BY ORDER OF THE COMMANDER
AIR FORCE MATERIEL COMMAND

AIR FORCE MATERIEL COMMAND
INSTRUCTION 21-100 VOLUME 2

22 JANUARY 2024

MAINTENANCE

DEPOT MAINTENANCE PRODUCTION

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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RELEASABILITY: There are no releasability restrictions on this publication.

OPR: HQ AFMC/A4MY

Certified by: HQ AFMC/A4M
(Col Jennifer M. Barnard)

Supersedes: AFMCI 21-100, 7 June 2022

Pages: 59

This instruction implements Air Force Policy Directive (AFPD) 21-1, *Maintenance of Military Materiel*, and provides directive guidance for maintenance management at the Air Force Materiel Command (AFMC) Centers organic depots as it applies to aircraft and associated aerospace equipment. Air Force Materiel Command Instruction (AFMCI) 21-100 is comprised of three volumes: **Volume 1**, *Depot Maintenance Principles*; **Volume 2**, *Depot Maintenance Production*; **Volume 3**, *Depot Maintenance Production Support*. A Volume and Chapter breakout is provided in **Attachment 2**. For policies and procedures used in planning and administering depot level contract maintenance programs, refer to Air Force Instruction (AFI) 63-101/20-101, *Integrated Life Cycle Management*, and DAFI 63-138, *Acquisition of Services*. This publication does not apply to United States Space Force, Air Force Reserve, or Air National Guard units. This publication applies to all AFMC military and civilian members and those with contractual obligation to comply with Air Force publications. However, if an AFRC unit is assigned or associated with AFMC where AFMC is the lead this guidance would be applicable to the AFRC unit. Headquarters (HQ) AFMC and Centers will develop supplements to implement the requirements of this instruction at their level and provide them to the Office of Primary Responsibility (OPR) of this instruction for review and approval before publishing. Supplements and addendums to this instruction will be written in accordance with Department of the Air Force Manual (DAFMAN) 90-161, *Publishing Processes and Procedures*, and must be provided to the OPR of this publication for review and approval prior to publication. Supplements are submitted to Air Force Materiel Command, Directorate of Logistics, Civil Engineering, Force Protection, and Nuclear Integration, Maintenance Division (AFMC/A4/10/A4M) @ **AFMC.A4M.Workflow@us.af.mil** Center level Supplements must identify and document all

Center required deviations (applicability, variance, exception, and differences in organizational placement of responsibilities/processes) in their supplement and addendums with the abbreviation (DEV). Place the (DEV) entry after the paragraph number and directly preceding the affected text, such as (AFSC) (DEV) Use the..., or (ADDED-AFSC) (DEV) Use the...). Only current and verified technical data, as authorized by Technical Order (TO) 00-5-1, *Air Force Technical Order System*, will be used for depot maintenance. All contractor requirements in this instruction must be included in a contract/grant/agreement to be enforceable. Refer recommended changes and questions about this publication to the OPR using Department of the Air Force (DAF) Form 847, *Recommendation for Change of Publication* (or equivalent). Route DAF Forms 847 (or equivalent) from the field through the Center to the appropriate Major Command (MAJCOM) functional manager. Ensure that all records created as a result of processes prescribed in this publication adhere to AFI 33-322, *Records Management and Information Governance Program*, and are disposed In Accordance With (IAW) Air Force Records Disposition Schedule (RDS), which is in the Air Force Records Information Management System (AFRIMS). This publication requires the collection and or maintenance of information protected by the Privacy Act of 1974 authorized by 5 USC 301, *Departmental Regulations*; 5 USC Chapter 53, *Pay Rates and Systems*, Chapter 55, *Pay Administration*, Chapter 81, *Compensation for Work Injuries* and Executive Order 9397, *Numbering System for Federal Accounts Relating to Individual Persons*. The applicable System of Record Notice T7335, Defense Civilian Pay System, is available at: **https://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570184/t7335/**. The waiver approval authority for requirements throughout this instruction is the publication Approving Official. Submit requests for waivers through the appropriate chain of command to the Publication OPR for consideration, using DAF Form 679, *Department of the Air Force Publication Compliance Item Waiver Request/Approval* (or equivalent). 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.

SUMMARY OF CHANGES

This instruction has been substantially revised and restructured into three volumes and must be reviewed in its entirety. Major changes include the incorporation of Guidance Memorandums, corrections, clarifications, and relevant information from other directives.

Chapter 1

DEPOT MAINTENANCE PRODUCTION LABOR ENTRY

1.1. Time and Attendance (TAA) Standards.

1.1.1. The Depot Maintenance Accounting and Production System (DMAPS) TAA is an information system that processes labor and attendance for Consolidated Sustainment Activity Group-Maintenance (CSAG-M) funded employees. The development and evolution of TAA has been predicated on the idea of having a standard means of entering labor transactions with minimal effort from the affected employee.

1.1.2. The goal for production labor data entry is accurate and properly formatted data through extensive on-line validation at the field element level such as Employee or Resource Control Center (RCC), Job Order Number (JON), Work Order, Operation Number, Environmental/Hazard (EH) Codes, proper leave, and overtime authorizations, etc. This is accomplished using extensive validation files and tables. TAA is an application of hours available: direct hours worked by Cost Center (CC) on each job order, indirect hours worked by cost center, and nonproductive (e.g., annual, sick, etc.) hours by cost center. For additional guidance, reference AFMCI 65-101, *Depot Maintenance Accounting and Production System-Financial Policy and Procedures for Depot Maintenance.*

1.1.3. HQ Air Force Sustainment Center (AFSC) will develop, implement, and maintain a standardized TAA system that will ensure the following labor standards are achieved.

1.1.3.1. Accurately record work and leave hours based upon an established tour of duty including alternative work schedule/flextime hour information. This requires pre-approved or positive acknowledgment from the approving official that the employee worked the established tour, and that TAA data is approved.

1.1.3.2. Record and report the number of hours of leave by type, credit hours, and compensating time used.

1.1.3.3. Collect actual hours or days worked and other pay related data, i.e., piecework, fee basis units/dollars, and differentials for each employee.

1.1.3.4. Collect data on employees who work temporarily in other or multiple pay classifications.

1.1.3.5. Capture actual labor data in hours, fractions of hours, or other units of measure as required.

1.1.3.6. Collect TAA data on a pay period basis (e.g., daily, weekly, biweekly).

1.1.3.7. Collect labor distribution hours based on the required classification code structure to include JON and Labor Operation (i.e., Task/Work Breakdown Structure).

1.2. System User Access. TAA has two basic areas of access: Default and TAA responsibilities.

1.2.1. Default access to TAA will be granted to all TAA users based on the granting of network access via a Department of Defense (DD) Form 2875, *System Authorization Access Request*, that is maintained at the sites and will require a Common Access Card (CAC) to access TAA. Default access users receive only the basic screens in TAA to transact labor and can only view

their own information. Default access defaults the employee id field to the user logged onto the system.

1.2.2. All users are expected to log into TAA and associate their CAC card with the Employee Identification (ID) they are assigned upon creation in TAA.

1.2.3. For TAA responsibilities and any additional need for information or access, use DD Form 2875 to gain access to TAA.

1.2.4. Employee removal from TAA.

1.2.4.1. For employees with DEFAULT access that leave the Depot Maintenance arena, an email or ticket will be sufficient to notify the TAA OPR to have the employee removed.

1.2.4.2. For employees with ELEVATED access that leave the Depot Maintenance arena, a DD2875 for deletion should be submitted to the TAA OPR to have employee removed.

1.2.4.3. For employees with ELEVATED access that work assignments change and ELEVATED access is no longer needed can be changed via email to the TAA OPR. Upon receipt of DD Form 2875, email or ticket to the TAA OPR, action will be taken within 3 BUSINESS days.

1.3. TAA OPR Responsibilities.

1.3.1. TAA OPR provide customer support using the System Administration capability assigned in TAA.

1.3.2. TAA customer support includes but is not limited to user notification of system problems, issued via the System Message and Daily Labor Correction Process (DLCP) Message; finalizing ‘New Hire’ employees record; breaking CAC associations; unlock accounts.

1.4. TAA Supervisory Responsibilities. Supervisors and Timekeepers must maintain employee time records on a timely basis in TAA.

1.4.1. It is the responsibility of the Supervisor or Timekeeper to notify the TAA OPR of any employee who retires or resigns outside of the Depot Maintenance organization, or transfers to another base as soon as an effective date has been determined.

1.4.2. Supervisory Employee Master Maintenance is the maintenance capability assigned to supervisors/timekeepers and ‘alternate supervisors’ to allow them to make limited changes to their employees’ master record. The Social Security Number (SSN) field is greyed out to accommodate American Federation of Government Employees (AFGE) concerns about the access to SSNs.

1.4.3. Certification and Attestation of time in TAA.

1.4.3.1. Supervisors are responsible for the accuracy and certification of employee timesheets. ONLY Supervisors are allowed to CERTIFY employees time. The certification of time and attendance is an authorization for the expenditure of government funds.

1.4.3.2. Employees are responsible for reporting their time accurately and must ATTEST to the accuracy of this time.

1.5. Labor Collection and Labor Processing.

1.5.1. Transacting and non-transacting are the two employee categories in TAA.

1.5.2. Labor Transactions.

1.5.3. Inventory Tracking System (ITS) (Q302, Impresa, Lean Depot Management System) Transactions.

1.5.4. Programmed Depot Maintenance Scheduling System (PDMSS) Transactions (Q302, Impresa).

1.5.5. Facility and Equipment Maintenance (FEM) Labor Transactions.

1.5.6. JON Labor Transactions.

1.5.7. Group Processing.

1.5.8. Bulk Processing.

1.5.9. Bulk Requirements.

1.5.10. Other TAA Transactions.

1.5.11. Hours Worked Outside of Schedules.

1.6. Contingency Procedures.

1.6.1. HQ AFSC will establish a site contingency operation when the TAA system or segments of the system are temporarily unavailable.

1.6.1.1. Labor Contingency.

1.6.1.2. Payroll Contingency.

1.7. TAA Batch Processing.

1.7.1. The scheduling of TAA Labor processing affects when labor/leave transactions are processed. HQ AFSC will develop processing procedures for the following.

1.7.2. First shift employees.

1.7.3. Second shift employees.

1.7.4. Third shift employees.

1.8. Related System Processing. System processing for production labor is accomplished through TAA and various maintenance production systems (e.g., Q302-ITS, IMPRESA-ITS, LDMS-ITS, Q302-PDMSS, Impresa-PDMSS, FEM, Job Order Production Number Master System (JOPMS/G004L). This processing is also related to several other systems which handle payroll, financial, and management information: Defense Industrial Management System (DIFMS), Defense Civilian Payroll System (DCPS) and DMAPS Data Store (DDS).

1.9. Other Systems associated with TAA.

1.9.1. RCC Skill Code System (RSC).

1.9.2. JOPMS/G004L.

1.9.3. Depot Cost and Schedule Tool (DCAST).

1.9.4. Integration Engine/DMAPS Data Store (IE/DDS).

Chapter 2

WORK CONTROL DOCUMENTS AND TECHNICAL DATA

2.1. Work Control Document (WCD). Timely and complete workload planning is essential to accomplishing the depot production process. Workload planning is reflected in the WCDs. To develop accurate, efficient, and effective WCDs, it is critical to integrate all workload planning and technical requirements that support the maintenance production functions.

2.1.1. The WCD is the official record for work including control, identification, certification, and routing of items. ***WCDs are not technical data*.** The WCD is an instructional document summarizing sequenced steps and the TO references for processing the item. WCDs are developed by authorized planner/Industrial Engineering Technicians (IETs) IAW approved technical data. The WCD is the record documenting that the task was performed by certified technicians IAW authorized technical data. If conflicts exist between the WCD and the technical data, the technical data will prevail. WCDs provide a complete audit trail of work performed. WCDs must be auditable to the technician's training record. All critical tasks must be listed and certified as a separate line item on the WCD. HQ AFSC will:

2.1.1.1. Ensure WCDs are developed for all programmed and temporary workloads.

2.1.1.1.1. WCDs will be auditable and meet the requirements of Air Force Manual (AFMAN) 63-143, *Centralized Asset Management Procedures*, TO 00-5-1, TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*, and TO 00-25-4, *Depot Maintenance of Aerospace Vehicles and Training Equipment*. WCDs will contain all the data elements necessary to comply with maintenance data documentation requirements IAW TO 00-20-2, *Maintenance Data Documentation*.

2.1.1.1.2. WCDs will be reviewed and correlated to Production Acceptance Certification (PAC) tasks. WCDs will be reviewed and updated to reflect compliance with the standard labor classification criteria. For additional detail, reference **Volume 1, Chapter 4** of this instruction.

2.1.1.2. Ensure each Air Logistics Complex (ALC) designates WCD focal points who will serve as the OPR for WCD program directives and will assist all production groups with program requirements.

2.1.1.3. Ensure all maintenance performed by AFSC personnel is reviewed to identify critical maintenance tasks/operations and verify inspection codes for accuracy.

2.1.1.3.1. Critical tasks/operations are any tasks/operations that affect form, fit, and function, and has an inspection/certification identified by the Production Planning Team (PPT).

2.1.1.3.2. If there are PPT disagreements on critical tasks, the Cognizant Engineering Authority (CEA) will be contacted, and the response documented.

2.1.1.4. Ensure standardized methods are documented to denote status on WCDs and to certify that work has been accomplished and completed as required by specific technical data.

2.1.1.5. Develop, implement, and maintain standardized procedures to manage and control the methods used to certify/stamp WCDs.

2.1.2. Pre-Production Planning Team (PPPT). The PPPT is the initial process for developing WCD.

2.1.3. Production Planning Team (PPT). The purpose of the PPT is to further develop, plan and refine workload requirements as they pertain to WCDs.

2.1.4. Types of WCDs. Only authorized types of WCDs will be used for production maintenance.

2.1.5. Technical Information on WCDs.

2.1.5.1. Technical Data Usage Requirement.

2.1.5.2. Specifications and Tolerances on WCDs.

2.1.5.3. Data Collection on WCDs.

2.1.5.4. Inspection/Certification Codes.

2.1.5.5. Critical Task/Operation Identification.

2.1.5.6. Secondary Certification.

2.1.5.7. Multi-Task/Operation, Task/Operation, and Team Task/Operation Certification.

2.1.5.8. Changing Inspection/Certification Codes.

2.1.6. Rework data collection and analysis are essential to promoting efficient and effective processes. Rework is any work that is being re-accomplished to repair or replace failed material or end items or to correct a work discrepancy where the discrepancy is the direct result of incorrect workmanship after the acceptability or completion of the work task/operation or end item has been stamped on the WCD by production personnel.

2.1.6.1. Documentation of Rework.

2.1.6.2. Rework WCD.

2.1.7. Routed Items. Routing may be classified as either job routing or process routing. Routing may involve multiple RCCs/CCs) or may occur within a single shop.

2.1.7.1. Job Routing.

2.1.7.2. Process Routing.

2.1.8. Non-programmed work.

2.1.9. Deficiency Report (DR) Data. Deficiency data reported IAW TO 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution (DRI&R)*, to include aircraft/engine acceptance discrepancies must be analyzed by the Production Group Quality Assurance (QA) Office. Technical data and WCD problems contributing to reported defects must be corrected. Changes to these documents must be formally requested and tracked to ensure effectiveness as part of the corrective actions as appropriate. The QA program must provide feedback to managers and supervisors.

2.1.10. Condemned Parts WCD Documentation.

2.1.11. WCD Change Request Procedures.

2.1.12. Roles and Responsibilities. HQ AFSC will develop and document roles and responsibilities for the following:

2.1.12.1. PPT.

2.1.12.2. IET Planner.

2.1.12.3. Production Supervisor.

2.1.12.4. Maintenance Technician/Mechanic.

2.1.12.5. Production Controller/Scheduler.

2.1.12.6. QA.

2.1.12.7. ALC Production/Process Engineering.

2.1.12.8. WCD Focal Point.

2.1.13. Stamps. Stamps are used by maintenance personnel to denote status on WCDs. Maintenance stamps will be issued to maintenance personnel to certify, by stamping and dating, that the work has been accomplished and completed as required by specified technical data. **Note:** Electronic stamps are acceptable. Use of initials and employee numbers are not permitted. HQ AFSC will develop:

2.1.13.1. Procedures to maintain control of maintenance stamps will include, at a minimum, the following:

2.1.13.1.1. Designation of organization responsible for issue and control of stamps.

2.1.13.1.2. Administrative procedures/criteria for request, control, accountability, revocation and recall of stamps.

2.1.13.1.3. Documentation of request, issue receipt relocation, loss, and annual inventory of stamps.

2.1.13.1.4. Only stamps issued and controlled through the organization Stamp Monitor will be used for the certification/verification of depot maintenance.

2.1.14. Electronic Stamps. HQ AFSC will develop, implement, and maintain standardized procedures for the issue, use, and control of electronic stamps.

2.1.15. The stamps listed below have mandatory issue and use requirements and may only be issued to and used for the purpose specified.

2.1.15.1. Maintenance Stamp (M).

2.1.15.2. Scheduler Stamp (C).

2.1.15.3. Non-Destructive Inspection (NDI) Stamp (N).

2.1.15.4. Production Supervisor Stamp (P).

2.1.15.5. Planning Stamp (IET).

2.1.15.6. Test Technician Stamp (T).

2.1.15.7. Quality Stamp (Q).

2.1.15.8. Required Inspection Stamp (RII).

2.1.15.9. Final Inspector Stamp (FI).

2.1.15.10. Maintenance Review Team (MRT) and Project Administration Officer (PAO) Stamps (Program Office use only).

2.2. Technical Data. Technical data used in depot maintenance must be complete, accurate, effective, and efficient. Maintenance personnel, at all levels, are responsible to report deficiencies and make improvements in a timely manner, where applicable. When work cannot be performed using the TO as written, an authorized deviation must be processed and approved IAW the procedures in Air Force Materiel Command Manual (AFMCMAN) 63-1202, *Air Force Materiel Command Engineering Technical Assistance Request (ETAR) Process*.

2.2.1. Only current and verified Technical Data will be used for depot maintenance. Process and procedures on the use and control of Technical Data will be IAW TO 00-5-1.

2.2.2. HQ AFSC will develop procedures to control other forms of technical data when extracts are made (e.g., engineering drawings/Mylars, D-2 drawings, process specifications, Commercial Maintenance Manuals [CMMs], Commercial Off The Shelf [COTS] products, etc.) IAW AFI 63-101/20-101. These procedures will be approved by the AFSC/CC. For additional information reference TO 00-5-1, paragraphs 3.11.4. and 7.4.

2.2.3. Technical Data Extracts. Extracts are 'printed or downloaded' copies of any technical information including contractor technical data from authorized electronic repositories/databases or from authorized paper technical data libraries, (e.g., copies of TOs, Process Orders, Mil-Stds, a Special Handling (SH) Air Force Technical Order (AFTO) Form 252, *Technical Order Publication Change Request*, Engineering drawings/blueprints, Mylars, Electronic Work Instructions, Technical Manual Work Instructions, Process Specifications, etc.). Technical Data downloaded from authorized repositories and/or paper technical data are considered organizational property. At no time will technical data or portions of technical data be copied, e- mailed or provided to an unauthorized user (contractor, individual, etc.).

2.2.3.1. Use of written CEA technical data is authorized when there is no formalized technical data available.

2.2.3.2. Use of unapproved technical data (e.g., notes, Statements of Work [SOWs], WCDs, manuals, drawings, emails, etc.) including uncontrolled copies of formal TOs is prohibited.

2.2.3.3. Work Specs (e.g., SOWs, etc.) are not an authorized source of technical data. The contractor's SOW may be considered an authorized source of technical data when approved by the cognizant or System Program Office (SPO)/ Supply Chain Manager (SCM) Engineering Authority.

2.2.4. Specific TOs take precedence over general TOs. When specific TOs does not contain procedures or processes (e.g., cleaning, plating, etc.), general TOs containing this information will be used. If there is a difference in requirements between these documents, the more stringent requirement applies.

2.2.5. The current version of TOs will always be used. For all dual based TOs (i.e., hard copies and electronic distribution), the units will consider the 'medium of primary use' at the point of maintenance as the current version. For aircraft in storage at Aerospace Maintenance

and Regeneration Group (AMARG), use the technical data prescribed by the requesting authority.

2.2.6. When a depot production area is required to perform maintenance using a TO identified as 'preliminary', the Program Manager/Supply Chain Manager (PM/SCM) Chief Engineer will authorize the use of the 'preliminary' TO IAW TO 00-5-3, *Air Force Technical Order Life Cycle Management.*

2.2.7. Technical Data Procedures. HQ AFSC will develop, implement, and maintain technical data procedures for the following:

2.2.7.1. Technical data extracts.

2.2.7.2. Engineering Drawings.

2.2.7.3. Mylars.

2.2.7.4. Process Specifications.

2.2.7.5. Other Authorized Technical Data.

2.2.7.6. Disposition of Technical Data Extracts.

2.2.7.7. Technical Data Availability.

2.2.7.8. Reclamation removal work packages, copies of TO extracts IAW TO 00-5-1 and 309th AMARG specific instructions.

2.2.7.9. TO Changes and Authorized Deviations. When work cannot be performed using the TO as written, an authorized deviation must be processed and approved.

2.2.7.10. Posting TO Changes. Changes to TOs must be monitored and documented, ensuring no process is compromised. The organization responsible for posting changes to TOs will publish and provide a list of changes to the appropriate engineering organization, production supervisor, and planning organization.

Chapter 3

TOOL AND EQUIPMENT MANAGEMENT

3.1. Introduction. The primary focal point of this program is the individual tool user; however, it is necessary to have support, training, and constant emphasis from all levels of management for the program to be effective.

3.2. Program Objectives. The objectives of the tool and equipment program is to reduce tool cost through strict effective control, security, and accountability of assets, and to prevent and eliminate Foreign Object Damage (FOD) to aircraft, engines, missiles, training, and support equipment (SE). Commanders, and key leaders are responsible for standardization in executing an effective tool program. The tool management program outlined represents the minimum program requirements.

3.3. Responsibilities.

3.3.1. Tool Control Manager (TCM) Responsibilities. HQ AFSC will ensure a TCM position is established at each ALC. The selected individual will be appointed in writing. The TCM will serve as a liaison between the tool program, the ALC, and the respective Groups. TCM responsibilities will include but are not limited to:

3.3.1.1. Policy implementation.

3.3.1.2. Lost tool program management.

3.3.1.3. Monitoring of loaned tools.

3.3.1.4. Monitoring of QA findings for trends.

3.3.1.5. Developing corrective action plans for systemic tool issues.

3.3.1.6. Brief the ALCs on the tool program status, if required.

3.3.2. HQ AFSC will ensure the ALCs manage and maintain a supply of common hand tools and other items necessary to accomplish depot maintenance.

3.4. Tool Accountability.

3.4.1. Tool Kit (TK) custodians are responsible for tool and equipment accountability and control. When a person signs for a tool or piece of equipment, the individual is accountable for the item until it is returned to its proper location. Accountability transfers back to the TK custodian through a representative or tool room employee.

3.4.2. TK Custodian. Supervisors serving as a TK custodian will be designated in writing. Alternate TK custodians will be designated in writing and the documentation will be maintained at the tool crib.

3.4.3. HQ AFSC will ensure all units utilize a command approved Maintenance Information Systems (MIS) for accountability and control of tools and equipment. Aircrew Flight Equipment (AFE) Sections will follow guidance in AFMAN 11-301V1, *Aircrew Flight Equipment (AFE)*. The approved MIS will be used to:

3.4.3.1. Track the issuance and receipt of all assigned tools, equipment, tool kits, Hazardous Material (HAZMAT) items, and TOs.

3.4.3.2. Track authorizations/restrictions for special tools/equipment by individual.

3.4.3.3. Track spare, lost, and damaged (removed) tools.

3.4.3.4. Develop and manage TK inventories.

3.4.3.5. Develop and manage deployment kits (i.e., import/export).

3.4.3.6. If the approved MIS is not available (i.e., at a deployed location), units may use one of the following methods: AF Form 1297, *Temporary Issue Receipt*, or vendor supplied system for Point of Use (POU) machines.

3.5. Tool Kits.

3.5.1. Tool Kit (TK). A container used to store tools or equipment and to maintain positive control and ease of inventory. TKs will be standardized to the maximum extent possible by template and have an accompanying Tool Kit Custody Receipt Listing (TKCRL).

3.5.2. TK Types:

3.5.2.1. Consolidated Tool Kit (CTK). Tool kits issued to a supervisor for use by one or more individuals in a work center.

3.5.2.2. Individual Tool Kit (ITK). A standardized collection of tools organized by task, skill, work area, or a combination thereof which is issued to an individual.

3.5.2.3. Dispatchable Tool Kits (DTK). Tool kits designed for checkout will be taken to a job site with one individual responsible for the tool kit.

3.5.3. Tool Set (TS) Guidance. Tools and equipment issued from the tool crib/center which contains multiple parts, sizes, attachments, or fittings. TSs (e.g., socket set, tap and die sets, etc.) do not require a template/TKCRL but will have an accompanying inventory list.

3.5.3.1. Counting Pieces in a set. Tool sets are identified on the TKCRL by total number of items in the set.

3.5.3.2. The tool set case/container will be counted as part of the set.

3.5.4. HQ AFSC will develop, implement, and maintain standardized procedures for the following:

3.5.4.1. TK Content/Design Determination. TK contents will be standardized by skill, task, mission, work area, or a combination thereof to the maximum extent possible.

3.5.4.2. TKCRL management.

3.5.4.3. TK issue.

3.5.4.4. Template change.

3.5.4.5. TK turn-in transfer.

3.5.4.6. Non-mobile cabinets.

3.5.4.7. Shadow/silhouette.

3.5.4.8. CTK used by more than one person.

3.5.4.9. Locking/securing TKs.

3.5.4.9.1. HQ AFSC will ensure all individuals will secure/lock tools, TK, and equipment anytime the tool or TK is left unattended to eliminate unauthorized personnel access.

3.5.4.9.2. Identification tags or dust caps attached to tools/equipment will be secured in a manner that will preclude any possibility of FOD.

3.5.4.9.3. Tool kit locks will be used to provide a physical barrier to opening the container lid, drawer, or door and prevent the unauthorized removal of tools.

3.5.4.9.4. Dispatchable tools, equipment, and TKs are required to be locked and/or secured when left unattended.

3.5.4.10. CTK/DTK key security.

3.5.4.11. Test, Measurement, and Diagnostic Equipment (TMDE) in TKs.

3.5.4.12. Supplemental Listing. The supplemental listing is a listing of all items kept in TKs that are not listed on the TKCRL.

3.5.4.13. Removed and/or broken tools.

3.5.4.14. Replacement tools. Replacement tools will not be issued without receipt of the unserviceable tool or documentation indicating the tool is lost and reported.

3.5.4.15. Tool Disposal. Ensure tools are disposed through the Defense Logistics Agency Disposition Services (DLADS) or demilitarization contractors.

3.5.4.16. Safety Concerns.

3.5.4.16.1. Flashlights, lanterns, portable lighting devices and light sources will conform to the requirements of TO 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*, when used during servicing operations, TO 1-1-3, *Inspection and Repair of Aircraft Integral Tanks and Fuel Cells*, when used during fuel cell maintenance, and Defense Explosive Safety Regulation (DESR) 6055.09_ AFMAN 91-201, *Explosives Safety Standards*, when used in explosive environments. **Note:** Aircraft and equipment TOs may dictate additional restrictions.

3.5.4.16.2. For deployment purposes, ensure equipment, tools, and HAZMAT items are properly identified, prepared, and documented IAW AFI 10-403, *Deployment Planning and Execution*.

3.5.4.16.3. Discard removable (i.e., slide on) pocket clips from tools (e.g., flashlights, continuity testers, small screwdrivers, etc.) when possible, prior to placement in tool kits used in critical FOD areas. Do not disassemble/damage tools for sole purpose of removing clips (i.e., tape measures), rubber switch guards, etc. The sharp edge of blades will not be exposed when not in use (e.g., buried in foam, put in a container, etc.).

3.5.4.17. Temporary loaned tools.

3.5.4.18. Other items in TKs.

3.5.4.18.1. HAZMAT. All tools containing HAZMAT (e.g., grease guns, shrouded tools/equipment, etc.) will follow AFI 90-821, *Hazardous Communication (HAZCOM) Program,* and local ALC guidance.

3.5.4.18.2. Consumables. Consumables may be placed in TKs and will be identified on the supplemental listing.

3.5.4.18.3. Expendables.

3.5.4.18.4. Personal Items.

3.5.4.18.5. Personal Protective Equipment (PPE).

3.5.4.18.6. Personal Tools. Personally purchased tools (e.g., mini-mag flashlights, Leatherman's, buck knives, etc.) are NOT authorized on the flightline or in any maintenance area.

3.6. Markings and Traceability.

3.6.1. Marking of TKs. Marking of TKs, equipment, and tools will be done by a method that is legible. Tools, common accessories, support equipment, and Custodian Inventory Report (CIR) equipment issued individually or as part of a tool kit will be marked prior to issue with the ALC code and a number identifying it to the proper tool issue center, Production Support Center (PSC), or back shop. ALC tool marking codes are as follows:

3.6.1.1. 309 AMARG – **AM**

3.6.1.2. OO-ALC, Hill AFB – **HL**

3.6.1.3. OC-ALC, Tinker AFB – **OC**

3.6.1.4. WR-ALC, Robins AFB – **WR**

3.6.2. HQ AFSC will develop, implement, and maintain standardized tool marking procedures for the following:

3.6.2.1. Grease guns, dispensing cans, spray bottles, pump oilers, and similar containers.

3.6.2.2. Fiberglass handled hammers.

3.6.2.3. TKs, tools, and dispatchable equipment.

3.6.2.4. TMDE.

3.6.2.5. Tools/items that are assembled and are not intended to be disassembled during use.

3.6.2.6. Tools/items requiring disassembly prior to storage.

3.6.2.7. Unserviceable tools and tools removed from TKs.

3.6.2.8. Program Owned Tooling/Support Equipment (SE).

3.6.2.9. All TKs will be assigned a TK ID and each tool in the TK will be marked with the TK Identification (ID) number prior to initial issue.

3.6.3. Tools impractical or too small to mark.

3.6.3.1. Tools impractical to mark (e.g., hacksaw blades, rulers, due to method of use, size, or composition of material) will be identified by an 'N' on TKCRL or supplemental listing.

3.6.3.2. Tools too small to mark will be placed in a marked container. Containers (e.g., cases, pouches, tubes, boxes, etc.) will be shadowed and marked with the TK number and quantity. Containers count as part of the kit.

3.6.3.3. Tools will be controlled, and lost tool procedures will apply.

3.7. Inventory and Inspection Requirements. HQ AFSC will develop, implement, and maintain standardized procedures for tool inventory and inspection to include the following:

3.7.1. TK Custodian Daily Inventory.

3.7.2. On-Site TK Transfer Inventory.

3.7.3. Long Term TK Storage Inspections.

3.7.4. Tool Crib/Room/PSC Inventory.

3.7.5. TK Annual Inspections.

3.8. Supervisory Inspections. Supervisors are responsible for ensuring all tool kits assigned to them and their subordinates are inspected at least once every 365 days. The supervisor's inspections will include verification of the TKCRL and supplemental listing against the tool kit contents as well as ensuring each item has a matching identification number. The supervisor or designated representative must inspect toolboxes under their control to ensure:

3.8.1. All items are properly shadowed/inlayed/silhouetted/outlined except for tools inside a Point of Use Station (POUS).

3.8.2. All items are properly marked or etched excluding TMDE and items too small and impractical to mark/etch.

3.8.3. Kit content matches.

3.8.4. Tool kit is free of foreign objects.

3.8.5. No more than one personal drawer is used, and only personal items will be stored in the personal drawer.

3.8.6. All tools are serviceable and if not, ensure proper documentation and replacement action is taken.

3.8.7. TMDE is not overdue for calibration IAW TO 00-20-14, *Air Force Metrology and Calibration Program*.

3.8.8. Procedures for requiring a second party or on-duty supervisor inspection of TKs when conditions warrant a single person shift. The same individual that signs out a TK cannot sign it back in.

3.9. Procedures for Lost/Found Tool Items. HQ AFSC will develop, implement, and maintain standardized procedures for lost/found tool items to include:

3.9.1. Lost tools.

3.9.2. Found tools.

3.9.3. Aircraft specific requirements.

3.9.4. Cross group lost tool procedures.

3.9.5. Lost tool in an inaccessible aircraft area.

3.9.6. Off-base reporting.

3.10. Rag Control.

3.10.1. A rag is defined as a remnant of cloth purchased in bulk or a standardized, commercial quality, vendor-supplied shop cloth used in general industrial, shop, and flightline operations. Cheesecloth is considered a rag; however, paper products/paper towels are not considered rags. Any paper products/rags used will meet FOD program requirements and the base Hazardous Waste Management Plan and be IAW AFMAN 32-7002, *Environmental Compliance and Pollution Prevention*.

3.10.2. HQ AFSC will develop, implement, and maintain standardized procedures to ensure positive control of rags.

3.11. Electronic Tools (E-Tools).

3.11.1. Electronic Tools (eTools). eTools are portable electronic devices (PEDs) (such as a laptop computer or handheld device) that operate in a disconnected mode and/or, are certified to inter-operate on AF networks, are mission critical because they are the primary method for viewing electronic technical publications, and, in some cases, are used to exchange maintenance data with an approved MIS at the point of maintenance.

3.11.2. HQ AFSC will develop, implement, and maintain standardized procedures to maintain positive control of assigned eTools to included:

3.11.2.1. Management of eTools IAW TO 00-5-1, TO 31S5-4-eTool-1, *eTool and Commercial Mobile Device Set up and Management*, and **Volume 1, Chapter 1** of this instruction.

3.11.2.2. Tracking dispatchable eTools in command approved system.

3.11.2.3. Ensuring only serviceable eTools with current technical data are available for checkout.

3.11.2.4. Making maximum use of eTool warranties.

3.11.2.5. Ensuring eTools are used for official and authorized purposes IAW TO 31S5-4-eTool-1, 17 Series instructions, and **Volume 1, Chapter 1** of this instruction.

3.11.2.5.1. No unauthorized files or software (e.g., games, mp3s) will be loaded onto any e-Tool.

3.11.2.5.2. No unauthorized external media devices will be used to retrieve data from removable hard drives.

3.11.2.6. Coordination with the local Cybersecurity Liaison and/or Information System Security Managers to identify published local guidance on restrictions for the use of eTools/PEDs in classified processing areas.

3.11.2.7. Development of procedures for shipping TOs, eTools, and required support equipment needed to ensure eTools availability to support Depot Field Teams.

3.12. Equipment and Accessories.

3.12.1. It is not necessary to include in a TK equipment and accessories which do not present a FOD potential and will not leave the work center, support section, or tool room. However, such equipment and accessories must have designated storage locations established. AFSC will develop, implement, and maintain standardized procedures for equipment and accessories to include the following:

3.12.1.1. Accountability.

3.12.1.2. Marking.

3.12.1.3. Storage.

3.12.1.4. Inventory.

3.12.1.5. Industrial shop machinery accessories/attachments.

3.13. Temporary Duty (TDY) Teams. HQ AFSC will develop, implement, and maintain procedures for the issue, receipt, and control of TKs used to support TDY teams and tool control procedures for TDY personnel. Tools issued to personnel to support TDYs will be tracked in the command approved MIS.

3.14. Point Of Use Station (POUS). POUS may be identified as a vending machine type of equipment, a cabinet, a Vidmar, a locker system, a controlled room, a toolbox, or any combination of the various types. HQ AFSC will develop, implement, and maintain standardized procedures for POUS.

3.15. Maintenance Support Group (MXSG)/Authorized Contractor Tool Crib. HQ AFSC will develop, implement, and maintain procedures for MSG/Authorized Contractor Tool Crib operations within the ALCs.

3.16. Locally Manufactured/Modified Tools and Equipment (LM/MT&E). LM/MT&E is defined as items (to include fixtures) developed, manufactured, modified, and controlled by the ALCs. HQ AFSC will develop, implement, and maintain standardized procedures for the management of LM/MT&E.

3.17. Training.

3.17.1. For a strong, viable tool and equipment management program, all personnel who use tools and equipment in their daily work requirements must receive appropriate training. This training must stress all aspects of tool control including individual responsibilities and the consequences of noncompliance. Training programs can be a combination of classroom instruction, on the job training (OJT), and supervisory briefings.

3.17.2. Training Requirements. Each ALC will use CHPMAS0004500SU - Tool Control and Accountability Program (Initial) for initial training and CHPMAS0004501DL - Tool Control and Accountability Program (Refresher) for refresher training. The Command courses can be modified to include local procedures. All employees who work with tools and equipment, including QA, and the immediate supervisor will receive the initial and refresher tool control training. Initial training will be requested within 30 days of assignment to a maintenance position. Refresher training is required triennially (i.e., every 36 months) for employees or supervisors of employees who use tools and/or equipment in their work centers.

3.17.3. Documentation. All tool and equipment management training will be documented in the Training Scheduling System-Production Acceptance System (TSS-PAC).

3.18. Supervisor Initial Work Center Briefing.

3.18.1. HQ AFSC will develop, implement, and maintain standardized procedures to ensure supervisors conduct an initial work center specific tool and equipment management briefing with newly assigned individuals prior to first time use of tools/equipment or within 30 days of assignment. Briefing will include accountability procedures and lost and found tool/item procedures at a minimum.

3.18.2. Ensure all individuals including contractors in TDY status, or those that are transferred or loaned from another unit, receive a work center briefing prior to initial use of tools/equipment in that area.

Chapter 4

FOREIGN OBJECT DAMAGE PREVENTION AND DROPPED OBJECT PREVENTION PROGRAMS.

4.1. Foreign Object Damage (FOD) Prevention and Dropped Object Prevention (DOP) Programs.

4.1.1. FOD is any damage to an aircraft, engine, aircraft system, component, tire, munitions, or SE caused by foreign objects which may or may not degrade the required safety and/or operational characteristics of the aforementioned items. The two categories of FOD areas are critical and non-critical. FOD critical areas are where mission-critical maintenance is performed (e.g., on-aircraft, jet engine, missile munitions, electronics, commodities, fuel cell, major sub-assembly, support equipment, and any other mission-critical areas where strict FOD controls are required). Non-critical FOD areas are areas not defined previously. HQ AFSC will identify and document critical/non-critical FOD areas.

4.1.2. A dropped object (DO) is any aircraft part, component, surface, or other item lost during aircrew operations, unless intentionally jettisoned, from engine start to engine shutdown.

4.1.3. HQ AFMC/A4/10 is the OPR for the AFMC FOD/DOP Programs and will ensure effective FOD/DOP programs are established. All personnel (military, civilian, and contractors) working in, on, around, or traveling through areas near aircraft, munitions, Aerospace Ground Equipment (AGE), engines, or components thereof will comply with FOD/DOP program requirements.

4.2. FOD/DOP Program Responsibilities. The primary Command FOD/DOP Program Manager is assigned to HQ AFMC/A4M.

4.2.1. The Command FOD/DOP Program Manager will:

4.2.1.1. Clarify policy and assist units in resolving FOD/DOP issues.

4.2.1.2. Work with other Major Command (MAJCOM) FOD/DOP Program Managers to resolve FOD/DOP issues between the Complexes, Centers, and owning Commands.

4.2.1.3. Develop FOD/DOP incident reporting procedures.

4.2.1.4. Maintain the AFMC Propulsion Management Sharepoint site and provide reports to the HQ AFMC/A4/10 when requested.

4.2.1.5. Establish the Command FOD Rate Standard. The AFMC FOD Rate Standard for AFSC and subordinate units is 3.0.

4.2.1.5.1. FOD rates for each ALC will be computed as follows: Number of Preventable FODs (damage exceeding $50K) ÷ Aircraft flying hours X 1,000 = FOD rate. Aircraft flying hours will be computed using acceptance flights, Functional Check Flights (FCF), ground runs, and the number of un-installed engine test cell runs.

4.2.1.5.2. The FOD Rate Formula as shown in **Table 4.1** will be used by AFSC and subordinate units to calculate AFMC FOD rates.

Table 4.1. AFMC FOD Rate Formula.

$\frac{\text{Preventable FODs (> \$50K Damage)}}{\text{Aircraft Flying Hours}} \times 1000 = \text{FOD Rate}$

4.2.2. HQ AFSC will:

4.2.2.1. Assign a Center FOD/DOP Program Manager.

4.2.2.2. Develop, implement, and maintain detailed guidance and procedures to supplement the Command FOD/DOP Program. Directives will outline organizational responsibilities for each ALC, ABW, and any units which fly, service, or maintain aircraft.

4.2.2.3. Develop and implement a FOD/DOP training program. For additional guidance, reference AFI 36-2650, *Maintenance Training*, and AFI36-2650_AFMCSUP, *Maintenance Training*.

4.2.2.4. Develop, implement, and maintain standardized procedures to collect FOD/DOP incident reports from tenant organizations.

4.2.2.5. Follow Command FOD/DOP incident reporting procedures.

4.2.2.6. Investigate FOD/DOP incidents from transient aircraft and provide the home station FOD/DOP Program Manager with sufficient data to generate a report for trending and tracking purposes.

4.2.2.7. Investigate each FOD/DOP incident to determine the precise cause and ensure positive corrective action is accomplished. When a materiel or design deficiency is the cause, or suspected cause, a DR will be submitted IAW TO 00-35D-54 even when an exhibit is not available.

4.2.2.8. Establish a process to report cut tires to airfield management upon discovery so the taxiways and runways can be inspected for possible foreign objects.

4.2.2.9. Develop, implement, and maintain detailed guidance and procedures to supplement the Command FOD/DOP Programs. Directives will outline ALC organizational responsibilities for flightlines, runways, taxiways, parking ramps, and outside maintenance areas that are shared with the ABW and tenant units.

4.3. Additional AFSC Responsibilities. HQ AFSC will ensure detailed guidance is developed, implemented, and maintained for the following:

4.3.1. AFSC FOD/DOP Monitor.

4.3.2. Air Base Wing (ABW)/ALC FOD/DOP Monitor.

4.3.3. FOD/DOP Focal Point.

4.4. Foreign Object Damage (FOD) Prevention Program.

4.4.1. The AFSC FOD Prevention Program must address, at a minimum, the following:

4.4.1.1. Capping and plugging.

4.4.1.2. Standardized flight line clothing policy.

4.4.1.3. Procedures for jewelry and other items worn in maintenance areas.

4.4.1.4. Procedures for escorting visiting personnel.

4.4.1.5. Procedures for the control of work order residue.

4.4.1.6. Teardown processes.

4.4.1.7. Procedures to control work area foreign objects.

4.4.1.8. Procedures to ensure pilots and aircrew account for all equipment and personal items.

4.4.1.9. FOD walks/sweeps.

4.4.1.10. Standardized procedure to obtain FOD incident reports from tenant organizations.

4.4.1.11. FOD discovered during Depot/Functional Flight Test.

4.4.1.12. FOD discovered upon removing aircraft from Long-Term Storage at 309 AMARG.

4.4.1.13. FOD procedures before and after engine runs.

4.4.1.14. Proper use of FOD Containers.

4.4.1.15. Vehicles and towed equipment.

4.4.1.16. Grounding Cables.

4.4.1.17. Removal of ID tags and bands.

4.4.1.18. Publicity.

4.5. FOD/DOP Reporting procedures.

4.5.1. The AFMC Propulsion Management Sharepoint site will be used by AFSC and subordinate units to report all FOD/DO incidents. Use of the site ensures the reports are properly structured and all pertinent information is captured. The site will automatically notify the AFMC and AFSC FOD/DOP monitors when reports are generated, changed, or closed. The site provides for the following:

4.5.1.1. 24 Hr. Notifications. Used to meet the 24-hour reporting requirement when additional information is still being gathered for the initial report. If the 24-hour notification is used, an initial report must be generated within two weeks of the date of the incident.

4.5.1.2. Initial Reports. Uploaded to the AFMC Propulsion Management site by the reporting unit. Initial reports will be created within 24 hours of the FOD/DOP incident and will remain open until the incident investigation is completed.

4.5.1.3. Updates to reports. If significant information is collected on a FOD/DOP incident, updates can be made to an open report prior to the final closure of the report.

4.5.1.4. Final Reports. The FOD/DOP report is marked final and closed in the AFMC Propulsion Management site by the reporting unit after the incident investigation is completed.

4.5.2. The AFSC FOD/DOP Manager will:

4.5.2.1. Ensure HQ AFMC/A4M receives an initial FOD/DOP notification/report within 24 hours of the occurrence. The final report will be submitted after the investigation is complete. Initial and final FOD/DOP reports are submitted via the AFMC Propulsion Management Sharepoint site. Reports will be maintained for a minimum of 24 months.

4.5.2.2. Provide monthly ALC FOD rates to HQ AFMC/A4M. Updates will be made using the AFMC Propulsion Management Sharepoint, Monthly FOD Reporting site.

4.5.2.3. Notify the owning organization within 24 hours when FOD/DO is discovered on a transient aircraft, depot input/output, Engine Regional Repair Center (ERRC), or Centralized Repair Facility (CRF) engine. An informational copy of the FOD/DOP report must be provided to the owning organization's safety office and FOD/DOP monitor to ensure compliance with Department of the Air Force Instruction (DAFI) 91-204, *Safety Investigations and Reports*. Aircrews must ensure proper documentation in the AFTO Form 781A, *Maintenance Discrepancy and Work Document*, or electronic equivalent has been completed. If the FOD/DO is discovered during the receiving/induction inspection at depot, ERRC, or CRF engine, it will be tracked/charged to the owning MAJCOM unit.

4.6. FOD Classifications. FOD incidents are classified as preventable and non-preventable. Only preventable FOD over $50K (parts and labor) will be chargeable to the FOD rate.

4.6.1. FODs are considered preventable except when:

4.6.1.1. Caused by natural environment or wildlife. This includes hail, ice, animals, insects, sand, and birds. Report this type of damage IAW DAFI 91-204.

4.6.1.2. Caused by internal engine materiel failure if damage is confined to the engine.

4.6.1.3. Caused by materiel failure of an aircraft component if the component failure is reported as a DR using the combined mishap DR reporting procedures of DAFI 91-204 and TO 00-35D-54.

4.6.1.4. Found during depot overhaul for maximum operating time.

4.6.2. Preventable FOD over $50K incurred at test cell or on trim pad will be chargeable to the FOD rate.

4.7. FOD/DOP Investigations. Each FOD/DO incident will be investigated to determine the cause and preventive action. Immediately remove from service any aircraft, missile, drone, support equipment, engine, or component rendered unsafe for use when known or suspected FOD/DO is discovered. HQ AFSC will develop, implement, and maintain FOD/DOP investigation procedures.

4.8. FOD/DOP Training. HQ AFSC will ensure initial, and refresher FOD/DO awareness and prevention training are conducted and documented for all personnel who, in the performance of

their assigned duties, work in or travel through maintenance areas, flightline areas, etc. For additional guidance, reference AFI 36-2650_AFMCSUP.

4.9. Supervisor Briefing. HQ AFSC will ensure maintenance supervisors conduct the following FOD/DOP briefings:

4.9.1. Initial work center briefing.

4.9.2. Quarterly briefing.

4.10. FOD/DOP Committee Meetings.

4.10.1. HQ AFSC will ensure quarterly FOD/DOP committee meetings are held and will designate mandatory attendees.

4.10.2. Units will conduct monthly FOD/DOP Committee Meetings whenever the unit exceeds the Command FOD rate standard. Monthly meetings will continue until the unit completes three consecutive months without exceeding the standard. The FOD meeting may be combined with other meetings.

4.10.3. HQ AFSC will set the FOD/DOP meeting agenda.

Chapter 5

MAINTENANCE OPERATION CENTER AND AEROSPACE VEHICLE DISTRIBUTION OFFICER

5.1. Maintenance Operations Center (MOC). The MOC monitors and coordinates maintenance production and execution of the flying and maintenance schedules while maintaining visibility of aircraft status. Through coordination with the maintenance units, the MOC communicates priorities for competing limited resources (e.g., fuel or calibration docks, wash racks, and dispatched specialists from the maintenance squadrons) based on maintenance priorities. The exchange of information between squadrons and the MOC must be sufficient in detail to allow the MOC to comply with reporting requirements and to identify potential problems. The MOC will maintain a '24/7' hour operation with a minimum manning requirement of two personnel per shift. HQ AFSC will develop, implement, and maintain standardized processes and procedures for the following MOC responsibilities.

5.1.1. IAW DAFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*, and TO 00-20-02, the Maintenance Debrief will enter all flying hour information into Reliability and Maintainability Information System (REMIS) No Later Than (NLT) the next duty day after the occurrence. All FCFs will be updated in REMIS and installed engine times will be updated in the Comprehensive Engine Management System (CEMS), G081, or the Integrated Maintenance Data System (IMDS), as applicable.

5.1.2. Ensure reliable, redundant, and effective maintenance communications systems are in place.

5.1.2.1. Local radio call signs are published for maintenance Land Mobile Radio (LMR) networks.

5.1.2.2. Maintain Comm/MIS/Cyber out procedures to include loss of radios, Local Area Network (LAN), and phone.

5.1.2.3. Personnel will receive initial radio operating training before assuming duties involving radio operation.

5.1.2.4. Each MOC will have a hotline on the secondary crash phone net.

5.1.3. Ensure aircraft status and Estimated Time for Completion (ETIC) are properly reported.

5.1.4. Inform affected activities of changes in priorities, plans, and schedules.

5.1.5. Coordinate on changes to the flying schedule with applicable agencies.

5.1.6. Ensure all deviations to the flying schedule are reviewed and accurately reported.

5.1.7. Notify the safety office, QA, and the FOD monitor of mishaps involving aircraft FOD and aircraft damage.

5.1.8. Request support services (e.g., standby firefighting capability, airfield water and snow removal, fueling and defueling services, civil engineering support, control tower clearances for ground movement of aircraft and equipment, etc.).

5.1.9. Monitor the progress of aircraft Functional Check Flights (FCFs).

5.1.10. Develop, implement, and maintain functional checklists. Functional checklists are required for use during actions such as aircraft crash, flight line fire, severe weather warning or evacuation, runway closure, and any other unusual circumstances deemed necessary.

5.1.11. Notify flightline supervision and/or Post Dock supervision of Oil Analysis Program (OAP) code C and E conditions IAW **Volume 2, Chapter 9** of this instruction.

5.1.12. Maintain visual aids and displays, either electronic or manual, to show the status, ETIC, and location of each aircraft on station.

5.1.13. HQ AFSC will ensure all squadrons coordinate and gain MOC approval on all aircraft engine runs, fuel requests, and all aircraft ground movements conducted by maintenance personnel prior to execution.

5.2. MOC Personnel Responsibilities. HQ AFSC will develop, implement, and maintain procedures for MOC personnel.

5.3. MOC Facilities. The MOC should be located near the flight line. The facilities must meet and maintain the following minimum standards.

5.3.1. Completely enclosed room with air conditioning and heat.

5.3.1.1. An observation room is permitted.

5.3.1.2. Doors to the MOC and the observation room will be either mechanically or electrically locked to control access.

5.3.2. Electrical power circuits will be isolated.

5.3.2.1. Provide a standby power source and emergency lighting.

5.3.2.2. Establish procedures to operate standby power sources.

5.3.3. Local Aircraft Production Engineering will ensure the MOC is informed of all limiting factors to production caused by facilities and ramp maintenance.

5.4. Aerospace Vehicle Distribution Officer (AVDO). HQ AFSC will appoint an AVDO to ensure aircraft status is properly reported and maintained IAW DAFI 21-103_AFMCSUP, *Equipment Inventory, Status, and Utilization Reporting*, AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination,* and TO 00-20-2. AVDO responsibilities include but are not limited to:

5.4.1. AVDOs will report all assignment/possession changes IAW DAFI 21-103 AFMCSUP, TO 00-20-2, and to the Air Force Materiel Command, Air, Space, and Cyberspace Operations, Test and Evaluations Division (HQ AFMC/A3F).

5.4.2. AVDOs will enter all flying hour information into REMIS NLT the next duty day after the occurrence IAW DAFI 21-103_AFMCSUP and TO 00-20-2.

5.4.3. AVDOs will assist units with the proper documentation and classification of Ground Instructional Training Aircraft (GITA) and training aid aircraft (Reference **Volume 2, Chapter 11** of this instruction).

Chapter 6

ENGINE MANAGEMENT

6.1. Engine Management (EM). EM is responsible for monitoring and developing strategies to sustain the health of the engine and aircraft fleet. EM monitors engine removals and replacements, component tracking, engine Time Compliance Technical Order (TCTOs) and Time Change Items (TCIs), engine records in the MIS, CEMS, and REMIS. Also perform engine manager duties; ensure engine inventory control and management procedures are developed for each engine Stock Record Account Number (SRAN); manage unit efforts to maintain adequate engine support for mission requirements. HQ AFSC will:

6.1.1. Develop, implement, and maintain a standardized engine management program IAW AFI 63-101/20-101 and TO 00-25-254-1, *Comprehensive Engine Management System Engine Configuration, Status and TCTO Reporting Procedures*.

6.1.2. Manage the MIS and CEMS IAW AFI 63-101/20-101, AFI 10-201, *Force Readiness Reporting*, DAFI 23-101, *Materiel Management Policy*, TO 00-25-254-1, TO 00-20-2, and applicable aircraft dash-6 TOs.

6.1.3. Coordinate engine management processes, procedures, local policy and Operating Instructions (OIs) with HQ AFMC/A4M Command Engine Manager (CEM) prior to publication.

6.1.4. Establish and document a self-assessment program to monitor accuracy and timeliness of reporting after all engine status changes and/or required action IAW TO 00-25-254-1.

6.1.5. Plan, schedule, and document maintenance actions on possessed engines.

6.1.6. Ensure each ALC designates engine management responsibilities in an Engine Management OI to include each engine SRAN to address engine inventory control and management procedures. As a minimum, procedures must:

6.1.6.1. Specify responsibilities of affected work centers for accurate and timely MIS and CEMS reporting of TCTOs, Special Inspections (SIs), TCIs, and other documentation requirements (e.g., borescope inspections, blade blending, and CANN actions).

6.1.6.2. Ensure engine, module, and component data is reported to SRAN Engine Manager NLT close of business the first duty day after the event (e.g., part removal, installation, time update, and TCTO status change) IAW TO 00-25-254-1 and TO 00-20-2.

6.1.6.3. Specify responsibilities and procedures for Engine Health Management (EHM) and Engine Trending and Diagnostics (ET&D) IAW AFMAN 20-116 *Propulsion Life Cycle Management for Aerial Vehicles*.

6.1.6.4. Specify a CEMS and MIS contingency plan for when either or both systems are down for extended periods (more than 48 hours). The plan will include procedures for retaining data in date-time order for input when MIS/CEMS operation resumes.

6.1.7. Ensure ALCs appoint a primary and alternate SRAN Engine Manager to monitor engine removals and replacements, component tracking, engine TCTOs and TCIs, engine records in the MIS, CEMS, and perform engine manager duties IAW AFI 63-101/20-101 and TO 00-25-254-1.

6.1.8. Ensure SRAN Engine Managers attend the Air Education and Training Command (AETC) Engine Management Training Course prior to assuming duties.

6.1.8.1. SRAN Engine Managers may attend the Oklahoma City Air Logistics Complex (OC-ALC) developed Depot Maintenance Engine Management Training Course in place of the AETC Engine Management Training course provided the prerequisite CEMS/PMO CEMS Training Course has been completed.

6.1.8.2. Training Plans. A training plan will be developed to ensure engine management section personnel who report engine status or are responsible for engine documentation and scheduling comply with management responsibilities IAW TO 00-25-254-1, TO 00-20-1, and TO 00-20-2.

6.2. SRAN Engine Manager. HQ AFSC will ensure the SRAN Engine Manager will:

6.2.1. Act as the single point of contact between the ALC and CEM for SRAN Engine Management issues/concerns.

6.2.2. Comply with AFI 63-101/20-101, TO 00-25-254-1, and all other applicable instructions and technical data.

6.2.3. Ensure all engine/module inspections/TCIs tracked by Engine Operating Time (EOT), Calculated Cycles (CCY), Total Accumulated Cycles (TAC), etc. are loaded/tracked in the MIS and CEMS.

6.2.4. Manage time changes and provides TCI information [e.g., cycles remaining, EOT, etc.] on serially controlled items to propulsion maintenance for engine and engine component Cannibalization (CANN) actions.

6.2.5. Manage TCTOs on all possessed engines and components both installed and removed. Comply with TCTO duties and responsibilities for engine items. Maintain records on TCTO kits and status for all engines installed on aircraft sent to depot Verify engine total time in CEMS against an approved MIS. Reconcile aircraft engine record times in the CEMS database.

6.2.6. Ensure aircraft, engine records, and MIS and CEMS database reconciliation occurs after maintenance actions are complete and prior to aircraft, engine, and/or life-limited serially tracked component leaves the overhaul repair facility.

6.2.7. Perform periodic self-inspections to monitor accuracy and timeliness of reporting.

6.2.8. Manage time changes on all engines and “life-limited and serially tracked” components.

6.2.9. Ensure all engine SIs are loaded in MIS against the engine, not the aircraft.

6.2.10. Ensure duties and requirements for engine shipments, protection, and storage are performed IAW Department of the Air Force Policy Directive (DAFPD) 24-6, *Distribution and Traffic Management*, AFI 63-101/20-101, TO 00-85-20, *Engine Shipping Instructions*, TO 2J-1-18, *Preparation for Shipment and Storage of Gas Turbine Engines*, and TO 2-1-18, *Aircraft Engine Operating Limits and Factors*.

6.2.11. Maintain a jacket file of engine shipping documents IAW AFI 33-322.

6.2.12. Maintain and update historical documents for all assigned engines, modules, and major assemblies in the MIS IAW TO 00-20-1 and TO 00-20-2.

Chapter 7

AIRCREW EGRESS SYSTEMS MAINTENANCE AND AIRCREW FLIGHT EQUIPMENT PROGRAMS

7.1. Egress Maintenance Program. HQ AFSC will develop, implement, and maintain an effective and standardized Aircrew Egress Systems Maintenance Program to include:

7.1.1. Egress personnel are responsible for all egress systems maintenance and must be trained and certified before being authorized to maintain or inspect aircraft egress systems. Non-egress personnel, who are augmented are also responsible for egress maintenance IAW **paragraph 7.5.2** of this chapter.

7.1.2. All personnel will use the Demand Response Team when directed by TOs, during any task requiring the removal/installation of explosive components, and during egress final inspections. Compose teams of individuals who are certified to perform egress maintenance. At least one team member must be a certified egress journeyman.

7.1.3. Egress personnel will perform the removal/installation of parachutes/survival kits from all Advanced Concept Ejection Seat (ACES) II and Martin Baker (i.e., MK-16 series) equipped aircraft.

7.1.4. Egress personnel will perform the removal and installation of emergency oxygen cylinders, lines, and quick disconnects attached to ejection seats.

7.2. Facilities.

7.2.1. The installation commander or equivalent will provide an enclosed shop facility, separated from other inhabited buildings or areas whenever possible, for off-equipment egress maintenance.

7.2.2. Egress facilities will have limited access to ensure system integrity and be properly licensed for explosive component storage. Explosives will be listed on an AF Form 2047, *Explosive Facility License*, and maintained within the Egress Section.

7.2.3. Facilities must be large enough to accommodate the average number of egress components requiring maintenance and storage at any one time. (See DAFMAN 32-1084, *Standard Facility Requirements*).

7.2.4. The egress section licensed explosive facility will not exceed the licensed Net Explosive Weight (NEW) capacity for each Hazard Class Division (HC/D) without approval from the Wing Weapons Safety Office. Reference DESR 6055.09_AFMAN 91-201 for additional restrictions.

7.2.5. Only egress section personnel will be authorized unescorted entrance to the egress licensed explosive location.

7.2.6. All off-equipment ejection seat maintenance will be accomplished in the Egress Section maintenance facility.

7.3. Safety Requirements.

7.3.1. Personnel will strictly adhere to all safety requirements outlined in DESR 6055.09_AFMAN 91-201, AFI 91-202, *The US Air Force Mishap Prevention Program*, DAFI

11-209, *Participation in Aerial Events*, and all 11A-, 11P-, 13A- series and aircraft specific TOs.

7.3.2. Operators of an explosive laden vehicle must have completed and be current on Egress Explosive Safety Training and qualified on the vehicle being driven IAW AFI 24-301, *Ground Transportation*.

7.3.3. The use of safety pins without an appropriate streamer properly attached is strictly forbidden. Only authorized flight safety pins will be installed on aircraft egress systems. Substitute safety devices are strictly prohibited.

7.4. Classification Training.

7.4.1. Egress personnel will meet mandatory training requirements contained in DAFI 36-2670, *Total Force Development* (or inter-service equivalent), the Career Field Education and Training Plan (CFETP) or AFMC Egress Civilian Training Plan (CTP), and this instruction.

7.4.2. Government and contractor Egress maintenance personnel who possess, as a minimum, one year of experience within the last three years performing Egress intermediate and organizational level maintenance, repair, inspections, etc., may be considered for a waiver to the classification training requirements. Waiver request will be submitted to the Command Egress functional manager for review. The Command Egress functional manager will then forward the waiver request to the Headquarters Air Force (HAF) 2A6X3 Career Field Manager for final approval/disapproval. If the waiver is disapproved, the individual must complete classification training.

7.5. Initial Certification of Egress and Non-Egress Personnel.

7.5.1. Once classification training is complete, egress personnel must successfully complete an AETC egress technician course for the specific aircraft to be maintained. **EXCEPTION**: ACES II-trained and certified egress technicians being reassigned to another base or unit maintaining ACES II-equipped aircraft are not required to complete the organizational maintenance (on-equipment) egress training course. Whether or not these individuals attend the course is the decision of the egress workcenter supervisor.

7.5.2. Non-Egress personnel augmenting egress technicians and Quality Assurance personnel who perform egress evaluations must successfully complete an AETC Egress technician course for the specific aircraft to be maintained. Where no formal AETC Egress training is available, units will develop local Egress training requirements with final approval by HQ Air Force Materiel Command, Directorate of Logistics, Civil Engineering, Force Protection, and Nuclear Integration, Resource Integration Division, Workforce Development Branch (AFMC/A4PT). Classification training is not mandatory for these individuals.

7.5.3. All personnel are certified to perform egress maintenance by demonstrating adequate proficiency to a designated certifying official in the egress systems workcenter. Certification pass/fail criteria will be established by the egress workcenter supervisor. Document certification IAW DAFI 36-2670, and the requirements as detailed in **Volume 1, Chapter 4** of this instruction.

7.5.4. Quality Assurance personnel who perform egress evaluations must annually demonstrate adequate proficiency to inspect maintenance tasks to the Egress Shop Supervisor.

The Egress Shop Supervisor will act as the qualifying official. Document the proficiency in TSS-PAC.

7.5.5. Newly assigned uncertified egress personnel may assist in performing egress systems maintenance. These personnel will never clear (sign off) AFTO Form 781-series, WCDs, or condition tags.

7.6. Decertification.

7.6.1. Decertify any individual who fails to demonstrate adequate proficiency or who has a documented administrative action that could adversely affect job performance.

7.6.2. Decertify non-egress personnel who have not been recertified in the past 180 days.

7.6.3. Decertify egress personnel after not having performed egress maintenance for more than 18 months. Instruction and inspecting egress maintenance is not considered performing maintenance.

7.6.4. Document decertification IAW DAFMAN 36-2689, *Training Program*, and **Volume 1, Chapter 4** of this instruction.

7.7. Recertification.

7.7.1. The purpose of recertification is to ensure personnel still maintain the required knowledge and skills to safely maintain and/or inspect egress systems.

7.7.2. Recertify egress maintenance and inspection certified personnel after not having performed egress maintenance or inspections for at least 18 months.

7.7.3. Recertification procedures are identical to initial certification procedures and will be accomplished IAW **paragraph 7.5.3**. Document recertification IAW DAFMAN 36-2689 and **Volume 1, Chapter 4** of this instruction.

7.8. Egress/Cockpit Familiarization Training. All non-egress personnel who access aircraft cockpits with operational egress systems installed must complete initial and refresher familiarization training. The intent of egress familiarization training is to ensure non-egress personnel are aware of the hazards associated with an egress system and what to do if a hazard exists. As a minimum, initial and refresher (24 month) egress/cockpit familiarization training will include location and installation procedures of egress system safety devices, cockpit entry/exit procedures, procedures for determining whether an egress component is expended, emergency procedures associated with an expended egress component, and local maintenance concerns identified by the egress workcenter supervisor.

7.8.1. The egress workcenter supervisor will review and validate all egress familiarization training documents at least every 24 months.

7.8.2. New personnel to the unit will receive initial familiarization training prior to accessing aircraft cockpits unless last duty position involved same mission/design aircraft as current duty position. Personnel not requiring initial training will attend refresher training when they become due. Individuals overdue for 24-month (biennial) egress familiarization training will not access aircraft cockpits until they complete familiarization training.

7.8.3. Initial egress familiarization training will be hands-on using an aircraft.

7.8.3.1. Units desiring to use an aircraft maintenance trainer instead of an aircraft must submit a waiver request from the Maintenance Group Commander (MXG/CC) through Air Force Sustainment Center, Logistics Directorate (AFSC/LG) to AFMC/A4/10/A4M for approval/disapproval.

7.8.4. Refresher familiarization training will be conducted every 24 months (biennially) using an aircraft, maintenance trainer, or media which is approved and designated by the egress workcenter supervisor.

7.8.4.1. Non-egress personnel may administer training media (slide show/video) during refresher familiarization training.

7.8.4.2. Direct students to the egress section if technical assistance is required and/or questions are raised concerning course subject matter.

7.8.5. Only egress personnel, certified on assigned egress system(s), will conduct initial egress familiarization training. **EXCEPTION:** Maintenance Training Flight personnel may conduct initial egress familiarization training provided they complete the AETC Egress classification course and the AETC egress technician course for the specific aircraft to be maintained.

7.8.6. Training media must have the approval of the MAJCOM Functional Manager (MFM) or be the current media produced by the 367 Training Support Squadron (TRSS), Hill AFB, Utah.

7.8.7. Units with unique, experimental, or test aircraft requirements.

7.8.7.1. If training courses are not available through AETC, units must use interagency training before considering non-government training sources.

7.8.7.1.1. If courses in both sources are not available, units will establish a documented training program that meets the intent of this instruction.

7.8.7.1.2. Training will be conducted by the most qualified personnel and must be approved by the MFM prior to implementation.

7.9. Egress Systems Inspections and Documentation.

7.9.1. A certified egress production inspector will inspect any disturbed integral part of the egress system. The inspection must be an egress final inspection unless another inspection is prescribed by technical data.

7.9.2. All systems Red X provisions. Only certified egress personnel will clear (sign off) egress system discrepancies listed in the aircraft forms and in WCDs.

7.10. Cannibalization Actions.

7.10.1. Egress system component Cartridge Actuated Device/Propellant Actuated Device (CAD/PAD) cannibalization actions are considered “High Risk” and should not be performed unless priority aircraft are involved (i.e., higher headquarters/alert status) or lack of ready equipment will impede mission accomplishment.

7.10.2. To ensure system integrity and validation of the explosive CAD/PAD listing, cannibalization of egress components and/or seats will not be accomplished without the approval of the Maintenance Group or Deputy Group Commander (or equivalent).

7.10.3. After cannibalization actions, Red X discrepancies in the aircraft AFTO Forms 781A or equivalent will not be cleared until REMIS is reviewed to ensure the correct configuration of the aircraft CAD/PAD items that were cannibalized.

7.11. Aircrew Flight Equipment (AFE) Program. HQ AFSC will manage AFE related maintenance programs IAW AFMAN 11-301V1, AFMAN 11-301V2, *Management and Configuration Requirements for Aircrew Flight Equipment (AFE)*, and all applicable TOs.

7.11.1. AFE personnel (i.e., Air Force Specialty Code 1P0X1, including civilian equivalents) will be trained IAW AFMAN 11-301V1.

7.11.2. AFE personnel will remove/install parachutes/survival kits from all non-ejection seat equipped aircraft.

7.11.3. AFE personnel will retain all administrative control over ACES II survival kits and personnel parachutes (i.e., documentation of all time changes in the IMDS) and tracking of serially controlled items stored within survival kits and serially controlled items on the personnel parachute assembly.

7.11.4. AFE personnel will maintain control over spare survival kits and personnel parachutes within their facility.

7.11.5. The AFE Superintendent (i.e., Air Force Specialty Code 1P0X1 or civilian equivalent) is the focal point concerning parachute/survival kit system technical issues.

Chapter 8

MAINTAINING COMMERCIAL DERIVATIVE AIRCRAFT

8.1. Background Information and Objective. The AF procures Commercial Derivative Aircraft (CDA) for various missions. These aircraft are intended to conform to Federal Aviation Administration (FAA) Type Certificates (TC), Supplemental Type Certificates (STC), and designs. The AF maintains these aircraft according to civil airworthiness standards using AF maintenance systems, facilities, equipment, mechanics, and "Meet the Intent" procedures as addressed in Air Force Sustainment Center Instruction (AFSCI) 62-603, *Military Repair Station Program*. They must meet FAA requirements when modifying these aircraft to maintain configuration control and ensure flight safety.

8.1.1. A CDA is any fixed or rotary wing aircraft procured as an FAA type certificated item acquired by the military.

8.1.2. Modifications, repairs, and overhauls accomplished by organic or commercial depot maintenance activities to AF CDA having FAA certification will not cause the aircraft to lose its FAA certification. All depot maintenance activities and organizations associated with CDA must comply with the respective TOs, aircraft manuals, FAA certified Part 145 repair station manual, and/or AFSC qualified ALC Military Repair Station (MRS) manual as applicable.

8.2. Depot Maintenance Requirements for CDA. HQ AFSC will develop, implement, and maintain procedures for depot maintenance activities performing modifications, repairs, and overhauls on CDA to include the following:

8.2.1. Certification Requirements. Organic depot maintenance will be performed on CDA in an organic FAA certified Part 145 Repair Station or AFSC qualified ALC MRS.

8.2.2. Inspection Requirements. Depot maintenance accomplished either organically or commercially on CDA will comply with inspection requirements approved by the Original Equipment Manufacturer (OEM) or authorized CEA.

8.2.3. Deviations from Inspection Requirements. When deviations from inspection requirements or intervals is justified, proposed changes will be sent to the PM for evaluation by the CEA.

8.2.4. Component Overhaul and Time Change Intervals. Under normal operational conditions use the manufacturer's component overhaul and time change intervals for CDA and its installed equipment. Special emphasis will be placed on Extended Operations (ETOPS) certificated CDA to ensure that all time change intervals are met and that maintenance/overhaul actions do not put ETOPS certification or airworthiness at risk. CEA approval will be required for any situation that results in exceeding the FAA approved intervals.

8.2.5. Airframe Overhaul. Overhaul of CDA during Programmed Depot Maintenance (PDM)will be IAW approved and accepted aircraft maintenance manuals and/or Instructions for Continued Airworthiness. For issues that exceed the FAA approved maintenance instructions, seek approval from the CEA. The PM determines the PDM cycle intervals and related work requirements IAW TO 00-25-4, and the aircraft -6 inspection manual. General requirements and related time intervals include all major elements of the aircraft.

8.2.6. Aircraft and Component Modifications. The FAA issues a STC for a change to a type design. For AF designed modifications to CDA and components, obtain AF approval IAW AFI 63-101/20-101. Obtain FAA certification for CDA IAW FAA Order 8110.101A, *Type Certification Procedures for Military Commercial Derivative Aircraft*. FAA Form 8110-12, *Application for Type Certificate*, with engineering data attached, will be sent to the FAA Military Certification Office (MCO).

8.2.6.1. After approving the engineering prototype installation (and flight test, if required), the FAA issues the certification or STC. The PM receives the FAA certification or STC for an AF-designed modification. Contractors will obtain the FAA certification or STC for a contractor-designed modification.

8.2.6.2. All modifications to CDA will comply with AFPD 62-6, *USAF Airworthiness*. Such modifications are required to keep the Weapon System (WS) or aircraft in compliance with FAA standards and to maintain FAA certification.

Chapter 9

OIL ANALYSIS PROGRAM

9.1. Purpose. Oil Analysis is the process of analyzing oil and other fluids used to lubricate or operate mechanical equipment, evaluating the condition of the fluid or the equipment from which the fluid originated, and recommending maintenance actions to the equipment operating activity.

9.1.1. An Oil Analysis Program (OAP) ensures timely and accurate oil analysis support through the strategic location of oil analysis laboratories and the standardization of procedures, data elements, analytical instrumentation, and diagnostic techniques.

9.1.2. The Joint Oil Analysis Program (JOAP) is a combined effort of the Army, Navy and Air Force to set-up and maintain a standard program. Oil analysis requires a centrally managed program and the integration of AF OAP and JOAP plans. For further guidance reference AFI 21-131, *Joint Oil Analysis Program.*

9.2. Objectives. The overall objective of the AF OAP is to detect oil-wetted air and space equipment failures before serious malfunction or secondary damage occurs. HQ AFSC will develop, implement, and maintain procedures addressing the specific objectives of the AF OAP and JOAP programs listed below:

9.2.1. Improve the operational safety, readiness, and economy of military equipment using on-board and off-board oil analysis, a condition-monitoring concept that relies on the detection and measurement of wear-metals in the fluid.

9.2.2. Collect and analyze oil analysis data to increase the effectiveness of oil analysis techniques in the diagnosis of potential equipment failures and lubricant condition; to provide wear metal and lubricant physical property data to the various weapons system managers and others, as required.

9.2.3. Ensure oil analysis plans and operations are integrated (where practical) to provide:

9.2.3.1. Standard laboratory techniques, procedures, data, calibration standards, and analytical instruments.

9.2.3.2. Inter-service oil analysis support to all military departments.

9.2.3.3. The most cost–effective means of determining the condition of lubricants, fluids, and mechanical system using various analytical techniques.

9.3. Guidance. The OAP helps aircraft technicians and supervisors to make informed, condition-based, preventive maintenance decisions, and can reduce equipment costs, increase equipment availability, and reduce in-flight risk. This is primarily achieved by monitoring the concentration of wear metals in fluids used to lubricate or power mechanical systems. To monitor engine health, the OAP uses a variety of testing mechanisms. These include Atomic Emission (AE) spectrometric wear metal analysis, Magnetic Chip Detectors (MCD), MCDs with on-board sensors, and nondestructive microanalysis systems (e.g., Scanning Electron Microscope/Energy Dispersive X-ray [SEM/EDX], Chip Check). To the extent deemed cost effective, EOT will be used as the standard time interval between oil analysis sampling when in-service engines are equipped with an Engine Monitoring System (EMS) or other operating time recorders. For engines without EMS

or other operating time recorders, oil analysis trending intervals will be standardized based upon Engine Flying Hours (EFHs).

9.3.1. Responsible activities must ensure the resultant data is accurate and given promptly to all customers so they can effectively monitor the condition of their equipment.

9.3.2. Laboratory operation.

9.3.2.1. Each OAP laboratory must be certified IAW TO 33-1-37-1, *Joint Oil Analysis Program Manual, Volume I, Introduction, Theory, Benefits, Customer, Sampling Procedures, Programs And Reports, and* TO 33-1-37-2, *Joint Oil Analysis Program Manual, Volume II, Spectrometric And Physical Test Laboratory Operating Requirements and Procedures.*

9.3.2.2. AF OAP laboratories must provide oil analysis services at no charge for all US Government, North Atlantic Treaty Organization (NATO), and friendly Foreign Military Sales (FMS) aircraft. These services include analyzing oil samples from transient aircraft IAW applicable technical data within the AF OAP laboratory capabilities.

9.3.2.3. HQ AFSC will ensure OAP laboratories periodically evaluate response times to optimize support of the customer.

9.4. Roles and Responsibilities.

9.4.1. AFMC is the lead MAJCOM for the AF OAP and Air Force participation in the JOAP. AFMC is also responsible for oil analysis Research, Development, Test and Evaluation (RDT&E). Air Force Life Cycle Management Center, Propulsion Directorate, Propulsion Sustainment Division, Strategic Planning and Sourcing Office (AFLCMC/LPSZC) is the OPR for AF OAP guidance coordination and implementation within AFMC.

9.4.2. HQ AFSC will:

9.4.2.1. Provide guidance necessary to execute the AF OAP and ensures all subordinate organizations understand and properly execute AF OAP and JOAP responsibilities.

9.4.2.2. Ensure ALCs establish a Complex OAP POC for complying with AFMC OAP responsibilities to include the following:

9.4.2.2.1. Establish or relocate OAP laboratories to support the AFSC mission. Coordinates establishment or relocation with the AF OAP Manager.

9.4.2.2.2. Ensure laboratories provide the depot a computer-generated printout/record, for each engine undergoing scheduled maintenance or overhaul.

9.4.2.2.3. Ensure laboratories process and evaluate samples IAW TO 33-1-37-1/-2.

9.4.2.2.4. Ensure proper training of AF OAP laboratory technicians. This includes identifying training requirements to AETC.

9.4.2.2.5. Ensure assigned shop instrumentation and equipment is not modified or used for non-OAP applications without AF OAP Office approval.

9.4.2.2.6. Ensure AF OAP and JOAP requirements are included in planning, programming, and budgeting process. This includes providing needed funds, personnel, facilities, and other resources to maintain an effective program.

9.4.2.2.7. Ensure a Memorandum of Agreement (MOA) defining notification and documentation procedures is developed between the host base and ALC OAP laboratories when an ALC provides transient alert support and/or support to aircraft outside the depot.

9.4.2.2.8. Support equipment evaluations and field surveys for the AF OAP Office.

9.5. Reporting and Measurement. All laboratories must collect and report metrics to the AF OAP Manager IAW TOs 33-1-37-1 and 33-1-37-2.

Chapter 10

DEPOT FIELD TEAMS

10.1. Depot Field Teams (DFT).

10.1.1. A DFT is an individual or group designated to perform depot level maintenance and/or inspection of systems or equipment, such as aircraft, commodities, and engines, at a place other than the depot facility.

10.1.2. A collaborative effort between AFLCMC and AFSC is necessary to ensure proper coordination of DFT requirements and provide enhanced warfighter support.

10.1.3. All records created because of the DFT requirements process must be maintained IAW AFI 33-322 and disposed of IAW the AFRIMS RDS.

10.2. HQ AFLCMC will:

10.2.1. Ensure Systems Program Offices (SPOs) provide request for DFT assistance to the appropriate Air Logistics Complex Business Office (ALC/OB) in the form of a Statement of Work (SOW).

10.2.2. The SOW will include the Mission Design Series/Type Model Series (MDS/TMS), type of work, location, estimated timeframe, specific repair/manufacture instructions (TO references, AFMC Form 202, *Engineer Technical Assistance Request,* instructions, etc.) and justification for organic accomplishment.

10.2.3. Ensure an approved DFT request received from the ALC/OB includes Job Order Quantity (JOQ), estimated total labor cost, material cost and workload duration in calendar days.

10.2.4. Ensure funding is approved and forwarded to the appropriate ALC/FM.

10.3. HQ AFSC will:

10.3.1. ALC/OB serves as the single point of contact and control for all matters related to DFT workload to include:

10.3.1.1. DFT request approval, to include JOQ, estimated labor cost, material cost, and workload duration in calendar days, is forwarded to the appropriate SPO.

10.3.1.2. Verification of funding and release of a work authorization.

Chapter 11

GROUND INSTRUCTIONAL TRAINER AIRCRAFT

11.1. Permanently Assigned Ground Instructional Trainer Aircraft (GITA). Permanently assigned GITA are those aircraft that are not maintained in airworthy condition. Active GITA are maintained in system/subsystem operational condition for purposes of maintenance training and normally carried in possession codes as outlined in DAFI 21-103 or AFI 16-402. Inactive GITA are permanently grounded for use in personnel training.

11.1.1. This section does not apply to Aircraft Battle Damage Repair (ABDR) training aircraft. ABDR training aircraft are managed by Air Force Sustainment Center, Logistics Directorate, Depot Maintenance Operations Division, Depot Maintenance Processes and Productivity Branch (AFSC/LZDB). This chapter does not apply to training equipment maintained by Contract Logistics Support (CLS) contracts administered by commands other than AETC.

11.2. Temporarily Grounded GITA (active). Temporarily grounded aircraft are subject to recall to the active fleet.

11.2.1. Only those items requested by the PM are considered for removal. If the item does not affect training and if approved by the Maintenance Group Commander (MXG/CC) or equivalent, the part will be removed and turned in as per the instructions of MXG/CC or equivalent.

11.2.2. Units are responsible for storing uninstalled or removed equipment that is not required for training.

11.3. Permanently Grounded GITA (inactive). Permanently grounded aircraft are those declared excess to future operations or flying requirements by higher headquarters. Aircraft in this category will be re-designated by the addition of the prefix “G” to the basic MDS.

11.3.1. Training Aid Aircraft are considered Permanently Grounded GITA (inactive). Aircraft in this category, at a minimum, require an aircraft fuselage that was previously in the AF inventory as an aircraft. Training Aid Aircraft will be re-designated by the addition of the prefix “T” to the basic MDS.

11.3.1.1. Assigned aircraft are not maintained in airworthy condition, and only the system/subsystem required for the specific training requirements will be maintained in operational condition for purposes of required maintenance/organizational training.

11.3.1.2. Aircraft used for training are not terminated from the AF inventory IAW AFI 16-402.

11.3.1.3. Questions about the designation of an aircraft used for training should be directed to the MAJCOM AVDO.

11.3.2. Permanently grounded missiles retain their original MDS without a prefix.

11.3.3. Upon assignment of a permanently grounded GITA/Training Aid Aircraft, the MXG/CC or equivalent will contact AFSC/LG to coordinate "save list" requirements identified by the PM.

11.3.3.1. “Save list” items removed will be turned into Logistics Readiness Squadron (LRS) for shipment.

11.3.3.2. If an item on the “save list” is not removed, the reason for not removing it will be annotated and coordinated with the applicable MAJCOM.

11.3.3.3. If items on the “save list” are required for training and an unserviceable item will suffice, units will coordinate with the applicable MAJCOM for receipt of the unserviceable items.

11.3.3.4. All unserviceable items will be marked/identified as “unserviceable” in a conspicuous manner (e.g., Red X or Red dot system).

11.4. GITA Program Requirements. The GITA program will, at the minimum, address the scope of training functions for GITA/Training Aid Aircraft use, functional responsibility for funding, operations, maintenance, and records management. HQ AFSC will:

11.4.1. Determine use of MIS for permanently grounded GITA records management.

11.4.2. Coordinate “save list” requirements/changes with the PMs.

11.4.3. Develop, implement, and maintain an effective GITA program for use at the ALCs to ensure the MXG/CCs accomplish the following:

11.4.3.1. Develop an installation publication or supplement to define the scope of training functions for GITA/TAA use, functional responsibility for funding, operations, maintenance, and records management.

11.4.3.2. Ensure maintenance support of GITA/Training Aid Aircraft used for training. Units that do not have organic maintenance capability will establish a Support Agreement or MOA assigning maintenance responsibility for GITA/Training Aid Aircraft training use.

11.4.3.2.1. GITA maintenance includes on- and off-equipment maintenance of active systems and subsystems and necessary actions to maintain the aircraft in a safe and presentable condition.

11.4.3.2.2. Training Aid Aircraft require minimal maintenance on systems/subsystems used to meet training requirements and should be maintained in a safe and presentable condition.

11.4.3.3. Determine which system and subsystem are required to support the training. Consider present, future, and cross-utilization of systems when making determinations. These systems will be maintained in the same configuration as operational equipment.

11.4.3.4. Ensure explosive components are removed that are not required to support training requirements.

11.4.3.5. Place retained systems and subsystems not currently being used for training into extended storage IAW applicable technical data.

11.4.3.6. Ensure standard maintenance practices regarding inspection appearance, cleanliness, ground safety, and prevention of corrosion are met. Corrosion control procedures are outlined in TO 1-1-691, *Cleaning and Corrosion Prevention and Control, Aerospace and Non-Aerospace Equipment*.

11.4.3.7. Develop and prepare inspection technical data check lists for use in inspecting the condition and safety of equipment before use and ensure inspections are performed.

11.4.3.7.1. Prior-to-use inspections will be conducted by the using organization employing a tailored weapon system pre-/post-dock checklist.

11.4.3.7.2. Conduct periodic maintenance inspections using a tailored work deck.

11.4.3.8. Prepare a separate memorandum for each GITA/Training Aid Aircraft, addressed to the appropriate PM for the aircraft and inform them of the systems and subsystems that will be maintained in operational configuration.

11.4.3.8.1. When changes in requirements occur, initiate a new memorandum.

11.4.3.8.2. Ensure copies of all GITA/ Training Aid Aircraft memorandums are provided to the MAJCOM AVDO.

11.4.3.9. Ensure air and space vehicle inventory will be reported IAW DAFI 21-103 as required for ground trainers. Aircraft used for ground trainers are exempt from status and utilization reporting.

11.4.3.10. Ensure maintenance actions are documented IAW TO 00-20-1.

11.4.3.10.1. Owning units not having maintenance capability will establish MOAs or Memorandums of Understanding (MOUs) with organizations which can provide maintenance support.

11.4.3.11. Ensure timely completion of TCTOs on systems designated for configuration management and proper configuration status accounting is maintained.

11.4.3.11.1. Accomplish TCTOs on systems not designated for configuration management as required to ensure safety of operation or as directed by the PM.

11.4.3.11.2. TCTOs are not maintained on Training Aid Aircraft.

11.4.3.12. Ensure proper coordination and documentation of parts removed from training aircraft are accomplished as follows:

11.4.3.12.1. When an item is removed or replaced, supervisors will ensure this action is documented in the aircraft forms. Include the authority for removal (e.g., message number, telecon, letters, and dates) and condition of installed/replacement items.

11.4.3.12.2. When the limited save list actions have been done, a copy of the completed list will be forwarded to the appropriate PM and the local documentation function which will be added to the Training Aid Aircraft historical record.

11.4.3.12.3. Weight and Balance (W&B) handbook requirements will be maintained IAW TO 1-1B-50, *Joint Technical Manual Organizational, Intermediate and Depot Maintenance Aircraft Weight and Balance*, and applicable -5 series TOs.

Chapter 12

ADDITIONAL PROGRAM REQUIREMENTS

12.1. Fleet Grounding/Removal from Service/Restricted Operations.

12.1.1. On occasion, units may discover conditions in multiple aircraft, engines, missiles, munitions, or related installed flight equipment of sufficient risk to personal injury or equipment damage that warrant fleet grounding, removal from service, or restricted operations of their assigned aircraft until the matter can be properly investigated and resolved.

12.1.2. In certain cases, the Weapon System (WS) PM versus an operational unit will discover a materiel condition with fleetwide impact and will recommend the MAJCOM/CC ground their assigned aircraft, or, in some instances direct immediate grounding IAW authority granted to the WS PM in TO 00-5-15, *Air Force Time Compliance Technical Order Process.*

12.1.3. Definitions.

12.1.3.1. Fleet Grounding. An administrative action taken to prohibit a "fleet of aircraft" from flying because of a specific condition related to the aircraft or based on requirements of a directive. Implemented from a higher echelon of command (MAJCOM/CC) when conditions in multiple aircraft, engines, missiles, munitions, or related installed flight equipment create a sufficient risk to personal injury or equipment damage which warrant "fleet grounding" until the matter can be properly investigated and resolved.

12.1.3.2. Removed from Service. Denotes an aircraft with an overdue One Time Inspection (OTI), immediate or urgent action TCTO. Remove from service dates are noted within the applicable OTI. May also be used to indicate status of weapon system components, Support Equipment, and Real Property Installed Equipment.

12.1.3.3. Restricted Operations. An aircraft maintenance and condition status that applies to singular aircraft which are restricted from specifically assigned unit wartime, training, test, or other missions. These aircraft maintain a partially mission capable or non-mission capable maintenance status as determined by the MDS Minimum Essential Subsystems List (MESL). Aircraft with restricted operations may or may not be mission capable depending on the MDS MESL requirements.

12.1.4. HQ AFSC will develop, implement, and maintain standardized procedures when depot maintenance support is requested for units with fleet grounding, removal from service, or restricted operations of aircraft, engines, or major end items in the possession of the depots. For additional guidance, reference DAFMAN 11-401, *Aviation Management*.

12.2. Cannibalization Program. Cannibalization (CANN) is the authorized removal of a specific assembly, subassembly, or part from one weapon system, support system, or equipment end item for installation on another end item to satisfy an existing supply requisition and to meet priority mission requirements with an obligation to replace the removed item. CANN actions may be necessary when a condition prevents the accomplishment of a mission, and the required assets are not immediately available from supply. When authorizing a CANN, the expenditure of man-hours and potential damage to equipment must be weighed against the expected benefit. HQ AFSC will develop, implement, and maintain standardized procedures for authorizing and minimizing CANN actions, including identifying and reporting to AFLCMC if the action was necessary to

support programmed or unprogrammed workload. See **Volume 2, Chapter 7** of this instruction for CANN actions involving egress equipment.

12.3. Aircraft and Equipment Decontamination. HQ AFSC will develop a decontamination program IAW MDS specific technical data and the following references: DAFMAN 91-203, *Air Force Occupational Safety, Fire and Health Standards*, and TO 00-110A-1, *Guidelines for Identification and Handling of Aircraft and Material Contaminated with Radioactive Debris (Fallout).*

12.4. Weight and Balance (W&B) Program.

12.4.1. HQ AFSC will ensure the ALCs develop, implement, and maintain standardized procedures governing the W&B program IAW TO 1-1B-50. applicable MDS TOs and this instruction.

12.5. Test Cells and Hush Houses. HQ AFSC will ensure the ALCs assign a primary and alternate custodian that will establish an account and utilize the Agile Combat Support Management Tool (ACSMT) in the Web Applications Software Products (WASP) site **https://wasp.cce.af.mil/ACSMT** for TO 00-25-107, *Maintenance Assistance*, reporting and status updates of engine test stands or hush house equipment. ETARs shall be reported using the AutoTAR system at **https://afsc202.robins.af.mil/**.

12.6. AMARG Reclamation and Disposal. HQ AFSC will develop, implement, and maintain standardized processes and procedures to address unique AMARG reclamation and disposal operations.

LYLE K. DREW, Brig Gen, USAF
Director of Logistics, Civil Engineering, Force Protection and Nuclear Integration

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

Title 5, United States Code § 301, *Department Regulations*

Title 5, United States Code § Chapter 53, *Pay Rates and Systems*

Title 5, United States Code § Chapter 55, *Pay Administration*

Title 5, United States Code § Chapter 81, *Compensation for Work Injuries*

Executive Order 9397, *Numbering System for Federal Accounts Relating to Individual Persons*

AFPD 21-1, *Maintenance of Military Materiel*, 1 August 2018

AFPD 62-6, *USAF Airworthiness*, 16 January 2019

DAFPD 24-6, *Distribution and Traffic Management*, 12 October 2022

DAFI 11-209, *Participation in Aerial Events*, 20 May 2021

DAFI 21-103, *Equipment Inventory, Status and Utilization Reporting*, 1 November 2022

DAFI 21-103_AFMCSUP, *Equipment Inventory, Status and Utilization Reporting*, 10 May 2023

DAFI 23-101, *Materiel Management Policy*, 22 October 2020

DAFI 36-2670, *Total Force Development*, 25 June 2020

DAFI 91-204, *Safety Investigations and Reports*, 10 March 2021

AFI 10-201, *Force Readiness Reporting*, 22 December 2020

AFI 10-403, *Deployment Planning and Execution*, 17 April 2020

AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination*, 27 September 2019

AFI 21-131, *Joint Oil Analysis Program*, 26 March 2014

AFI 24-301, *Ground Transportation*, 22 October 2019

AFI 33-322, *Records Management and Information Governance Program*, 23 March 2020

AFI 36-2650, *Maintenance Training*, 22 June 2022

AFI 36-2650_AFMCSUP, *Maintenance Training*, 3 March 2023

AFI 63-101/20-101, *Integrated Life Cycle Management*, 30 June 2020

DAFI 63-138, *Acquisition of Services*, 2 January 2024

AFI 90-821, *Hazard Communication (HAZCOM) Program*, 13 May 2019

AFI 91-202, *The US Air Force Mishap Prevention Program*, 12 March 2020

DAFMAN 11-401, *Aviation Management*, 27 October 2020

DAFMAN 32-1084, *Standard Facility Requirement*, 15 January 2020

DAFMAN 36-2689, *Training Program*, 31 March 2023

DAFMAN 90-161, *Publishing Processes and Procedures*, 18 October 2023

DAFMAN 91-203, *Air Force Occupational Safety, Fire, and Health Standards*, 25 March 2022

AFMAN 11-301V1, *Aircrew Flight Equipment (AFE)*, 31 May 2023

AFMAN 11-301V2, *Management and Configuration Requirements for Aircrew Flight Equipment (AFE)*, 13 February 2020

AFMAN 20-116, *Propulsion Life Cycle Management for Aerial Vehicles*. 13 April 2022

AFMAN 32-7002, *Environmental Compliance and Pollution Prevention*, 4 February 2020

AFMAN 63-143, *Centralized Asset Management Procedures*, 18 December 2020

DESR 6055.09_AFMAN 91-201, *Explosives Safety Standards*, 6 June 20-20

AFMCI 65-101, *Depot Maintenance Accounting and Production System-Financial Policy and Procedures for Depot Maintenance*, 17 June 2014

AFMCMAN 63-1202, *Engineering Technical Assistance Request (ETAR) Process,* 30 September 2022

AFSCI 62-603, *Military Repair Station Program*, 3 June 2022

FAA Order 8110.101A, *Type Certification Procedures for Military Commercial Derivative Aircraft*, 25 February 2015

TO 00-110A-1, *Guidelines for Identification and Handling of Aircraft and Material Contaminated with Radioactive Debris (Fallout).* 4 August 2021

TO 00-5-1, *Air Force Technical Order System*, 11 September 2023

TO 00-5-3, *Air Force Technical Order Life Cycle Management,* 29 November 2023

TO 00-5-15, *Air Force Time Compliance Technical Order Process*, 28 July 2023

TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures,* 26 September 2022

TO 00-20-2, *Maintenance Data Documentation*, 23 August 2023

TO 00-20-14, *Air Force Metrology and Calibration Program*, 30 November 2023

TO 00-25-4, *Depot Maintenance of Aerospace Vehicles and Training Equipment*, 15 September 2022

TO 00-25-107, *Maintenance Assistance*, 15 August 2022

TO 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*, 22 December 2023

TO 00-25-254-1, *Comprehensive Engine Management System Engine Configuration, Status and TCTO Reporting Procedures*, 1 February 2022

TO 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution (DRI&R),* 15 August 2022

TO 00-85-20, *Engine Shipping Instructions*, 1 July 2022

TO 1-1-3, *Inspection and Repair of Aircraft Integral Tanks and Fuel Cells*, 28 March 2022

TO 1-1B-50, *Joint Technical Manual Organizational, Intermediate and Depot Maintenance Aircraft Weight and Balance*, 12 September 2023

TO 1-1-691, *Cleaning and Corrosion Prevention and Control, Aerospace and Non-Aerospace Equipment*, 22 July 2022

TO 2-1-18, *Aircraft Engine Operating Limits and Factors*, 1 January 2023

TO 2J-1-18, *Preparation for Shipment and Storage of Gas Turbine Engines*, 1 November 2022

TO 31S5-4-ETOOL-1, *eTool and Commercial Mobile Device Set up and Management*, 1 September 2023

TO 33-1-37-1, *Joint Oil Analysis Program Manual, Volume I, Introduction, Theory, Benefits, Customer Sampling Procedures, Programs and Reports*, 15 September 2014

TO 33-1-37-2, *Joint Oil Analysis Program Manual, Volume II, Spectrometric and Physical Test Laboratory Operating Requirements and Procedures*, 15 June 2022

Prescribed Forms

None

Adopted Forms

DD Form 2875, *System Authorization Access Request (SAAR)*

DAF Form 679, *Department of the Air Force Publication Compliance Item Waiver Request/Approval*

DAF Form 847, *Recommendation for Change of Publication*

AF Form 1297, *Temporary Issue Receipt*

AF Form 2047, *Explosive Facility License*

AFTO Form 252, *Technical Order Publication Change Request*

AFTO Form 781A, *Maintenance Discrepancy and Work Document*

AFMC Form 202, *Engineer Technical Assistance Request*

FAA Form 8110-12, *Application for Type Certificate*

Abbreviations and Acronyms

ABDR—Aircraft Battle Damage Repair

ACES—Advanced Concept Ejection Seat

ACSMT—Agile Combat Support Management Tool

AE—Atomic Emissions

AETC—Air Education and Training Command

AFE—Aircrew Flight Equipment

AFGE—American Federation of Government Employees

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFMC—Air Force Materiel Command

AFMCI—Air Force Materiel Command Instruction

AFMCMAN—Air Force Materiel Command Manual

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFRIMS—Air Force Records Information Management System

AFTO—Air Force Technical Order

AFSC—Air Force Sustainment Center

AFSCI—Air Force Sustainment Center Instruction

AGE—Aerospace Ground Equipment

ALC—Air Logistics Complex

ALC/OB—Air Logistics Complex Business Office

AMARG—Aerospace Maintenance and Regeneration Group

ANG—Air National Guard

AVDO—Aerospace Vehicle Distribution Officer

CAC—Common Access Card

CAD/PAD—Cartridge Actuated Device/Propellant Actuated Device

CANN—Cannibalization

CC—Cost Center

CCY—Calculated Cycles

CDA—Commercial Derivative Aircraft

CEA—Cognizant Engineering Authority

CEM—Command Engine Manager

CEMS—Comprehensive Engine Management System

CFETP—Career Field Education and Training Plan

CIR—Custodian Inventory Report

CLS—Contract Logistics Support

CMM—Commercial Maintenance Manual

COTS—Commercial Off the Shelf

CRF—Centralized Repair Facility

CSAG-M—Consolidated Sustainment Activity Group-Maintenance

CTK—Consolidated Tool Kit

CTP—Civilian Training Plan

DAF—Department of the Air Force

DAFI—Department of the Air Force Instruction

DAFMAN—Department of the Air Force Manual

DAFPD—Department of the Air Force Policy Directive

DCAST—Depot Cost and Schedule Tool

DCPS—Defense Civilian Payroll System

DD—Department of Defense

DDS—DMAPS Data Store

DESR—-Defense Explosive Safety Regulation

DFT—Depot Field Team

DIFMS—Defense Industrial Management System

DLADS—Defense Logistics Agency Disposition Services

DLCP—Daily Labor Correction Process

DMAPS—Depot Maintenance Accounting and Production System

DO—Dropped Object

DOP—Dropped Object Prevention

DR—Deficiency Report

DTK—Dispatchable Tool Kit

EFH—Engine Flying Hours

EH—Environmental/Hazard

EHM—Engine Health Management

EM—Engine Management

EMS—Engine Monitoring System

EOT—Engine Operating Time

ERRC—Engine Regional Repair Center

ETAR—Engineering Technical Assistance Request

ETIC—Estimated Time for Completion

ET&D—Engine Trending and Diagnostics

eTOOLS—Electronic Tools

ETOPS—Extended Operations

FAA—Federal Aviation Administration

FCF—Functional Check Flight

FEM—Facility and Equipment Maintenance

FI—Final Inspector

FMS—Foreign Military Sales

FOD—Foreign Object Damage

GITA—Ground Instructional Trainer Aircraft

HAF—Headquarters Air Force

HAZMAT—Hazardous Material

HC/D—Hazard Class Division

HQ—Headquarters

IAW—In Accordance With

ID—Identification

IE/DDS—Integration Engine/DMAPS Data Store

IMDS—Integrated Maintenance Data System

IET—Industrial Engineering Technician

ITK—Individual Tool Kit

ITS—Inventory Tracking System

JOAP—Joint Oil Analysis Program

JON—Job Order Number

JOPMS—Job Order Production Number Master System

JOQ—Job Order Quantity

LAN—Local Area Network

LM/MT&E—Locally Manufactured/Modified Tools and Equipment

LMR—Land Mobile Radio

LRS—Logistics Readiness Squadron

MAJCOM—Major Command

MCD—Magnetic Chip Detector

MCO—Military Certification Office

MDS—Mission-Design Series

MFM—MAJCOM Functional Manager

MIS—Maintenance Information Systems

MOA—Memorandum of Agreement

MOC—Maintenance Operation Center

MOU—Memorandum of Understanding

MRS—Military Repair Station

MRT—Maintenance Review Team

MESL—Mission Essential Subsystems List

MXG/CC—Maintenance Group Commander

NATO—North Atlantic Treaty Organization

NDI—Non-Destructive Inspection

NEW—Net Explosive Weight

NLT—No Later Than

OAP—Oil Analysis Program

OC-ALC—Oklahoma City Air Logistics Complex

OEM—Original Equipment Manufacturer

OI—Operating Instruction

OJT—On the Job Training

OPR—Office of Primary Responsibility

OTI—One Time Inspection

PAC—Production Acceptance Certification

PAO—Project Administration Officer

PDM—Programmed Depot Maintenance

PDMSS—Programmed Depot Maintenance Scheduling System

PED—Portable Electronic Device

PM—Program Manager

PO—Program Office

POUS—Point of Use Station

PPE—Personal Protective Equipment

PPPT—Pre-Production Planning Team

PPT—Production Planning Team

PSC—Production Support Center

QA—Quality Assurance

RCC—Resource Control Center

RDS—Records Disposition Schedule

RDT&E—Research, Development, Test and Engineering

REMIS—Reliability and Maintainability Information System

RII—Required Inspection Stamp

RSC—RCC Skill Code System

SCM—Supply Chain Manager

SE—Support Equipment

SEM/EDX—Scanning Electron Microscope/Energy Dispersive X-ray

SH—Special Handling

SI—Special Inspection

SOW—Statement of Work

SPO—System Program Office

SRAN—Stock Record Account Number

SSN—Social Security Number

STC—Supplemental Type Certificate

TAA—Time and Attendance

TAC—Total Accumulated Cycles

TC—Type Certificates

TCI—Time Change Item

TCM—Tool Control Manager

TCTO—Time Compliance Technical Order

TDY—Temporary Duty

TK—Tool Kit

TKCRL—Tool Kit Custody Receipt Listing

TMS—Type Model Series

TMDE—Test, Measurement and Diagnostic Equipment

TO—Technical Order

TRSS—Training Support Squadron

TS—Tool Set

TSS-PAC—Training Scheduling System-Production Acceptance Certification

W&B—Weight and Balance

WASP—Web Applications Software Products

WCD—Work Control Document

WS—Weapons System

Office Symbols

AFLCMC/LPSZC—Air Force Life Cycle Management Center, Propulsion Directorate, Propulsion Sustainment Division, Strategic Planning and Sourcing Office

AFMC/A4/10—Air Force Materiel Command, Directorate of Logistics, Civil Engineering, Force Protection, and Nuclear Integration

AFMC/A4/10/A4PT—Air Force Materiel Command, Directorate of Logistics, Civil Engineering, Force Protection, and Nuclear Integration, Resource Integration Division, Workforce Development Branch

AFMC/A4/10/A4M—Air Force Materiel Command, Directorate of Logistics, Civil Engineering, Force Protection, and Nuclear Integration, Maintenance Division

AFMC/A4/10/A4MY—Air Force Materiel Command, Directorate of Logistics, Civil Engineering, Force Protection, and Nuclear Integration, Maintenance Division, Aviation Support Equipment, Depot Maintenance Policy, and Maintenance Training Branch

AFSC/LG—Air Force Sustainment Center, Logistics Directorate

AFSC/LZDB—Air Force Sustainment Center, Logistics Directorate, Depot Maintenance Operations Division, Depot Maintenance Processes and Productivity Branch

Terms

Capability—The ability to execute a specified course of action.

Cognizant Engineering Authority—An organization or individual delegated engineering authority by the USAF Technical Airworthiness Authority.

Contingency—A situation requiring military operations in response to natural disasters, terrorists, subversives, or as otherwise directed by appropriate authorities to protect U.S. interests.

Depot Maintenance—Any action performed on materiel or software in the conduct of inspection, repair, overhaul, or the modification or rebuild of end-items, assemblies, subassemblies, and parts that requires extensive industrial facilities, specialized tools and equipment, or uniquely experienced and trained personnel that are not available in lower echelon-level maintenance activities, and is a function and, as such, is independent of any location or funding source and may be performed in the public or private sectors (including the performance of interim contract support or contract logistic support arrangements. Depot-level maintenance and repair also includes the fabrication of parts, testing, and reclamation, as necessary; the repair, adaptive modifications or upgrades, changes events made to operational software, integration and testing; and in the case of either hardware or software modifications or upgrades, the labor associated with the application of the modification.

Engineering Technical Assistance Request (ETAR)—The document and process for organizations to request and receive disposition instructions, from the cognizant engineering organization, when published technical data is inadequate for the task at hand.

Organic—Assigned to and forming an essential part of a military organization.

Organic depot maintenance—Maintenance performed by a military service under military control using government owned or controlled facilities, tools, test equipment, spares, repair parts, and military or government civilian personnel.

Workload—An amount of work, usually specified in direct labor hours or workdays, that relates to specific weapon systems, equipment, components, or programs and to specific services, facilities, and commodities.

Attachment 2

VOLUME/CHAPTER BREAKDOWN

Table A2.1. Volume/Chapter Breakdown.

Volume/Chapter Breakdown		
VOLUME 1 DEPOT MAINTENANCE PRINCIPLES	**VOLUME 2 DEPOT MAINTENANCE PRODUCTION**	**VOLUME 3 DEPOT MAINTENANCE PRODUCTION SUPPORT**
Chapter 1	**Chapter 1**	**Chapter 1**
Depot Maintenance Management Principles	Depot Maintenance Production Labor Entry	Depot Maintenance Work Measurement
Chapter 2	**Chapter 2**	**Chapter 2**
Roles and Responsibilities	Work Control Documents and Technical Data	Depot Maintenance Production Support
Chapter 3	**Chapter 3**	**Chapter 3**
Safety, Security, and Housekeeping	Tools and Equipment Management	Operational Workloading, Planning, and Scheduling Control
Chapter 4	**Chapter 4**	**Chapter 4**
Maintenance Training	Foreign Object Damage/Dropped Object Prevention Programs	Sunshade Management
Chapter 5	**Chapter 5**	**Chapter 5**
Impoundment	Maintenance Operation Center and Aerospace Vehicle Distribution Officer	Depot Maintenance Plant Management
Chapter 6	**Chapter 6**	**Chapter 6**
Workplace Communications and Maintenance Cyber Discipline	Depot Engine Management	Material Management
Chapter 7	**Chapter 7**	**Chapter 7**
Additional Program Requirements	Aircrew Egress Systems Maintenance Program	Functional Check Flight Program
	Chapter 8	**Chapter 8**
	Maintaining Commercial Derivative Aircraft	Quality Assurance

	Chapter 9	
	Oil Analysis Program	
	Chapter 10	
	Depot Field Teams	
	Chapter 11	
	Ground Instructional Trainer Aircraft	
	Chapter 12	
	Additional Program Requirements	