendations for corrective actions with each deficiency, except where the corrective action is obvious.

4.7.8.9.5. Document favorable comments, as well as deficiencies on MSEP evaluation reports.

4.7.8.9.6. The COM is the closing authority for MSEP evaluations. The COM may indicate closure by concurrence or non-concurrence with the evaluator's recommendations. The COM may delegate closing authority for managerial evaluation reports that identify only minor or no discrepancies.

4.7.8.9.7. Use of AF Form 2420, *Quality Control Inspection Summary*, to document managerial evaluations is a COM option. Managerial evaluations results may be prepared in a narrative style on bond paper and attached to the AF Form 2419, *Routing and Review of Quality Control Reports*, or equivalent automated product.

4.7.8.9.8. Managerial evaluation reports address minimum coverage areas and list deficiencies found in the areas of management, system equipment, and task performance. Reports show correlation between deficiencies, if applicable. Additionally, the reports address production and mission requirements not being met and the causes behind these shortfalls.

4.8. Deficiency Analysis. The COM will provide the MAM and the maintenance organization a deficiency analysis summary quarterly or as requested. This report may be included in a quarterly digest. The COM staff will:

4.8.1. Identify trends and deficiency patterns by reviewing MSEP evaluation results and soliciting feedback from other staff functions.

4.8.2. Identify the underlying cause of the deficiency.

4.8.3. Identify the impact of the deficiency.

4.8.4. Identify the corrective actions already taken to resolve the deficiency.

4.8.5. Recommend management action(s) to permanently correct the deficiency.

4.8.6. Base the analysis on errors trends and deficiencies collected during the summary period. Compare the results to the deficiency analysis from previous summary reports.

Chapter 5

WORK CENTER PROGRAMS

5.1. Introduction. Maintenance work centers are the production elements under the COM and are responsible for accomplishing all maintenance. Maintenance production work centers are supported by and must maintain a close working relationship with the maintenance staff.

5.2. Work Center Supervisor Responsibilities. Work center supervisors ensure the timely and efficient accomplishment of quality maintenance. Work center supervisors are working supervisors who must be aware of all direct maintenance actions and participate as needed.

5.3. Work Center Safety. Enforce safety practices IAW Air Force directives, command publications, and 48 and 91-series of AFOSH STDs.

5.3.1. Implement and effectively manage the work center Radio Frequency Radiation Protection Program IAW AFOSH STD 48-9.

5.3.2. Implement and effectively manage the work center HAZMAT and HAZCOM programs IAW AFOSH STD 91-50, *Communications Cable, Antenna, and Communications-Electronic (C-E) Systems*; and AFOSH STD 90-281, *Hazard Communication*.

5.3.3. Implement and effectively manage the work center Confined Space Program IAW AFOSH STD 91-25, *Confined Spaces*.

5.3.4. Ensure facility grounding and lightning protection checks IAW AFI 32-1065, *Grounding Systems*. Ensure work center facility managers and safety monitors perform physical/visual grounding and lightning protection inspections as part of Preventative Maintenance Routiness and required site inspections.

5.3.5. Ensure climbing training, certification and recertification procedures are accomplished.

5.4. Work Center Training Management. Implement and effectively manage the work center training program IAW AFI 36-2201, *Air Force Training Program,* and MAJCOM supplements.

5.4.1. Ensure ancillary training is documented.

5.4.2. Perform initial evaluations of newly assigned individuals IAW AFI 36-2201. Technicians certified by another work center on tasks applicable to their new duty position must demonstrate proficiency on a sampling of those tasks.

5.4.3. During the initial work center orientation, the work center supervisor will brief the MSEP program, work center training program, safety, and work center operating procedures.

5.4.4. Ensure the validity of task qualification and certification actions.

5.4.4.1. Technicians will not perform maintenance tasks they are not certified on unless directly supervised by a task certified technician.

5.4.4.2. Trainees must fully understand and believe they can perform the task safely and correctly before agreeing to task certification.

5.4.4.3. When individuals cannot perform a certified task, the supervisor must immediately decertify the individual on that task and review related tasks to determine if

additional decertification and training are required. Supervisors must understand evaluation decertification and recertification documentation procedures. Supervisors will:

5.4.4.3.1. Document unsatisfactory task performance in the individual's AF Form 623, *On-the-Job Training Record*.

5.4.4.3.2. Perform training recertification within 60 calendar days if still required for the duty position. Annotate completion of training and recertification in the individual's AF Form 623.

5.4.5. Work closely with the COM Maintenance Training Management function to:

5.4.5.1. Identify formal training requirements.

5.4.5.2. Assess the impact of significant training difficulties on the work center's maintenance capability.

5.4.5.3. Identify work center training capabilities that may be of use to other work centers.

5.4.6. Validate training references,

5.4.7. Before members depart PCS, ensure they are given the appropriate training products (includes ancillary training) to carry to their next duty station.

5.5. Work Center Maintenance. Work center supervisors ensure work center maintenance is accomplished, controlled, and reported in a timely manner.

5.5.1. Perform maintenance IAW applicable system or equipment technical data.

5.5.1.1. On-line, operational systems will not be used to test or verify serviceability of parts, such as supply point assets, without COM approval.

5.5.1.2. Submit AFTO Form 22 IAW TO 00-5-1 when TO errors or inadequacies are found.

5.5.2. Maintain a local technical library consisting of necessary technical order, technical instructions, commercial manuals, historical records, and PIPR for maintaining all assigned systems.

5.5.3. Perform and document a review of work center PIPRs annually.

5.5.4. Draft local work cards (LWCs) or Air Force Communication Electronic Maintenance Instructions (AFCEMIs) when system or equipment Preventative Maintenance Routines are needed, but not published IAW TO 00-5-1 and command publications. Submit draft documents to COM staff for review, validation, coordination and further processing as appropriate for publication.

5.5.5. Perform only authorized cannibalization actions IAW this instruction and TO 00-20-2. Document cannibalization actions using appropriate procedures.

5.5.6. Perform only system, equipment, or circuit modifications or configuration changes authorized by TCTO or command modification directive.

5.5.7. Ensure effective and timely equipment corrosion prevention and control actions are taken IAW TO 1-1-689, *Organizational, Unit, and Intermediate Maintenance, Avionics*

Cleaning, and Corrosion Prevention Control; TO 31Z-10-37, *General Engineering Technical Manual Corrosion Prevention and Protection;* and command regulations.

5.5.7.1. Ensure initial and annual refresher corrosion prevention and control training is documented.

5.5.8. Review the MDC entered in MIS. Ensure accurate and timely maintenance documentation submissions and error corrections.

5.5.8.1. Review trends in maintenance documentation errors and establish corrective actions.

5.5.8.2. Maintenance technicians document maintenance actions IAW TO 00-20-2, *Maintenance Data Documentation,* on equipment identified as MDC reportable in applicable Center directives.

5.5.9. Provide the COM staff with technician availability status and on-call schedules.

5.5.10. Advise the maintenance supervisor or the COM of taskings beyond the work center's capacity or that cannot be completed within a reasonable time.

5.5.11. Work closely with the COM staff to improve the work center's management and maintenance programs.

5.5.12. Coordinate with the COM staff to schedule managerial evaluations.

5.5.12.1. Review all managerial evaluation reports. Ensure timely action is taken to correct discrepancies, identify underlying causes, and take management action to prevent recurrence.

5.5.13. Ensure antenna systems are managed IAW **Attachment 3**.

5.6. Work Center Control of Maintenance. Work center supervisors ensure that personnel, tools, equipment, and supplies are available to meet maintenance requirements. Work center supervisors will:

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

5.6.2. Ensure that work center personnel comply with maintenance schedules and promptly respond to scheduled and unscheduled maintenance requirements.

5.6.2.1. In some cases, such as for critical command and control systems, the need for immediate response may require that the normal trouble reporting sequence be delayed. Technicians will provide the COM staff with an initial status report as soon as the nature of the malfunction is verified.

5.6.2.2. Coordinate directly with other work centers, when necessary, to resolve outages.

5.6.3. Review the AFTAC Systems Equipment Inventory List and CA/CRL to ensure all work center resources are accurately reflected. Conduct the review annually. Notify the COM staff when corrections or additions are necessary.

5.6.4. Establish a Preventative Maintenance Routines schedule. Ensure all Preventative Maintenance Routines for assigned mission and support equipment are included in the schedule. Notify the COM staff when corrections or additions are necessary.

5.6.4.1. Ensure the Preventative Maintenance Routines schedule is annotated on the date completed. Annotate deviations and review them monthly to determine reasons for the deviations. Take appropriate action to improve on-time accomplishment of scheduled maintenance.

5.6.4.2. When Preventative Maintenance Routines requirements cannot be met, a waiver must be obtained. All requests for waivers will be submitted to the COM staff.

5.6.5. Control and monitor maintenance. Review deferred jobs and reconcile supply status.

5.6.6. Notify the COM staff if work center controlled jobs change system or equipment status.

5.6.7. Perform in-process evaluations at various stages of assembly of systems, subsystems, or components when further assembly would prevent evaluation for TO compliance. Supervisors specify in-process evaluation requirements.

5.6.8. Control and document the status of all active jobs that change equipment status. Active jobs are defined as those jobs where work is in-progress or scheduled to be done that day.

5.6.9. Enter and update PR data as events occur.

5.7. Work Center Supply Management. Supervisors ensure cost effective maintenance support of the mission through the proper use and management of supply assets and support equipment. Supervisors will:

5.7.1. Use MIS to directly requisition parts whenever possible. Use the direct call-in or email method between the work center and demand processing when MIS is not available.

5.7.2. Ensure repair cycle assets are properly managed.

5.7.2.1. Process repaired assets and perform pre-validation check for actions.

5.7.2.2. Process reparable property under warranty or guarantee IAW TO 00-20-3, TO 00-35D-54, and AFMAN 23-110.

5.7.3. Submit deficiency reports or reports of discrepancy when deficient material is received.

5.7.4. Monitor and control bench stock as required.

5.7.5. Develop written guidance to monitor and control shop/operating stocks IAW AFI 23-111, *Management of Government Property in Possession of the Air Force.* For maintenance purpose, shop/operating stocks are those items purchased with AF funds to fulfill mission requirements (e.g., Preventative Maintenance Routiness, equipment maintenance, work orders, etc.) that cannot be loaded on bench stock or work order residue accounts (i.e., GSA purchased cable stocks, connectors, hardware, etc.).

5.7.6. Ensure the equipment custodian completes appropriate documentation when installation or removal projects are complete.

5.7.7. Ensure forward supply point assets are managed IAW AFMAN 23-110.

5.8. Work Center Publications Management. Supervisors ensure required directives and technical publications are on hand and properly maintained IAW AFI 33-360, *Publications and Forms Management*, and TO 00-5-1.

5.8.1. Strictly enforce adherence to and compliance with applicable TO/TIs and supplements.

5.8.2. Ensure availability of required TO/TIs and supplements in the work centers.

5.9. Work Center Facility, System Installation, and Equipment Records. Supervisors ensure systems installation and equipment records are current and available. Supervisors will:

5.9.1. Ensure PIPRs are current. Perform annual review of all PIPRs.

5.9.2. Document base (or host nation equivalent) facility grounding and lightning protection checks in the facility or historical files.

5.9.3. Maintain system or equipment historical files, unless a centralized file is directed by the COM.

5.9.4. Use and maintain the TCTO history. Using manual AFTO Form 95, *Significant Historical Data*, print a copy of the TCTO history from the MIS TCTO subsystem and attach a copy of the AFTO Form 95, for equipment being turned in or transferred.

5.10. Work Center TMDE Management. Ensure work center TMDE management responsibilities are accomplished and that required TMDE, shop mock-ups, and test fixtures are available and properly maintained.

5.10.1. Work center supervisors ensure compliance with user and organizational maintenance responsibilities and appoint a work center TMDE monitor to ensure TMDE is properly managed. Work center TMDE monitors perform a key role to ensure serviceable TMDE is available to work center technicians when and where it is needed.

5.10.2. Work center supervisors and work center TMDE monitors will establish and effectively maintain a TMDE account IAW the following directives: AFI 21-113, *Air Force Metrology and Calibration (AFMETCAL) Program;* TO 00-20-14-CD-1, *Air Force Metrology* and *Calibration Program;* TO 33-1-27, *Logistics Support of Precision Measurement Equipment;* TO 33K-1-100-CD-1, *MDE Calibration Notes Maintenance Data Collection Codes; Cal Measurement Summaries Calibration Procedure; Calibration Interval and Work Unit Code Reference Manual,* and local host base regulations.

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

5.10.4. Notify the COM when the lack of TMDE impacts completion of the work center's mission.

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

5.10.5.1. Determine if substitute items are acceptable.

5.10.5.2. 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.

5.10.6. Locally Procured TMDE. Determine the supporting PMELs ability to maintain and calibrate TMDE before making a local purchase.

5.11. Work Center Not Repairable This Station (NRTS) Process. The production work center supervisor is responsible for verifying proposed NRTS actions within their respective work center. Work center supervisors will:

5.11.1. Determine if a cost effective repair capability is available in other work centers, on base, or through local procurement prior to completing the NRTS action.

5.12. Work Center Tool Control Management. The objectives of the tool and equipment management program are to prevent and eliminate abuse and reduce costs through strict effective control and accountability of assets. To ensure standardization among maintenance units, commanders and key leaders are responsible for executing an effective tool program. The tool management program outlined in this instruction represents AFTAC minimum program requirements.

5.12.1. The COM is the OPR for management of tools/equipment guidance. As a minimum, guidance will address the following:

5.12.1.1. Standardized procedures for security, control, and accountability (e.g., chits, manual, barcode, etc.) of tools and equipment.

5.12.1.2. Inventory requirements.

5.12.1.3. Procedures for control and management of replacement, expendable and consumable hand tools, HAZMATs, and other items contained in composite tool kits/tool kits (CTKs/TKs).

5.12.1.4. Procedures for transfer of tools/CTKs/TKs at the job site. CTKs/TKs are not normally passed from one individual to another at the job site; however, mission needs occasionally require this action to occur. Ensure tool accountability and control is maintained when transfer occurs between the individuals.

5.12.1.5. Procedures for lost or missing tools.

5.12.1.6. Assignment of equipment identification designators (EID) for CTKs/TKs, non-CA/CRL equipment, and assignment of CTK/TK numbers for tools.

5.12.1.7. Procedures for control of locally manufactured or developed tools and equipment.

5.12.2. The COM will designate CTK/TK custodians in writing or will delegate to branch level authority. CTK/TK custodians are responsible for tool, HAZMAT, and consumable asset accountability and control. NOTE: A separate person may be designated as the HAZMAT monitor.

5.12.3. Flight chiefs/section NCOICs (or equivalents) determine the type, size, contents, and number of CTKs required for their work centers.

5.12.4. Design CTK/TKs to provide a quick inventory and accountability of tools. Clearly mark all CTKs/TKs and tools with the EID

5.12.5. CTK/TK contents will be standardized to the maximum extent possible within functional elements that have similar missions.

5.12.6. Each tool, item of equipment, or consumable contained in a CTK/TK has an assigned location identified either by inlay cuts in the shape of the item, shadowed layout, label, or silhouette. 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).

5.12.7. A Master Inventory List (MIL) is required for each CTK or series of identical CTKs. A hard copy of the MIL must reside with each dispatchable CTK or series of identical kits.

5.12.7.1. Contents are identified on the MIL by drawer/section indicating the number and type of each item in the CTK and total number of all items in each drawer/section.

5.12.7.2. If chits/dog tags/identification tags or similar tags or dust caps are attached to tools/equipment, they will be secured. Locks, keys, and tie down straps, if not permanently attached, will be marked/etched with the appropriate CTK number. All items are listed on the MIL.

5.12.7.3. Consumables may be placed in CTKs. If so, they are identified on the MIL as consumables. Examples of consumables include; safety wire, adhesive, wire bundle lacing, solder, etc. Do not include common hardware items such as bolts, nuts, and/or screws unless they are required as tools.

5.12.7.4. Tool sets are identified on the MIL by total number of items in the set (e.g., Allen wrench set - 9 each Allen wrenches + container for a total of 10).

5.12.7.5. Document missing, removed, and/or broken tools/items if they cannot be replaced immediately. In addition, for dispatchable CTKs and dispatchable support equipment/dispatchable special tools containing multiple parts, document the missing, removed, and/or broken tools/items on a locally generated form, or on the hard copy MIL. Pencil/pen may be used for hard copy MIL documentation and erased when cleared. Remove the EID from any permanently removed tool/item. A permanently removed (without planned replacement) tool/item constitutes a change to the inventory and requires a new MIL.

5.12.7.6. The CTK/TK custodian has the authority to interchange "like" (form, fit, function) items.

5.12.8. Equipment and accessories that will not leave the work center, support section, or tool room need not be included in a CTK/TK; however, this equipment must have designated storage locations established. Designated locations may be work areas or stations.

5.12.9. Tools not controlled through CTK/TK procedures are NOT authorized in any maintenance area (e.g., personally-purchased tools, mini-mag flashlights, Leatherman multi-tools, buck knives, etc.). AFTAC will develop procedures to mark and control equipment that a work center assigns/issues to an individual.

5.12.10. Tool Accountability. Section NCOICs, through CTK/TK custodians, are responsible for tool and equipment accountability and control (knowing where tools are and who has responsibility for them). When a person signs for a tool or piece of equipment, they are accountable for them until it is returned to the work center and accountability transfers back to the CTK/TK custodian.

5.12.10.1. All AFTAC units must use an approved system for accountability and control of tools and equipment.

5.12.10.1.1. AFTAC units may use a chit system, AF IMT 1297, or a locally approved form for accountability and control of CTKs/TKs, equipment, and tools. When using a chit system, chits are controlled as tools, to include the beginning and end of shift inventory. Do not issue chits directly to individuals or remove them from tool rooms. Chit control boards are located in secure locations.

5.12.10.1.2. Account for all CTKs/TKs, tools, and dispatchable equipment at the beginning and end of each shift. Shift inventories must be documented by both outgoing and incoming personnel. CTKs/TKs that have not been utilized during the shift do not need to be opened for inventory.

5.12.10.1.2.1. Perform a visual inventory of all CTKs/TKs when issued for use, at the completion of job or tasks, and when returned to the work center or tool storage facility. Accomplish a CTK/TK inventory prior to operation of any equipment when maintenance actions were performed. Note: Upon returning to the work area after sheltering from real-world/exercise events an immediate and complete inventory of all CTKs/TKs will be conducted.

5.12.10.1.2.2. At least annually or when the CTK/TK custodian changes, conduct a comprehensive inventory of all tools, non-CA/CRL equipment, and CTKs/TKs. The purpose of this inventory is to perform an extensive inspection of all tools and non-CA/CRL equipment, to include condition, identification markings, and accuracy of the MIL/TK/CRL Supplemental Listing. Inspect all tools for serviceability IAW TO 32-1-2, *Use and Care of Hand Tools.* CTK/TK custodians document these inventories and maintain the most current inventory documentation on file.

5.12.11. All AFTAC units must mark their tools and equipment with a location-unique EID or marking and utilize an approved system. Geographically separated units may use the parent unit EID. New tools (spare replacements) stored away from the CTK/TK do not need to be etched or marked until placement in a specific CTK/TK.

5.12.11.1. The EID will consist of eight characters (numbers/letters) of which the first four characters will be a unique AFTAC/work center code. AFTAC units that utilize a marking system will identify each CTK/TK with a unique color or marking that identifies the owning work center.

5.12.11.2. The unit establishes the remaining four characters (any combination of numbers/letters) or markings for CTKs, tools, and dispatchable equipment.

5.12.11.3. Units must place the EID on all CTKs, tools not assigned to a box, and dispatchable equipment that is of sufficient size. The EID must be placed on the outside of dispatchable CTKs. Units may affix non-metallic bar code labels on tools to prevent re-etching as long as the use of the tool and its work environment does not normally result in excessive damage to the label, making it unreadable. Tools will be marked with the most current EID. All previous CTK identifiers will either be removed or marked out (this does not include PMEL markings).

5.12.11.3.1. Small tools or items that cannot be marked as described above (such as drill bits, Allen wrench sets, apexes, etc.) are to be maintained in a container marked with the EID.

5.12.11.4. The Chief of Maintenance may require use of the EID and AFTO Form 65 (metallic)/AFTO Form 66 (non-metallic) for TMDE routinely (i.e., once per week) dispatched from a work center or use of the AFTO Form 65/66 alone. For items that physically or mechanically check tolerances that require calibration, do not etch or stamp in any manner that will affect calibration or the ability to calibrate. If marking is in question, the owning work center shall consult PMEL.

5.12.12. All locally manufactured, developed, or modified tools and equipment used on aerospace equipment must be approved by the Chief of Maintenance or their designated representative. This procedure does not apply to local manufacture, modification, or design of tools authorized in specific technical data. Quality Assurance coordinates on all requests for approval and use of locally designed tools or equipment. Users will review items and requirements biennially (every two years) for applicability and current configuration.

5.12.13. Supervisors ensure all assigned personnel are familiar with lost tool procedures. If an item/tool or a portion of a broken tool is discovered missing, the following procedures apply:

5.12.13.1. The person identifying the missing item/tool will search the immediate work area for the item/tool. If not found, after completing an initial search of the immediate work area, the individual will notify the OPR or equivalent.

5.12.13.2. If not found, the section will make notification of the missing item/tool.

5.12.13.3. If the item is not located, the NCOIC shall determine when the search may be discontinued.

5.12.13.4. Limit authorization to clear discrepancies when a tool/item cannot be located to no lower than the maintenance section chief.

ROBERT P. OTTO, Maj Gen, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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Abbreviations and Acronyms

AARE—Advanced Atmospheric Research Equipment

AFISRA—Air Force Intelligence, Surveillance and Reconnaissance Agency

AFCEMI—Air Force Communication Electronic Maintenance Instruction

AFCFM—Air Force Career Field Manager

AFCSM—Air Force Computer Security Manual

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFMETCAL—Air Force Metrology and Calibration Program

AFMQCCs— – Air Force Maintenance Quality Control Checklists

AFOSH—Air Force Occupational Safety and Health

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFRIMS—Air Force Records Information Management System

AFSC—Air Force Specialty Code

AFTAC—Air Force Technical Applications Center

AFTO—Air Force Technical Order

ALTNDC—Alternate National Data Center

AQL—Acceptable Quality Level

C-E—– Communications-Electronics

CA/CRL—Custodian Authorization/Custody Receipt Listing

CND—Cannot Duplicate

COL—Chief of Logistics

COM—Chief of Maintenance

CONUS—Continental United States

COTS—Commercial Off-The-Shelf

CPR—Cardio-pulmonary Resuscitation

CTK—Composite Took Kit

EID—Equipment Identification Designator

EMF—Electro-Magnetic Frequency

EPE—Evaluator Proficiency Evaluation

ESD—Electrostatic Discharge

ESR—Equipment Status Report

ETRO—Estimated Time of Return to Operations

GE—Geophysical Equipment

GEMS—Geophysical Equipment Maintenance Branch

GSA—General Services Administration

HAZCOM—Hazardous Communications

HAZMAT—Hazardous Materials

IAW—In Accordance With

JST—Job Standard

KTL—Key Task Listing

LRU—Line Replaceable Unit

LWC—Local Work Card

MAJCOM—Major Command

MAM—Mission Area Manager

MDC—Maintenance Data Collection

MICAP—Mission Capable

MIL—Master Inventory Listing

MIS—Maintenance Information System

MOI—Maintenance Operating Instruction

MQCC—Maintenance Quality Control Checklist

MSEP—Maintenance Standardization and Evaluation Program

NRTS—Not Repairable This Station

OCR—Office of Collateral Responsibility

OI—Operating Instruction

OL—Operating Location

OPR—Office of Primary Responsibility

OSHA—Occupational Safety and Health Administration

OT&E—Operational Test & Evaluations

PCS—Permanent Change of Station

PE—Personnel Evaluation

PIPR—Plant-In-Place-Records

PMEL—Precision Measurement Equipment Laboratory

PMR—Preventative Maintenance Routines

PR—Problem Report

QA—Quality Assurance

QVI—Quality Verification Inspection

RDS—Records Disposition Schedule

RTL—Routine Task Listing

SAV—Staff Assistance Visit

SEE—Special Electronics Equipment

SI—Special Inspection

SIP—Self-Inspection Program

SODS—Sampler Operations and Data System

TCTI—Time Critical Technical Instruction

TCTO—Time Critical Technical Order

TI—Technical Instructions

TK—Tool Kit

TM—Technical Manual

TMDE—Test, Measurement, and Diagnostic Equipment

TO—Technical Orders

TODA—Technical Order Distribution Account

USAEDS—United States Atomic Energy Detection System

WUC—Work Unit Code

Terms

Chief of Maintenance (COM)—The senior manager, other than the commander, responsible for maintenance.

Commercial-Off-The-Shelf (COTS)—There is no single definition of a "COTS-based system". Instead, there is a spectrum of ways that systems can incorporate COTS products. All new acquisition programs pose challenges for system integration and require specialized management once fielded. At two extremes of this spectrum are the following: - A COTS-Solution system is one in which a single product, or suite of products, provides the essential solution in an application area. Such a system is constructed by tailoring the product to specific business needs and usually only a single vendor relationship is involved. – A COTS-Intensive system is one in which system capabilities are achieved through the integration of several COTS software products from multiple software vendors. In such cases, either the application area is unique, or the scope of the system is sufficiently large to preclude the probability of a single commercial solution. - These two are extremes, and most systems will fall somewhere in the middle.

Contract Maintenance—Accomplish contract maintenance surveillance program duties IAW procurement guidelines and command directives.

Logistics Maintenance and Engineering—The Logistics Maintenance Engineering Branch is directly responsible to the COM and directs the performance of maintenance engineering, depot, and deployable maintenance services to accomplish upgrades or maintenance activities at locations requiring maintenance assistance. The Branch provides direct oversight of the Geophysical Equipment Maintenance Section which provides the mobile maintenance repair capability to the COM and the sustainment maintenance section which provides intermediate and depot level maintenance.

Logistics Support—The Logistics Support Branch is directly responsible to the COM for the maintenance, supply, transportation, documentation, and contract support of AFTAC mission systems. The branch oversees the Center's acquisition requirements process by providing guidance, training, and policy development. The branch is responsible to provide supply and transportation requirements for both CONUS and overseas units. The branch acts as the Contracting Technical Representative and Program Manager for all logistics, maintenance,

supply, and transportation contracts. The branch provides daily interface with AFTAC customers and the 45th Space Wing.

Maintenance—Maintenance is defined as any action which requires the removal of an equipment cover or panel to conduct an alignment, adjustment, modification, removal and replacement of a line replaceable unit (LRU), reset action, etc. to restore a system to operational status; to perform Preventative maintenance routine (PMR); or to install or remove CE systems, equipment, or circuit.

Maintenance Activity—All staff functions, management support functions, and all production work centers directly or functionally responsible to a single chief of maintenance.

Maintenance Capability—Maintenance capability is AFTAC's ability to maintain its assigned systems and equipment in proper condition. Managers and supervisors must plan/schedule maintenance to ensure personnel are productively employed, ensure personnel have appropriate skill/technical level, and justify enough resources to support a maintenance workload.

Maintenance Information System (MIS)—MIS refers to the automated MIS which may include the Sampler Operations and Data System and Maximo Enterprise Suite.

Maintenance Organization—AFTAC's complex is comprised of the Chief of Maintenance, Maintenance Superintendent, Systems Control, Plans and Programs, Logistics Support, Engineering and Maintenance, Material Collection, and numerous work center supervisors and their respective work centers (to include detachments).

Maintenance Work Centers—Maintenance work centers are the production elements under the COM and are responsible for accomplishing all maintenance and providing operational status changes as they occur. Maintenance production work centers are supported by and must maintain a close working relationship with the maintenance staff. All 9S100 personnel in maintenance positions are considered traditional maintenance technicians.

Materials Collection—The Materials Collection Systems Branch is directly responsible to the COM for the execution of MAM tasking related to the materials collection mission to include new system development, operational deployment, and overall network management. The branch exercises functional control over material systems work centers.

Metrics—The COM may use maintenance management metrics (e.g., operational availability, personnel training status, etc.) to better forecast resources.

Plans and Programs—The Plans and Programs Branch is responsible for COM guidance generation, development of logistic and maintenance processes, and to ensure effective maintenance and management practices are used throughout the maintenance activity.

Restoral—To bring mission critical system back to a former position or condition. To return a system to fully operational capability.

SEE and AARE Maintenance—SEE and AARE maintenance is defined as any action taken to restore SEE and AARE equipment to operational status, to perform Preventative maintenance routines on equipment, to perform scheduled and unscheduled maintenance, or to install or remove SEE and AARE equipment. Computers identified as mission capable/mission critical reportable are governed by this instruction

Systems Control—Systems Control Branch functions in direct support of AFTAC's maintenance operations mission. The branch supervisor provides direct oversight of the Systems Control Center and is the management function which monitors and ensures data availability, coordinates field operations and maintenance, and performs special field maintenance and support as required to accomplish the unit mission. They are the 24/7 focal point for the assembly, collation, and assessment of significant logistics information and requirements.

Attachment 2

AIR FORCE MAINTENANCE QUALITY CONTROL CHECKLISTS

A2.1. AFMQCC are guides used primarily by Quality Assurance to help determine equipment condition, maintenance quality, and maintenance management effectiveness. Work center and staff functions may use AFMQCCs when performing self-inspections. AFMQCCs are standardized and published on AF Form 3900, *Quality Control Check Sheet*. AFMQCCs are not directive. Resolve conflicts between AFMQCCs and TOs or other official AF publications in favor of the higher-level publication. Do not use AFMQCCs to operate, maintain (e.g., tuning, aligning, adjusting, etc.), or troubleshoot equipment. Do not limit equipment or management evaluations to the checks in the AFMQCCs. Add other checks to ensure a thorough evaluation. MAJCOMs may add any additional checks necessary to ensure unique mission requirements are met.

A2.1.1. Minor and common pieces of equipment may not need a separate AFMQCC, but may be covered by general-type AFMQCCs.

A2.1.2. Similar items of equipment (i.e., fuse panels, station batteries, panels, power supplies, etc.) may be included in a general AFMQCC. They contain those checks common to all or most of the similar equipment items. If required, local units may add additional checks for an individual equipment type.

A2.1.3. Use general check sheets in conjunction with equipment specific check sheets.

A2.1.4. AFMQCCs may be obtained from the following website: **https://private.afca.af.mil/c-emaint.mqcss.htm**.

A2.2. AFTAC unique Maintenance Quality Control Checklists (MQCC) are established by this instruction.

A2.2.1. The COM authorizes the use of local MQCCs only when AFMQCCs or Center MQCCs do not exist.

A2.2.2. Local MQCCs:

A2.2.2.1. Are conspicuously marked or labeled as local MQCCs.

A2.2.2.2. Are not retained or used after an AF or Center MQCC is published on the same item of equipment, grouping of equipment (general MQCC), or management function.

A2.2.2.3. Supplement AF or Center MQCCs if local requirements dictate.

Attachment 3

ANTENNA PREVENTATIVE MAINTENANCE ROUTINES

A3.1. Antenna PMR Procedures. Proper antenna inspections and maintenance are essential to effective management of AF command, control, and communications. Maintenance personnel or appropriate personnel (i.e., contractor, mobile maintenance team, etc.) must inspect the antennas periodically to identify potential equipment deterioration. Antenna maintenance inspections will be conducted in accordance with antenna TO/TIs.

A3.1.1. Owning/maintaining units will:

A3.1.1.1. Load and maintain inventory listings for all antenna systems in MIS IAW TO 00-20-2 and AFCSM 21-556.

A3.1.1.2. Perform PMRs IAW applicable technical manuals. Use MIS to schedule and track all antenna maintenance actions. If no intervals are specified in the technical manuals, the COM will ensure PMR intervals are established. Note: Antenna PMRs must be performed at intervals IAW applicable technical manuals, manufacturer's manual, or COM determination.

A3.1.1.3. Notify the COM of any issues that degrade antenna support for communication services.

Attachment 4

MAINTENANCE MANAGEMENT REQUIREMENTS

A4.1. Maintenance Management Requirements. All personnel performing maintenance will follow the maintenance management requirements in this attachment. The maintenance management requirements are necessary to avoid unnecessary risks to personnel, prevent damage to systems and equipment, and to ensure equipment availability to meet mission requirements.

A4.1.1. Use of MIS to document maintenance is mandatory IAW TO 00-5-15, TO 00-20 series, and this instruction.

A4.1.2. Modification/Configuration Management is mandatory IAW AFI 63-131.

A4.1.3. Scheduling and performance of PMRs, if required by equipment technical data or as COM directs.

A4.1.4. HAZMAT and HAZCOM programs are mandatory IAW AFOSH STD 91-50 and AFOSH STD 48-8.

A4.1.5. Local, state, federal, and host nation environmental policy and guidance is mandatory IAW DoD and AF directives, 48-series and 91-series AFOSH Standards, and command policy.

A4.1.6. Cannibalization procedures and documentation are mandatory IAW TO 00-20-2.

A4.1.7. Corrosion prevention and control program is mandatory IAW TOs 1-1-689, 31Z-10-37, and command policy.

A4.1.8. ESD practices are mandatory IAW TO 00-25-234.

A4.1.9. Managerial evaluations are conducted IAW this instruction.

A4.1.10. TMDE management is mandatory IAW TO 00-20-14.

A4.1.11. Availability, management, and condition of tools are mandatory IAW this instruction.

A4.1.12. Supply management is mandatory IAW AFMAN 23-110, Vol 1 and 2; and TO 00-20-3.

A4.1.13. Technical data management is mandatory IAW 00-5 series TOs.

A4.1.14. Standard and specialized publications management is mandatory IAW AFI 33-360.

A4.1.15. Facility, system installation, and equipment records management is mandatory IAW TO 00-20-1, TO 31W3-10-22, this instruction, and applicable Center 21-series.

A4.1.16. Equipment historical records are mandatory IAW 00-20 series TOs.

A4.1.17. General housekeeping practices are mandatory IAW AFOSH STDs 91-50 and 91-501.

A4.1.18. Logistics support planning is mandatory IAW TO 00-25-108, AFI 10-602, AFI 10-901, and AFI 33-101.

Attachment 5

CLIMBING TRAINING REQUIREMENTS

A5.1. Climbing Training Requirements. The only personnel authorized to climb poles and towers are those who have been properly trained, to include Pole Top Rescue, and are certified or in a training status under the observation of a qualified instructor. This requires military and civilian personnel to maintain climbing proficiency at those units that have climbing requirements as part of the unit mission (see OSHA STD 910.269, *Electric Power Generation, Transmission, and Distribution).* Although general safety and climbing principles are similar, different types of structures (e.g., towers, wood poles, metal poles, antennas, etc.) present unique challenges and require training approaches that are tailored to the specific type of structure. Commanders, supervisors, or team members will prohibit individuals from climbing when a potentially unsafe condition exists (e.g., environmental, mental, physical, lack of experience, etc.).

A5.1.1. These requirements are applicable to active duty, ANG, and AF Reserve units. In addition, these standards and procedures apply to civilian personnel who are required to perform these tasks in their duty positions IAW AFI 91-202, *The US Air Force Mishap Prevention Program.*

A5.2. The COM and local detachment commander or detachment chiefs will designate, in writing, all personnel required to maintain climbing proficiency.

A5.3. Initial Certification Procedures. Graduates of the Communications Cable and Antenna Systems Apprentice Course or other accredited climbing courses are recognized by the C-E AF Career Field Manager as qualified climbers for a period of 90 days from the graduation date. At those units with existing climbing capabilities, the gaining unit must evaluate the graduates within 90 days from the graduation date to verify and document qualifications. The individual will be tested (oral and/or written and by practical demonstration) to ascertain knowledge of standard climbing safety practices and proficiency in climbing practices and procedures. This requirement ensures individuals who must climb and use protective devices are fully qualified and physically capable of climbing and working aloft. Decertify the individual if the initial evaluation exceeds the 90-day period.

A5.3.1. With exception of personnel identified in paragraph A5.2, commanders will restrict climbing authorizations to structures that must be climbed to accomplish mission requirements. The allowable height of climbing is based on mission requirements. Document the limited climbing authorizations.

A5.3.2. Technicians in career fields that 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. (See paragraph **A5.5** for certification resources.)

A5.3.3. Climbing training will be accomplished in increments of progressively higher heights using fall protection and restraint equipment. Once the trainee has demonstrated climbing confidence and ability at the various heights, evaluate the individual without using fall protection equipment to a locally-determined training height.

A5.4. Recertification Procedures. Climbing recertification is an annual requirement.

A5.4.1. Personnel who have not climbed within the last 12 months require refresher training utilizing full fall protection and fall restraint devices.

A5.4.2. Annual recertification may be satisfied by demonstrating climbing proficiency anytime climbing is performed while completing actual job requirements or training events under supervision of a qualified certifier. Full fall protection is not required unless the individual has never received initial certification, exceeded the 12-month recertification period, or has been determined unqualified by the certifier.

A5.4.3. Decertify personnel not qualified to perform climbing tasks and restrict from climbing until recertified. The climbing instructor will determine the training requirements.

A5.5. Certification Resources. Installations without a climbing certifier will use an alternate source for climbing certification (e.g., local climbing courses, Equipment Installation, Cable and Antenna Teams, Special Maintenance Team, etc.).

A5.6. Training Documentation. Document certification.

A5.7. Climbing Certifier Requirements. Climbing certifier will:

A5.7.1. Complete climbing certification training.

A5.7.2. Be designated, in writing, by the commander or designated individual to conduct climbing certification.

A5.7.3. Be current in CPR and first aid training.

A5.7.4. Demonstrate ability to perform and teach complex tasks aloft.

A5.7.5. Be certified to train individuals in Pole Top Rescue.

A5.7.6. Use a training plan to conduct Pole Top Rescue and climbing certification.

A5.7.7. Maintain climbing proficiency and knowledge of current OSHA requirements.

A5.7.8. Determine and arrange for the specific safety equipment to use during performance evaluations.

A5.7.9. Provide and evaluate a written and/or oral knowledge test.

A5.7.10. Evaluate individuals during task preparation and performance.

A5.8. References. Refer to the following references for more detailed guidance related to climbing: TO 31W3-10-19C1, TO 31-10-3, and applicable OSHA and AFOSH Standards.