



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS AIR FORCE MATERIEL COMMAND
WRIGHT-PATTERSON AIR FORCE BASE OHIO

AFI21-102_AFMCSUP_AFMCGM2017-01

3 January 2017

MEMORANDUM FOR ALHQCTR/CC/CL

FROM: HQ AFMC/A4
4375 Chidlaw Road, Room C114
Wright-Patterson AFB OH 45433-5006

SUBJECT: Air Force Materiel Command (AFMC) Guidance Memorandum (GM) to AFI 21-102_AFMCSUP, *Depot Maintenance Management*

1. By order of the Commander, AFMC, this is an AFMC GM immediately changing AFI 21-102_AFMCSUP_I. Compliance with this publication is mandatory. There are no releasability restrictions on this publication. To the extent its direction is inconsistent with other AFMC publications, the information herein prevails, in accordance with AFI 33-360, *Publications and Forms Management*.
2. This GM incorporates AFI21-102_AFMCSUP_AFMCGM2016-01 dated 2 Jun 2016 along with changes to Chapter 6 – Depot Maintenance Support, Chapter 8 – Quality Assurance (QA), and Chapter 12 – Aircraft Egress Systems Maintenance. Each change should be read in its entirety. Updates to the references, and abbreviations and acronyms listings have also been included in the attachment.
3. In advance of a rewrite of AFI 21-102_AFMCSUP, the attachment to this memorandum provides guidance changes that are effective immediately.
4. The guidance in this memorandum is void 1-year from the date of this memorandum, or upon incorporation by interim change to, or rewrite of, AFI 21-102_AFMCSUP.
5. Our POCs are Mr. Greg Treadwell, HQ AFMC/A4MM, DSN 787-7932, or via email at james.treadwell.1@us.af.mil and Mr. Dave Workman, HQ AFMC/A4MM, DSN 986-2276, or via email at david.workman@us.af.mil.

DONALD E. KIRKLAND
Brigadier General, USAF
Director of Logistics, Civil Engineering
and Force Protection

Attachment:
Guidance Changes

Attachment
Guidance Changes

(Replace) 2.7.5. (Added-AFMC) Ensure technical data accuracy IAW TO 00-5-1 (T-1) and the AFMAN 63-143, *Centralized Asset Management Procedures*, Logistics Requirements Determination Process (LRDP) Bill of Work (BOW).

(Replace) 2.8.1. (Added-AFMC) Ensure effective management of the Center's maintenance training program IAW AFI 36-2201 AFMC Supplement, Air Force Training Program, AFI 36-2650 AFMC Supplement, Maintenance Training, and Chapter 13 of this instruction. Provide aircraft, personnel, and equipment to support the maintenance training program.

(Add) 2.8.21. (Added-AFMC) Ensure corrosion control and prevention is implemented IAW AFMCI 21-117, *Corrosion Control and Prevention Program and Marking of Aerospace Equipment*.

(Replace) 3.7.1.1.3. (Added-AFMC) Follow AFMAN 63-143 to develop the Weapon System Sustainment (WSS) requirements and funded customer orders.

(Replace) 3.8.6. (Added-AFMC) Advocate and implement Command/Center programs for collecting, reclaiming, recycling, and disposing of industrial products, fluids, chemicals, and scrap materials (except precious metals and Demilitarization (DEMIL)/Mutilation required scrap materials which will be handled IAW AFI 23-101 and AFMAN 23-122 (T-1)) to reduce the environmental burden on hazardous waste streams to landfills and industrial treatment processing.

(Replace) 6.1.1.2. (Added-AFMC) Participate in the Spares Requirement Review Board (SRRB) per AFMAN 63-143.

(Replace) 6.1.1.3. (Added-AFMC) Provide non-parts supportability elements for the Aircraft and Missile Requirements (AMR) as part of the LRDP per AFMAN 63-143.

(Replace) 6.1.1.6.1. (Added-AFMC) Flying hours for all FCFs shall be updated in REMIS and installed engine times shall be updated in the Comprehensive Engine Management System (CEMS) or G081, *Integrated Maintenance Data System*, as applicable, NLT the next duty day after occurrence IAW AFI 21-103. **(T-1)**

(Add) 6.2.1.9. (Added-AFMC) Ensure, and make readily available, all turn-in documents have a DLA signature of receipt for assets moving from AF repair shops to DLA for storage/disposition.

(Add) 6.2.1.10. (Added-AFMC) Develop, implement, and maintain a standardized process to support aircraft programmed depot maintenance and major overhaul material cost forecasts. For additional information, reference AFI 65-101 and AFMAN 63-143.

(Add) 6.2.1.11. (Added-AFMC) Develop, implement, and maintain a standardized process to support developing aircraft material costs for inclusion in aircraft sales rates, including the source or basis for material costs. For additional information, reference AFI 65-101.

(Replace) 6.2.2. (Added-AFMC) Kitting. AFSC shall establish a process to assemble aircraft specific or commodity component specific disparate parts and non-parts into one unit to be delivered to maintenance as part of the critical path for that repair requirement. Kit content shall be developed and

sustained using a List of Material that is fully integrated with the corresponding AFMAN 63-143 LRDP BOW.

(Replace) 7.1.1.1.1. (Added-AFMC) WCDs shall be auditable and meet the requirements of AFMAN 63-143, TO 00-5-1, TO 00-20-1, and TO 00-25-4. **(T-1)**

(Replace) 8.1. (Added-AFMC) AFSC shall further define and implement this chapter to standardize QA functions across the ALCs. EXCEPTION: See AFI 11-301V1, *Aircrew Flight Equipment (AFE) Program*, and AFI 11-301V1 AFMC Sup, *Aircrew Flight Equipment (AFE) Program*, for units performing maintenance and configuration requirements of aircrew flight equipment.

(Replace) 8.2.1.1. (Added-AFMC) AFSC will implement the MSEP using the following minimum requirements. EXCEPTION: See AFI 21-200, *Munitions and Missile Maintenance Management*, AFI 21-202V1, *Missile Maintenance Management*, and AFI 21-202V2, *Cruise Missile Maintenance Management*, for additional MSEP inspection requirements for units performing maintenance with Intercontinental Ballistic Missiles (ICBMs), space launch mission assurance, and/or related systems and components.

(Replace) 8.2.1.1.2. (Added-AFMC) Define the process for control, routing, and follow-up of the AFMC Form 77, *Request for Quality Assistance (RQA)*, or the electronic equivalent.

(Replace) 8.2.1.3.4.1. (Added-AFMC) The AQL/standard is derived from QA performance based data. This standard is the acceptable quality level (number of minor defects) that can be considered satisfactory as a process average or conforming to established criteria. An AQL/standard denotes the maximum allowable number of minor findings for any assessment. AQLs will be developed for each major workload being assessed. Workload task/assessment criticality and complexity will be considered when setting AQLs. AQLs are developed to evaluate the complete task. When tasks are not fully evaluated, AQLs for that task/assessment will be adjusted. AQLs will routinely be analyzed, evaluated, and adjusted based on historical data. AFSC will develop procedures for determining minimum AQL/standard levels. EXCEPTION: See AFI 21-200, AFI 21-202V1, and AFI 21-202V2 for AQLs/baselines for ICBMs, space launch mission assurance, and/or related system and components. See AFI 11-301V1 and AFI 11-301V1 AFMC Sup for units performing maintenance and configuration requirements of aircrew flight equipment.

(Replace) 8.2.1.4.3. (Added-AFMC) Routine Inspection (RI). RIs are assessments of common depot production maintenance programs and processes that require continuous evaluation. They may be evaluated independently or may be performed in conjunction with any other type of assessment (e.g., PE, QVI, etc.). The AFMC QA EIM site will contain checklists that identify the mandatory routine inspection items. Mandatory questions, when applicable to the organization, must be evaluated for the assessment to qualify as a RI. Observed deficiencies beyond the RI checklist questions shall be recorded in the Command approved QA database under the category of RI. The following are the AFMC RI areas which must be included in the QASP (if applicable):

(Replace) 8.2.1.4.3.12. (Added-AFMC) Explosive Safety.

(Delete) 8.2.1.4.3.13. (Added-AFMC) Nondestructive Inspection (NDI).

(Replace) 8.2.1.4.6.3. (Added-AFMC) Unsatisfactory Condition Report (UCR). An unsatisfactory condition is defined as an event/discrepancy that requires immediate supervisory intervention to ensure safety or process/product fit, form, or function reliability. Unsatisfactory conditions are deemed major and will be documented as a UCR. A condition of a minor nature shall be documented against the applicable checklist or its regulatory guidance.

(Add) 8.2.1.4.8. (Added-AFMC) Special Inspections (SI). Special Inspections when driven by the analysis of assessment data may be conducted at the discretion of the local QA or requested by ALC/CC/CL/CD, MXG/CC, SQ/CC or work center supervisors. Additionally, observed deficiencies beyond the scope of an inspection in progress not meeting the criteria of a DSV, TDV or UCR will be recorded in command approved information system under the category of Special Inspection. SIs will be assigned a rating (QAR-1 or 3) based on severity of the observation. SIs are designed to provide a flexible tool to complement other quality assessment types.

(Replace) 8.2.1.5. (Added-AFMC) A QAR rating is a value reflecting the results of quality assessments. These ratings shall be input into the Command approved QA database. Assessments will be rated; however, MIs will be rated at local discretion. Deficiencies shall be classified as major or minor findings. A minor finding is defined as an unsatisfactory condition that requires repair or correction, but does not endanger personnel, affect safety of flight, jeopardize equipment reliability, or warrant discontinuing a process or equipment operation. Minor findings identified during an inspection/assessment will be documented and remain as minor findings regardless of the assigned QAR rating. A major finding is defined as a condition that would endanger personnel, affect safety of flight, jeopardize equipment reliability, or warrant discontinuing process or equipment operation.

(Replace) 8.2.1.7.3. (Added- AFMC) MSEP Summary. The MSEP summary shall be compiled and reported on a monthly basis. The MSEP summary will include visual information, graphs, narratives, quality trends identified through inspections and evaluations, discussion of common problem areas, and descriptions of successful programs or initiatives. As a minimum, the narratives must contain an analysis of MSEP results, a summary of significant discrepancies, technical inspections, accepted quality escapes (i.e., deficiency reports), and recommendations for improvement. The MSEP summary will include pertinent internal and external metrics as outlined below. The MSEP summary shall be distributed to HQ AFMC/A4, AFSC/LG, ALC/CC, and Group CC/CL.

(Replace) 8.2.2.1.2. (Added-AFMC) Processing. QA personnel will input assessments into the Command approved QA database within one work day (24 hours). Production personnel responsible for the deficiency/finding will provide a viable corrective/preventative action plan within 8 business days. A corrective/preventative action plan will be developed to prevent or minimize the potential for recurrence. QA will review the corrective action plan and will either accept or reject the corrective/preventative action plan within 2 business days. AFSC shall further identify AFMC Form 343 processing procedures to include extension of suspense dates.

(Replace) 8.3.1.2. (Added-AFMC) All QASs, inspectors, and evaluators (i.e., QA personnel) must be trained IAW AFI 36-2650 AFMC Supplement and training requirements outlined in the AFMC GS-1910 Civilian Training Plan (CTP). EXCEPTION: See AFI 21-200, AFI 21-202V1, and AFI 21-202V2 for additional training requirements for QASs who inspect maintenance actions on ICBMs, space launch mission assurance, and/or related systems and components.

(Add) 8.3.13. (Added-AFMC) Ensure Aircrew Flight Equipment QASs are trained IAW AFI 11-301V1 and AFI 11-301V1 AFMC Sup, prior to evaluating AFE tasks.

(Replace) 8.6.1.5. (Added-AFMC) Ensure development and maintain all depot maintenance QA training to include the Depot Maintenance QA Course and the GS-1910 CTP. HQ AFMC/A4M will provide functional approval for all depot maintenance QA training.

(Replace) 10.1.1.2.1. (Added-AFMC) AFSC shall develop, implement, and maintain standardized processes and procedures to account for all TKs, tools, and dispatchable equipment. Utilize AFMC Form 309, *AFMC Tool Control Inventory Record*, when applicable.

(Add) 12.4.1. (Added-AFMC) 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 requests will be submitted to the Command Egress functional manager for review. The Command Egress functional manager will then forward the waiver to the HAF 2A6X3 Career Field Manager for final approval/disapproval. If the waiver is disapproved, the individual must complete classification training.

(Add) 12.9.3. (Added-AFMC) Initial egress familiarization training will be hands-on using an aircraft. **(T-1).**

(Add) 12.9.3.1. (Added-AFMC) Units desiring to use an aircraft maintenance trainer instead of an aircraft must submit a request through the MXG/CC to the MAJCOM/Lead Command for approval/disapproval. **(T-2).**

(Add) 12.9.4. (Added-AFMC) Refresher familiarization training will be conducted annually using an aircraft, maintenance trainer or media, which is approved and designated by the egress work center supervisor. **(T-1).**

(Add) 12.9.4.1. (Added-AFMC) Non-egress personnel may administer training media (slide show/video) during refresher familiarization training.

(Add) 12.9.4.2. (Added-AFMC) Direct students to the egress section if technical assistance is required and/or questions are raised concerning course subject matter.

(Add) 12.9.5. (Added-AFMC) Only egress personnel, certified on assigned egress system(s), will conduct initial egress familiarization training. **(T-1).** **Exception:** MT personnel may conduct this training provided they are currently certified to perform egress maintenance.

(Add) 12.9.6. (Added-AFMC) Training media must meet approval of the MAJCOM Functional Manager (MFM) or current media produced by the 367 TRSS.

(Add) 12.9.7. (Added-AFMC) Units with unique, experimental, or test aircraft requirements.

(Add) 12.9.7.1. (Added-AFMC) If training courses are not available through AETC, units must use interagency training before considering non-government training sources. **(T-1).**

(Add) 12.9.7.1.1. (Added-AFMC) If courses in both of these sources are not available, units will establish a documented training program that meets the intent of this instruction. **(T-1).**

(Add) 12.9.7.1.2. (Added-AFMC) Training will be conducted by the most qualified personnel and must be approved by the MFM prior to implementation. **(T-1).**

(Replace) 13.5.1.3.1. (Added-AFMC) Center DOP Program Manager shall provide an initial dropped object report via e-mail to HQ AFMC/A4M workflow within 24 hours of occurrence. In addition, if it involves casualties, property damage, or if adverse publicity is likely, report IAW AFI 10-206, *Operational Reporting*. **(T-1)** The safety office shall be notified of all dropped objects within 24 hours of occurrence, unless it involves casualties, property damage, or if adverse publicity is likely, and then the safety office shall be notified immediately. The DOP report format listed in **Attachment 2** shall be followed.

(Replace) 13.5.1.3.2. (Added-AFMC) Center DOP Program Manager shall provide a final dropped object report via e-mail to HQ AFMC/A4M workflow. Reports shall be maintained for a minimum of 24 months (may be electronic). The DOP report format listed in **Attachment 2** shall be followed.

(Replace) 13.5.1.4. (Added-AFMC) Input the data from the Center DOP reports into the DOP tracking tool and provide reports to the HQ AFMC/A4 when requested.

(Replace) 13.6.1.1.3.1. (Added-AFMC) Center FOD Prevention Program Manager shall establish a process to report cut tires to airfield management upon discovery so the taxiways and runways can be inspected for possible FOs.

(Replace) 13.6.1.1.3.2. (Added-AFMC) Center FOD Prevention Program Manager shall provide an initial FOD report via e-mail to HQ AFMC/A4M workflow within 24 hours of occurrence. The final report will be submitted to AFMC/A4M via email after investigation is complete. Reports shall be maintained for a minimum of 24 months. The FOD report format listed in **Attachment 3** shall be followed.

(Delete) 13.6.1.1.3.3. (Added-AFMC) Complex/Wing/Center FOD Prevention Program Manager shall provide a completed AFMC Form 40 Foreign Object Damage Record, or electronic equivalent, monthly via e-mail to HQ AFMC/A4M workflow.

(Replace) 13.6.1.1.3.4. (Added-AFMC) When FOD is discovered on a transient aircraft, depot input/output, Engine Regional Repair Center (ERRC), or Centralized Repair Facility (CRF) engine, the Center FOD Prevention Program Manager shall notify the owning organization within 24 hours. An informational copy of the FOD report must be provided to the owning organization's safety office/FOD monitor to ensure compliance with AFI 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.

(Replace) 13.6.1.1.4. (Added-AFMC) Input the data from the Center FOD reports into the FOD tracking tool and provide reports to the HQ AFMC/A4 when requested.

(Change) 13.11.1. (Added-AFMC) The AFMC depot maintenance training program shall be accomplished IAW AFI 36-2650 AFMC Supplement.

(Add) 13.11.4. (Added-AFMC) Industrial Engineering Technician (IET)/Planner Training. All new IETs/Planners must successfully complete course CRXMAS0011000SU, *Depot Maintenance Planning for Exchangeables*, or course CRXMAS0012000SU, *Depot Maintenance Planning for Aircraft/Missiles*.

(Add) 13.11.4.1. (Added-AFMC) All IETs/Planners must successfully complete Bill of Material (BOM) and Labor Standards recurring training, at a minimum, every two years. All training will be documented in the Training Scheduling System (TSS).

(Add) 13.12.2.1. (Added-AFMC) All personnel assigned to AFSC aircraft/missile maintenance units, military and civilian, shall use the Training Scheduling System-Production Acceptance Certification (TSS-PAC) MIS to document recurring training requirements and certifications.

(Replace) 13.12.6.1.2. (Added-AFMC) Develop, implement, and maintain the TSS-PAC MIS.

(Add) 13.13.3.23. (Added-AFMC) Aircrew Flight Equipment IAW AFI 11-301V1 and AFI 11-301V1 AFMC Sup.

(Change) 13.14.1.1. (Added-AFMC) SCRs will be approved and maintained at the Group level.

(Replace) 13.15.1.1. (Added-AFMC) Flying hours for all FCFs shall be updated in REMIS and installed engine times shall be updated in CEMS or G081, as applicable, NLT the next duty day after occurrence IAW AFI 21-103. **(T-1)**

(Replace) 13.15.2 (AFMC) AFSC shall develop, implement, and maintain standardized processes and procedures governing the FCF Program. This program is managed by the applicable production squadron and flight test organization. AFSC will ensure:

(Replace) 13.15.2.1. (Added-AFMC) A FCF Program Manager will be designated at each squadron or geographically separated Group. As a minimum, the FCF Program Manager will:

(Add) 13.18.1. (Added-AFMC) AFSC shall develop, implement, and maintain Repair Network Integration processes and procedures. AFSC shall:

(Add) 13.18.1.1. (Added-AFMC) Establish oversight procedures for evaluating intermediate-level maintenance performance and adherence to standards, in accordance with AFI 90-201 and/or other appropriate AFSC performance reviews. Ensure oversight procedures include assessments for software requirements to accommodate Dash-6 test cell standards, if appropriate.

(Add) 13.18.1.2. (Added-AFMC) Establish and provide oversight for intermediate-level metrics in terms of schedule (Availability), quality (Performance), and cost (Affordability) as required by AFI 20-117 and by AFMAN 20-118, *Repair Network Integration Procedures*. Develop metrics in order to evaluate intermediate-level maintenance performance.

(Replace) 13.19.1.4.1. (Added-AFMC) Specify responsibilities of affected work centers for accurate and timely MIS and CEMS reporting of Time Compliance Technical Orders (TCTOs), SIs, Time Change Items (TCIs), and other documentation requirements (e.g., borescope inspections, blade blending, and CANN actions).

(Replace) 13.24.1. (Added-AFMC) AFSC shall have program management responsibility for the ABDR program. For additional guidance, reference AFSCI 10-202, *Aircraft Battle Damage Repair Forces*.

(Add) 13.26. (Added-AFMC) Sun Shade Management. AFSC shall develop, implement, and maintain standardized processes and procedures to address Sun Shade Management IAW AFI 21-136, *Aircraft Sun Shade Management*.

(Add) 13.27. (Added-AFMC) Aircrew Flight Equipment (AFE) Program. AFSC shall manage AFE related maintenance programs IAW AFI 11-301 series instructions, including AFMC supplements and all applicable technical orders.

(Add) 13.28. (Added-AFMC) AMARG Reclamation and Disposal. AFSC shall develop, implement, and maintain standardized processes and procedures to address unique AMARG reclamation and disposal operations.

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 11-301V1, *Aircrew Flight Equipment (AFE) Program*, 25 February 2009
AFI 11-301V1 AFMC Sup, *Aircrew Flight Equipment (AFE) Program*, 14 November 2011
AFI 21-136, *Aircraft Sun Shade Management*, 20 July 2012
AFI 21-200, *Munitions and Missile Maintenance Management*, 02 January 2014
AFI 21-202V1, *Missile Maintenance Management*, 17 September 2014
AFI 21-202V2, *Cruise Missile Maintenance Management*, 29 October 2014
(Delete) AFI 36-2232 AFMC Sup, *Maintenance Training*, 13 December 2010
AFI 36-2650 AFMC Sup, *Maintenance Training*, 10 December 2015
AFMAN 20-118, *Repair Network Integration Procedures*, 27 October 2015
AFMAN 63-143, *Centralized Asset Management Procedures*, 12 August 2015
(Delete) AFMCI 10-202, *Aircraft Battle Damage Repair Forces*, 30 August 2011
AFMCI 21-117, *Corrosion Control and Prevention Program and Marking of Aerospace Equipment*, 28 May 2014
AFSCI 10-202, *Aircraft Battle Damage Repair Forces*, 13 April 2016

Prescribed Forms

AFMC Form 77, *Request for Quality Assistance (RQA)*

Adopted Forms

(Delete) AFMC Form 40, *Foreign Object Damage Record*
(Delete) AFMC Form 77, *Request for Quality Assistance (RQA)*

Abbreviations and Acronyms

AFE-Aircrew Flight Equipment
DEMIL-Demilitarization
ICBM-Intercontinental Ballistic Missile
TSS-Training Scheduling System
TSS-PAC-Training Scheduling System-Production Acceptance Certification

(Replace) Attachment 3 (Added-AFMC)
FOREIGN OBJECT DAMAGE (FOD) REPORT

Figure A3.1. Foreign Object Damage (FOD) Report.

MEMORANDUM FOR	<i>Date</i>
FROM: Unit Designation/Office Symbol, Street, Base and Zip Code	
SUBJECT: Foreign Object Report. FOD program report number (unit,-F-, year, and month, followed by sequence number : example, 301FW-F-060501)	
Type of Report: Initial/Update/Final	
Date and Time of Incident:	
Unit (ALC,MXG,MXS) and Base of Incident:	
<ul style="list-style-type: none">- Production Machine Gate(s) Affected- Procedures, TOs, WCDs Affected- Gate Performance Metric and Quality Metric Affected- Organizational Funding Source Affected	
Origin of Sortie:	
When discovered (Preflight, Postflight, In-Coming, Test Cell, etc.)	
Owning Unit, Base and MAJCOM	
MDS and Tail Number (N/A for Test Cell incidents)	
Engine Type, Make, Series, Modification (TMSM)	
Engine S/N:	
Engine Position (If Applicable):	
Time Since Overhaul:	
Description of Incident:	
Material Failure: (Yes or No)	
Tech Data Deficiency: (Yes/No)	
Preventable/Non-Preventable:	
Investigation Findings:	
<ul style="list-style-type: none">- Production Machine Gate(s) Identified as Probable Cause- Procedures, TOs, WCDs Identified for Correction- Gate Performance Metric and Quality Metric Updated- Organization Responsible for Funding Repair	
Action Taken to Prevent Recurrence:	
Parts Cost:	Labor Cost:
Total Cost:	
Additional Comments (if necessary):	

///Sign///

FOD Monitor, Unit Designation

///Sign///

AFSC FOD Prevention Program
Manager

**BY ORDER OF THE SECRETARY
OF THE AIR FORCE**



AIR FORCE INSTRUCTION 21-102

16 JULY 2012

**AIR FORCE MATERIEL COMMAND
Supplement**

19 DECEMBER 2014

Maintenance

DEPOT MAINTENANCE MANAGEMENT

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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Certified by: HQ AFMC/A4D
(Eugene A. Jeunelot, Jr.)

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30 April 2008; AFMCI 21-109,
18 May 2009; AFMCI 21-120,
02 May 1996; AFMCI 21-127,
23 June 2005; AFMCI 21-130,
15 November 2007; AFMCI 21-
136, 06 February 2003; AFMCI
21-140, 13 May 2005; AFMCI
21-156, 25 August 2004; and
AFMCI 21-185, 15 May 2012.

Pages:

This Air Force Instruction (AFI) provides directive guidance for depot maintenance management. For policies and procedures used in planning and administering depot level contract maintenance programs, refer to AFI 63-101, *Acquisition and Sustainment Life Cycle Management*. This instruction implements Air Force Policy Directive (AFPD) 21-1, *Air and Space Maintenance*, and provides additional guidance on requirements contained in AFPD 63-1/20-1, *Acquisition and Sustainment Life Cycle Management*, and AFPD 13-5, *Air Force Nuclear Enterprise*. This AFI applies to all major commands (MAJCOMs), the Air National

Guard (ANG), Air Force Reserve Command (AFRC) and their subordinates. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the Air Force (AF) Form 847, *Recommendation for Change of Publication*. This publication may be supplemented, but supplements must be provided to the OPR of this publication for review prior to publication. Records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) AFMAN 33-363, *Management of Records*, and disposed of IAW the AF Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afirms/afirms/afirm/rims.cfm>.

(AFMC) This supplement implements and extends the guidance of AFI 21-102, *Depot Maintenance Management*, and provides directive guidance for depot maintenance management. For policies and procedures used in planning and administering depot level contract maintenance programs, refer to AFI 63-101/20-101, *Integrated Life Cycle Management*, AFI 63-138, *Acquisition of Services*, and Air Force Materiel Command Instruction (AFMCI) 21-149, *Contract Depot Maintenance (CDM) Program*. The Air Force Sustainment Center (AFSC) will develop directives as mandated by AFI 21-102 and this supplement, and provide them to the OPR of this instruction for review prior to publication. Only current and verified technical data, as authorized by TO 00-5-1, *Air Force Technical Order System*, shall be used for depot maintenance. This publication does not apply to the Air National Guard Bureau (ANG) or the Air Force Reserve Command (AFRC) and their units. However, if an AFRC unit is assigned or associated with AFMC where AFMC is the lead, this guidance would be applicable. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) the Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). This publication may be supplemented at any level, but all direct Supplements must be routed to the OPR of this publication for coordination prior to certification and approval. The authorities to waive wing/unit level requirements in this publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Therefore, unless otherwise stated, requirements throughout this instruction are mandated for compliance with a waiver authority level of Tier two (T-2) as defined in AFI 33-360. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items.

SUMMARY OF CHANGES

This publication has been substantially revised and must be reviewed in its entirety. It defines depot maintenance, details depot maintenance responsibilities, and provides guidance for depot purchased equipment maintenance and maintenance requirements work packages. It also includes depot maintenance execution guidance that was previously found in AFI 21-101, *Aircraft and Equipment Maintenance Management*. This publication supersedes the portion of AFI 21-101 addressing depot maintenance requirements.

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Chapter 1

DEPOT MAINTENANCE MANAGEMENT

1.1. Depot Maintenance. This instruction provides guidance for the management of AF depot maintenance. The AF maintains three organic depots, all within Air Force Materiel Command. This AFI requires AFMC to develop, implement, and sustain AF depot maintenance.

1.1. (AFMC)AFMC shall: Provide command level policy, guidance, and staff coordination for all activities required to operate depot maintenance activities for Air Force weapon systems.

1.1.1. **(Added-AFMC)** AFMC units performing F-35 depot maintenance activities may use Time Compliance Technical Data (TCTD).

1.1.1.1. **(Added-AFMC)** TCTDs are F-35 joint program instructions provided by the Joint Program Office (JPO). They are developed with Service/Partner participation and provide source documentation for Air Force repair instructions specific to the F-35.

1.2. Aircraft and Equipment Readiness. Aircraft and equipment readiness is the maintenance mission. The maintenance function ensures assigned aircraft and equipment are safe, serviceable, and properly configured to meet mission needs. Maintenance actions include, but are not limited to, inspecting, repairing, overhauling, modifying, preserving, refurbishing, troubleshooting, testing, and analyzing condition and performance. Supervisors must emphasize safety, quality, and timeliness in the performance of maintenance. The concept of quality maintenance must be fostered by each supervisor and technician to ensure the integrity and skill of maintainers are not degraded. To the greatest extent possible, maintenance is accomplished on a preplanned scheduled basis. Planning provides the most effective and efficient use of people, facilities, and equipment, reduces unscheduled maintenance, and allows for progressive actions toward maintaining and returning aircraft and equipment to safe operating condition. Conducting a bench check of components and proper control of repair cycle assets throughout the maintenance cycle are also critical elements of the equipment maintenance program. AF units must implement and manage the tasks specified in the scheduled program for their assigned aircraft and associated support equipment (SE). Preventive maintenance concepts are described in Technical Order (TO) 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*, and TO 00-25-108, *Communications-Electronics Depot Support*.

1.3. Maintenance Discipline. It is the responsibility of all maintenance personnel to comply with all written guidance to ensure required repairs, inspections, and documentation are completed in a safe, timely, and effective manner. Supervisors are responsible for enforcing and establishing a climate that promotes maintenance discipline.

1.4. Technical Orders (TOs). AF TOs are published under the authority of the Secretary of the Air Force (SECAF). Compliance with TOs is mandatory, except as explained in TO 00-5-1, *AF Technical Order System*.

1.5. Modification Management. A modification proposal is a recommendation to alter the form, fit, function, or interface of an item, subsystem, or system. Refer to AFI 63-131, *Modification Program Management*, for modification management procedures.

1.6. Maintenance Information Systems (MIS). MIS refers to automated maintenance information systems that support and enable maintenance business processes. MIS will be used to document maintenance actions and determine fleet health. The information entered into the MIS will be accomplished IAW TO 00-20-2, *Maintenance Data Documentation*. MIS systems are clearly defined in TOs 00-20-1, 00-20-2, and 00-20-3, *Maintenance Processing of Repairable Property and the Repair Cycle Asset Control System*. Non-maintenance systems are considered management information systems which follow guidelines under separate AFIs.

1.7. Nuclear Weapons Related Materiel (NWRM). The accomplishment of depot maintenance on NWRM items, whether at organic or contract (commercial) sites, shall comply with AFI 20-110, *Nuclear Weapons-Related Materiel Management*.

1.8. Duty Shifts and Rest Periods. Depot maintenance personnel shall have their duty hours aligned to provide the best mission support. Civil service employee work hours are governed by the collective bargaining agreement and its local supplement and federal and state laws. Contracted civilian employee work hours are governed by the contract, federal, and state laws. Consider union requirements and climatic conditions when determining work schedules; local work/rest schedules for extreme temperatures are recommended by the Medical Group commander.

1.9. Civilian Visitors. Units shall not permit civilian visitors to operate any AF equipment or specialized vehicles. Civilian employees, contractor employees, and other civilian personnel who must operate AF equipment as part of their assigned duties are not considered civilian visitors.

1.10. Statutory Framework. Title 10 of the United States Code contains a number of sections addressing depot maintenance. The paragraphs below identify selected applicable code sections. NOTE: When necessary, authoritative interpretations or explanations of Title 10 provisions should be requested from the appropriate functional legal office.

1.10.1. Depot maintenance and repair is defined in Title 10, United States Code (USC) § 2460, *Definition of depot-level maintenance and repair*. It is defined as 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.

1.10.2. Title 10, USC § 2464, *Core depot-level maintenance and repair capabilities*, defines the requirements for organic depot maintenance capabilities. Core depot maintenance are those which are necessary to maintain and repair the weapon systems and other military equipment (including mission-essential weapon systems or materiel), not later than four years after achieving initial operational capability, but excluding systems and equipment under special access programs, nuclear aircraft carriers, and commercial items. These capabilities

are identified by the Secretary of Defense, in consultation with the Chairman of the Joint Chiefs of Staff, as necessary to enable the armed forces to fulfill the strategic and contingency plans prepared by the Chairman of the Joint Chiefs of Staff. Core depot maintenance capabilities are discussed in detail in Department of Defense (DoD) Instruction 4151.20, *Depot Maintenance Core Capabilities Determination Process*.

1.10.3. Title 10, USC § 2466, *Limitations on the performance of depot-level maintenance of materiel*, (the 50/50 rule) requires not more than 50 percent of the funds made available in a fiscal year (FY) to a military department or a Defense Agency for depot-level maintenance and repair workload may be used to contract for the performance by non-Federal Government personnel of such workload for the military department or the Defense Agency. Any such funds that are not used for such a contract shall be used for the performance of depot-level maintenance and repair workload by employees of the DoD.

1.10.4. Title 10, USC §2469, *Contracts to perform workloads previously performed by depot-level activities of the Department of Defense: requirement of competition*, (the \$3 Million Rule) requires that depot-level maintenance and repair workloads that have a value of not less than \$3,000,000 (including the cost of labor and materials), that is being performed by a depot-level activity of the DoD, may not be changed to performance by a contractor or by another depot-level activity of the DoD, unless the change is made using merit-based selection procedures (for competitions among all depot-level activities of the DoD) or competitive procedures (for competitions among private and public sector entities.) Office of Management and Budget Circular A-76 does not apply to performance changes under this section.

1.10.5. Title 10, USC §2472, *Prohibition on management of depot employees by end strength*, requires that civilian DoD employees (including AF personnel) who perform, or are involved in the performance of depot-level maintenance and repair workloads, may not be managed on the basis of any constraint or limitation in terms of man-years, end strength, full-time equivalent positions, or maximum number of employees. These employees shall be managed solely on the basis of the available workload and the funds made available for such depot-level maintenance and repair.

1.10.6. Centers of industrial and technical excellence (CITEs) are addressed in Title 10, USC § 2474, *Centers of Industrial and Technical Excellence: designation; public-private partnerships*. Within the AF, the SECAF has designated three depot maintenance activities as CITEs: Oklahoma City Air Logistics Center (ALC), Ogden ALC, and Warner Robins ALC. CITEs shall engineer industrial processes and adopt best-business practices in connection with their core competency requirements in order to serve as leaders in their core competencies throughout the DoD and in the national technology and industrial base. CITEs are also permitted to enter into public-private partnerships (PPPs) with private industry or other entities outside the DoD. PPPs are discussed in detail in DoDI 4151.21, *Public-Private Partnerships for Depot-Level Maintenance*.

1.10.7. Title 10, USC § 2476, *Minimum capital investments for certain depots*, (the 6% Rule) discusses the minimum capital investment requirements for certain depots. It requires that each FY, the Secretary of a military department shall invest in the capital budgets of the covered depots of that military department a total amount equal to, but not less than, six percent of the average total combined workload funded at all the depots of that military

department for the preceding three FYs. The capital budget of a depot is defined as including “investment funds spent on depot infrastructure, equipment, and process improvement in direct support of depot operations.”

1.11. (Added-AFMC) Metrics and Reporting. AFSC will develop and provide metrics and reports to higher headquarters as requested. The broad metrics areas include, but are not limited to, Functional Check Flight (FCF) performance, financial, production, quality, manpower, training, capacity, capability, and infrastructure. Each of these broad categories may contain significant numbers of sub-metrics that are useful for depot operations. Standard metrics will be directed as needed in specific data calls and guidance from higher headquarters.

Chapter 2

ROLES AND RESPONSIBILITIES

2.1. Assistant Secretary of the Air Force for Financial Management and Comptroller (SAF/FM) shall:

- 2.1.1. Establish AF budget policies and procedures, to include budget formulation, justification, and execution of Depot Purchased Equipment Maintenance (DPEM).
- 2.1.2. Establish and maintain financial management structures to determine funding priorities, to approve financial plans, and to ensure that funding resources are allocated and executed legally, effectively, and efficiently.
- 2.1.3. Issue operation and maintenance (O&M) direct funding/budget authority when Congress enacts the DoD appropriations.
- 2.1.4. Ensure obligations recorded by 30 September are valid and efficiently used to meet the AF's operational requirements.

2.2. Assistant Secretary of the Air Force for Installations, Environment and Logistics (SAF/IE) shall:

- 2.2.1. Provide policy for depot maintenance and for depot reporting requirements.
- 2.2.2. Collaborate with SAF/FM in developing appropriate budget exhibits and documentation to support the Planning, Programming, Budgeting and Execution (PPBE) process.
- 2.2.3. Coordinate financial planning, requirements, and budget estimates (including changes in the DPEM funding positions) with associated mission panels.
- 2.2.4. Validate/defend justification of maintenance requirements and budget estimates.
- 2.2.5. Report depot figures for DoD reporting requirements.
- 2.2.6. Develop an AF Depot Maintenance Strategy IAW **Chapter 3** of this Instruction.

2.3. Deputy Chief of Staff for Logistics, Installations, and Mission Support (AF/A4/7) shall:

- 2.3.1. Assist SAF/IE in providing guidance on the requirements generation process for financial planning and budget estimates.
- 2.3.2. Assist SAF/IE in coordinating financial planning, requirements, and budget estimates.
- 2.3.3. Assist SAF/IE in validating/defending justification of maintenance requirements and budget estimates.
- 2.3.4. Develop guidance for the management of depot maintenance.
- 2.3.5. Support SAF/IE in development of the AF Depot Maintenance Strategy IAW **Chapter 3** of this Instruction.

2.4. Deputy Chief of Staff for Operations, Plans and Requirements (AF/A3/5) shall:

- 2.4.1. Provide the force structure contingency scenarios in an unclassified electronic media to SAF/IE, AF/A4/7 and AFMC/CC.

2.5. Commander, AF Materiel Command (AFMC/CC) shall:

2.5.1. Ensure development, implementation, and sustainment of the capability necessary to satisfy depot maintenance requirements for AF managed equipment.

2.5.1.1. Develop a logistics requirements determination process for determining and prioritizing requirements. Ensure the process is integrated, standardized, and repeatable, and that it allows trade-offs for optimization at the AF enterprise level.

2.5.2. Develop and implement depot maintenance strategies, plans, and procedures, and collect and report data to satisfy statutory requirements, including:

2.5.2.1. Core logistics capability IAW Title 10, USC § 2464, *Core logistics capabilities*.

2.5.2.2. 50/50 stipulations and data reporting IAW Title 10, USC § 2466, *Limitations on the performance of depot-level maintenance of materiel*.

2.5.2.3. CITEs and PPPs IAW Title 10, USC § 2474, *Centers of Industrial and Technical Excellence: designation; public-private partnership*.

2.5.3. Develop and implement a process for assessing organic depot maintenance workload requirements and for making depot maintenance source of repair (DSOR) recommendations for non-Core workloads and source of repair decisions IAW AFI 63-101.

2.5.3.1. Assess availability of existing DoD depot capabilities that will satisfy additional AF requirements versus establishing new organic ALC capability or contract support.

2.5.3.2. Ensure development of dual DoD depot sources of repair within an area of responsibility and/or the need for multiple repair sources are justified and documented.

2.5.3.3. Ensure establishment or major expansion of overseas Government depot maintenance facilities is justified and documented. Ensure a continental United States (CONUS) repair source for each item is supported. (NOTE: The backup DSOR for all overseas workload programs is the CONUS DSOR.)

2.5.4. Develop financial planning and prepare budgets for depot maintenance requirements.

2.5.4.1. Provide funding for depot maintenance requirements through the PPBE including the program objectives memorandum (POM) and the annual planning and programming guidance (APPG) processes.

2.5.4.2. Develop and implement a productivity and work specification procedure to ensure performance to budget.

2.5.5. Provide processes to determine and substantiate depot maintenance workload.

2.5.6. Modernize depot facilities, processes, and equipment through the use of new technologies, production enhancements, and development of consolidated support facilities.

2.5.6.1. Review existing depot capabilities for capital equipment investments to modernize, replace, or update.

2.5.6.2. In collaboration with Program Managers (PMs)/Product Support Managers (PSMs)/Product Group Managers (PGMs), ensure capital investment actions are accomplished to provide for depot maintenance activities.

- 2.5.7. Implement procedures to assess processes for improvement and to ensure technical orders contain all data required to execute depot maintenance and demilitarization requirements.
- 2.5.8. Have a surge contingency plan that provides:
- 2.5.8.1. Guidance and procedures for a responsive capability to accelerate, surge, or compress depot maintenance or modifications.
 - 2.5.8.2. Procedures for approval or disapproval from the requesting PM of AFMC's projection of cost/impacts.
- 2.5.9. Ensure robust corrosion prevention and control execution for fielded assets.
- 2.5.9.1. Collect and report corrosion related cost data as required by the AF Corrosion Control and Prevention Executive.
 - 2.5.9.2. Develop funding forecasts to mitigate newly discovered corrosion problem areas.
 - 2.5.9.3. Support PM/PSM/PGM and cognizant engineering authority in developing substitution strategies for hazardous and expanded standards chemicals (to include Cd, Cr 6+, strontium chromate, lead, etc.).
- 2.5.10. Employ serialized item management (SIM) techniques. SIM is enabled through Item Unique Identification (IUID), automatic identification technology (AIT), automated information systems (AIS), and radio frequency identification (RFID).
- 2.5.11. Implement a process to control and document cannibalizations (CANN). Establish written guidance on individual responsibilities and specific procedures for cannibalization actions IAW **Chapter 13** of this Instruction.
- 2.5.12. Establish and sustain calibration capability to support maintenance requirements for depot maintenance activities.
- 2.5.13. Ensure depot activities document and report: flying hours; equipment inventory, status, and utilization; and equipment reliability and maintainability deficiencies and/or improvements. (Refs: AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*; AFI 21-118, *Improving Air and Space Equipment Reliability and Maintainability*; and TO 00-20-2.)
- 2.5.14. Ensure a Maintenance Standardization and Evaluation Program (MSEP) is established IAW **Chapter 8** of this Instruction.
- 2.5.15. Allocate resources to meet all mission requirements. Ensure the maintenance organizations are not overly tasked with augmentation duties outside maintenance functional areas.
- 2.5.16. Accomplish depot maintenance activation and business planning. Support development of depot maintenance requirements and planning for new system acquisitions.
- 2.5.17. Implement AF depot maintenance transition plans and manufacturing process procedures.

- 2.5.18. Maintain accurate data on Core, 50/50, and PPP for data call reporting from Headquarters Air Force (HAF).
- 2.5.19. Identify contract partnership workload that is CITE-related and validate the DSOR decision for contract versus organic CITE support.
- 2.5.20. Implement a process through which depot maintenance activities can request and receive engineering disposition for nonconforming technical problems that are outside published authority and new/revised procedures to facilitate equipment troubleshooting and repair procedures under work stoppage or anticipated work stoppage conditions.
- 2.5.21. Implement procedures and training for successful execution of DPEM.
- 2.5.21.1. Schedule and distribute annual memorandums announcing the DPEM process meeting.
 - 2.5.21.2. Publish an annual timeline and calendar of DPEM events that will ensure timely identification, validation, consolidation, and review of requirements in order to satisfy the timetable of HAF PPBE events.
 - 2.5.21.3. Establish processes and lead development and management of maintenance requirements work packages (MRWP) in collaboration with PMs and using commands.
 - 2.5.21.4. Provide guidance on the requirements generation process for DPEM across all the categories of commodities. Articulate the relationship between DPEM requirement and levels of funding and the impact of the unfunded requirement on work deferred and operational readiness.
 - 2.5.21.5. Ensure timely execution and tracking of obligations of DPEM funding.
- 2.5.22. Establish an Aircraft and Equipment Decontamination Program IAW **Chapter 13** of this Instruction.
- 2.5.23. Establish Foreign Object Damage (FOD) and Dropped Object Prevention (DOP) Programs IAW **Chapter 13** of this Instruction.
- 2.5.24. Establish a radiation protection program IAW Air Force Occupational Safety and Health Standard (AFOSHSTD) 48-9, *Radio Frequency Radiation (RFR) Safety Program*, when applicable.
- 2.5.25. Ensure a focal point is identified for environmental, safety, and occupational health requirements, compliance, and worker protection issues. Refer to AFPD 90-8, *Environment, Safety, and Occupational Health*, AFI 32-7080, *Pollution Prevention Program*, and AFI 32-7086, *Hazardous Materials Management*, for additional guidance.
- 2.5.26. Ensure strict adherence to technical data and management procedures.
- 2.5.27. Develop a Depot Maintenance Training Program that ensures maintenance is only performed by personnel who are trained, qualified, and certified, unless under the direct supervision of a trainer or certifier, IAW **Chapter 13** of this Instruction.
- 2.5.28. Ensure standardization of maintenance discipline, procedures, organizational structures, compliance, and management philosophy, IAW **Chapters 6 and 7** of this Instruction.

- 2.5.28.1. Develop a standard depot maintenance program detailing the roles, responsibilities and methodology for how aircraft, engines and commodities are planned, scheduled, inducted, handled, overhauled, repaired, tested, certified, and delivered by to the customer.
- 2.5.28.2. Develop standardized procedures and responsibilities for depot maintenance production, materiel management, and associated support activities.
- 2.5.29. Ensure the TO libraries are managed IAW TO 00-5-1.
- 2.5.30. Ensure a compliance-structured self-inspection program is established IAW **Chapter 13** of this Instruction.
- 2.5.31. Ensure a nuclear surety program is implemented (if applicable) IAW AFI 91-101, *Air Force Nuclear Weapons Surety Program*, and nuclear munitions are maintained, handled, and accounted for IAW AFI 21-204, *Nuclear Weapons Maintenance Procedures*.
- 2.5.31.1. For units possessing Nuclear Certified Equipment (NCE), ensure personnel are trained in the proper use of nuclear flagwords and mishap and deficiency reporting instructions IAW AFMAN 91-221, *Weapons Safety Investigations and Reports*, and AFI 91-204, *Safety Investigations and Reports*.
- 2.5.32. Deploy Maintenance Recovery Teams (MRTs) and equipment to recover aircraft IAW **Chapter 13** of this Instruction.
- 2.5.33. Ensure an orientation program is developed and conducted for all personnel newly assigned to all unit maintenance activities.
- 2.5.34. Establish procedures and controls for local manufacture.
- 2.5.35. Ensure the oil analysis program (OAP) complies with AFI 21-124, *Oil Analysis Program*.
- 2.5.35. (AFMC) Establish procedures and responsibilities for obtaining, documenting, and monitoring the OAP IAW AFI 21-124.
- 2.5.35.1. (Added-AFMC) A Memorandum of Agreement (MOA) defining notification and documentation procedures will be developed between the host base and ALC OAP laboratories when an ALC provides transient alert support and/or support to aircraft outside the depot.
- 2.5.35.2. (Added-AFMC) All laboratories under the correlations program must collect and report metrics to the AF OAP Manager IAW TO 33-1-37-1, *Joint Oil Analysis Program Manual, Volume I, Introduction, Theory, Benefits, Customer, Sampling Procedures, Programs And Reports*, TO 33-1-37-2, *Joint Oil Analysis Program Manual, Volume II, Spectrometric And Physical Test Laboratory Operating Requirements and Procedures*, TO 33-1-37-3, *Joint Oil Analysis Program Manual, Volume III, Laboratory Analytical Methodology And Equipment Criteria (Aeronautical)*, TO 33-1-37-4, *Joint Oil Analysis Program Manual, Volume IV, Laboratory Analytical Methodology And Equipment Criteria (Non-Aeronautical)*, and AFI 21-124. (T-1).
- 2.5.36. Appoint a Stock Record Account Number (SRAN) engine manager (if a host unit), or a unit engine manager (UEM) (if a tenant unit), to accomplish duties outlined in TO 00-25-254-1, *Comprehensive Engine Management System Engine Configuration, Status, and*

TCTO Reporting Procedures. For additional guidance, reference AFI 20-115, *Propulsion Management for Aerial Vehicles*.

2.5.37. Ensure depot maintenance requirements are considered by airfield management.

2.5.38. Establish a weight and balance (W&B) program IAW **Chapter 13** of this Instruction.

2.5.39. Establish a Functional Check Flight (FCF) Program IAW **Chapter 13** of this Instruction.

2.5.40. Develop an impoundment program and ensure compliance with the procedures IAW **Chapter 9** of this Instruction.

2.5.41. Develop procedures to control tools, equipment, and electronic devices from all wing agencies dispatching to aircraft parking/runway/taxi areas and aircraft maintenance areas IAW **Chapter 1**, **Chapter 10**, and **Chapter 13** of this Instruction.

2.5.42. Establish a waste management program IAW AFI 32-7042, *Waste Management*.

2.5.43. Establish a Precision Measurement Equipment Laboratory (PMEL) Program, and ensure it complies with AFI 21-113, *Air Force Metrology and Calibration (AFMETCAL) Management*, and TO 00-20-14, *Air Force Metrology and Calibration Program*.

2.5.44. Establish emergency action procedures to respond to disaster control and severe weather IAW AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*, AFMAN 10-2504, *Air Force Incident Management Guidance for Major Accidents and Natural Disasters*, and AFI 10-229, *Responding to Severe Weather Events*.

2.5.45. Establish and enforce a flight Precious Metals Recovery Program, as applicable, IAW AFMAN 23-110, *USAF Supply Manual*, and TO 00-25-113, *Conservation and Segregation of Critical Alloy and Precious Metal Bearing Parts and Scrap*.

2.5.46. Ensure personnel are provided the appropriate Personal Protective Equipment (PPE) IAW AFI 91-302, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Standards*.

2.5.47. Ensure configuration control is maintained IAW TO 00-20-2.

2.5.48. Develop procedures to review, approve/disapprove aircraft surge request (acceleration or compression) and prioritize or make required allocation decisions when multiple requests compete for the same depot resources.

2.5.49. Develop a Quality Assurance Program IAW **Chapter 8** of this Instruction.

2.5.50. Develop an Aircrew Egress Systems Maintenance Program IAW **Chapter 12** of this Instruction.

2.5.51. Develop a Housekeeping Program IAW **Chapter 13** of this Instruction.

2.5.52. Develop procedures for depot maintenance support to grounded aircraft, engines, or major end items IAW **Chapter 13** of this Instruction.

2.5.53. Develop a program for management of land mobile radios and personal electronic and communication devices IAW **Chapter 13** of this Instruction.

2.5.54. Develop and publish AF Depot Maintenance Master Plan (DMMP) IAW **Chapter 6** of this Instruction.

2.5.55. Establish an Aircraft Structural Integrity Program (ASIP) IAW **Chapter 13** of this Instruction.

2.6. Lead/Using Commands shall:

2.6.1. Provide facilities and support (e.g., standard tools/equipment and MISs) for organizations performing depot maintenance or providing technical assistance at operating locations.

2.6.2. Provide flight crews to take aircraft to and return aircraft from depot facilities (for any flights unable to be accomplished by AFMC depot aircrews).

2.6.3. Assist AFMC in developing optimum aircraft surge compression specifications.

2.6.4. Support AFMC in accomplishing depot maintenance business, activation, and transition planning.

2.6.5. Support AFMC in assuring the success of the DPEM program.

2.6.5.1. Provide timely identification and submission of depot-level maintenance requirements to the appropriate level of indenture through the DPEM database.

2.6.5.2. Participate in the requirements validation processes. Provide representation and support to the MRWP development activities.

2.6.6. Provide AFMC with using MAJCOM data that is needed for reporting upon request.

2.7. (Added-AFMC) Commander, Air Force Life Cycle Management Center (AFLCMC/CC) shall:

2.7.1. **(Added-AFMC)** Lead horizontal integration among a team consisting of PMs, AFSC Supply Chain Managers, Defense Logistics Agency (DLA), AFSC Maintenance Groups, field units, and contractors for all AF managed sources of repair in order to design critical paths for specific repair actions.

2.7.2. **(Added-AFMC)** Establish a process to determine, document, and communicate information to AFSC regarding aircraft and commodity component condition prior to induction for maintenance, as the first aspect of a critical path. As part of this process, lead Depot Pre-Induction Inspection (PII) activities with field units so PIIs are synchronized with the Home Station Check (HSC), Phase Inspections, or Isochronal Inspections. PIIs can be a physical inspection or a comprehensive pre-induction analysis of records. The determination of who will accomplish the PII, i.e., Depot Field Team (DFT), Contract Field Team (CFT) or Owning Unit, will be negotiated during the Fleet Scheduling Conferences. At that time, the Depot schedules are established with arrival dates of the aircraft at the respective Air Logistic Complexes (ALCs). As part of the conference, the PII will be “scheduled” approximately nine months prior to induction to Programmed Depot Maintenance (PDM). The MAJCOM/unit representative will declare their intent to accomplish the PII organizationally or request DFT/CFT support. If none of these options are feasible, any aircraft not receiving a PII would still be inducted into PDM.

2.7.3. **(Added-AFMC)** Establish a process to ensure parts and non-parts supportability prior to maintenance work package execution, as the second aspect of a critical path.

2.7.4. **(Added-AFMC)** Retain aircraft and commodity component baseline information, i.e., configuration management and structural knowledge, throughout all scheduled and unscheduled maintenance activities.

2.7.5. **(Added-AFMC)** Ensure technical data accuracy IAW TO 00-5-1 and the Logistics Requirements Determination Process (LRDP) Bill of Work (BOW). **(T-1)**.

2.7.6. **(Added-AFMC)** Establish a process to determine, document, and communicate to AFSC information required to report Consolidated Sustainment Activity Group-Maintenance (CSAG-M) Fund 6 data as outlined in DoD 7000.14-R, *Defense Working Capital Funds Activity Group Analysis*, Volume 2B, Chapter 9. **(T-0)**.

2.8. (Added-AFMC) Commander, Air Force Sustainment Center (AFSC/CC) shall:

2.8.1. **(Added-AFMC)** Ensure effective management of the Center's maintenance training program IAW AFI 36-2201 AFMC Supplement, *Air Force Training Program*, AFI 36-2232 AFMC Supplement, *Maintenance Training*, and **Chapter 13** of this instruction. Provide aircraft, personnel, and equipment to support the maintenance training program.

2.8.2. **(Added-AFMC)** Provide facilities and support (e.g., standard tools/equipment and access to Command approved MISs) for organizations performing depot maintenance or providing technical assistance at operating locations.

2.8.3. **(Added-AFMC)** Ensure continuous process improvement activities are conducted in all depot maintenance units; ensure improvement results are appropriately implemented and measured.

2.8.4. **(Added-AFMC)** Ensure a Crash Damaged or Disabled Aircraft Recovery (CDDAR) capability is in place. For specific CDDAR requirements, reference AFI 21-101 and TO 00-80C-1, *Crashed, Damaged, Disabled Aircraft Recovery Manual*. **(T-1)**.

2.8.5. **(Added-AFMC)** Ensure the accomplishment of depot maintenance on NWRM items complies with AFI 20-110 AFMC Supplement, *Nuclear Weapons-Related Materiel Management*.

2.8.6. **(Added-AFMC)** Establish a self-assessment program IAW AFI 90-201 AFMC Supplement, *Air Force Inspection System*, and **Chapter 13** of this instruction.

2.8.7. **(Added-AFMC)** Develop, implement, and maintain standardized processes and procedures to address CFT requirements IAW AFMCI 21-141, *Contract Field Team (CFT) Program*.

2.8.8. **(Added-AFMC)** Establish an execution process for the design teams' (reference section 2.7.1. of this instruction) prioritized sequence to ensure a mechanic-centric focus and sequenced daily standard work for all repair activities.

2.8.9. **(Added-AFMC)** Establish a critical chain process for the scheduled tasks per day to set and accomplish high-touch labor to schedule goals.

2.8.10. **(Added-AFMC)** Maintain maintenance records to current configuration in Reliability and Maintainability Information Systems (REMIS) and maintain up to date technical data throughout all scheduled and unscheduled maintenance activities.

2.8.11. **(Added-AFMC)** Establish a process to integrate tool and equipment management with aircraft, missile, and commodity component supportability actions on non-parts supportability elements IAW TO 00-25-4. **(T-1)**.

2.8.12. **(Added-AFMC)** Develop, implement, and maintain Rivet Minuteman Integrated Life Extension (MILE) policy and implementation procedures.

2.8.13. **(Added-AFMC)** Establish a process to determine, document, and communicate to HQ AFMC/A4 information required to report CSAG-M Fund 6 data as outlined in DoD 7000.14-R, Volume 2B, Chapter 9. **(T-0)**. On an annual basis, report the following:

2.8.13.1. **(Added-AFMC)** Status, current year and future year, of each investment program (i.e., funding category) to include Capital Investment Program (CIP), Restoration/Modernization, Productivity Enhancements, Military Construction (MILCON), and Equipment.

2.8.13.2. **(Added-AFMC)** Contributions to composite sales rate reductions for each budget year, in terms of workload type and man-hours by workload type, as part of the annual depot maintenance sales rate build process.

2.8.13.3. **(Added-AFMC)** Contributions, current year and future year, to aircraft and engine planned and actual input/output production schedules (Requirements Review and Depot Determination [R2D2] and revised).

2.8.14. **(Added-AFMC)** Develop, implement, and maintain standardized processes and procedures to execute the CIP within the Defense Working Capital Fund (DWCF) as outlined in DoD 7000.14-R, Volumes 1-15, hereafter known as the Working Capital Fund (WCF). **(T-0)**.

2.8.15. **(Added-AFMC)** Develop, implement, and maintain standardized processes and procedures to ensure AFSC MILCON projects are properly represented and vetted to/through the AFMC corporate process IAW AFI 32-1021, *Planning and Programming Military Construction (MILCON) Projects*. **(T-1)**.

2.8.16. **(Added-AFMC)** Ensure a Point of Contact (POC) is identified for Environment, Safety, and Occupational Health (ESOH) requirements, compliance, and worker protection issues. For additional guidance, reference AFPD 90-8, AFI 32-7001, *Environmental Management*, and AFI 32-7086. **(T-1)** Additionally, ensure that information and risk impacts on system-related ESOH hazards are conveyed to the appropriate AFLCMC program office.

2.8.17. **(Added-AFMC)** Coordinate depot peculiar and common equipment investment processes with the MAJCOM Command Equipment Management Office (CEMO) during the planning phase for appropriation funded depot activation, WCF expense (greater than \$3,000 to less than \$250,000 unit cost), and WCF capital investments (greater than \$250,000 unit cost). Coordination will be based on the depot planned needs by Support Equipment (SE) IAW AFI 23-101 Expendability, Recoverability, Reparability Category (ERRC) designations S and U for comparison to existing Allowance Standards (AS). Validate all depot SE AS and submit for approval by the MAJCOM Depot Functional Area Manager (FAM) prior to acquisition IAW AFMAN 23-122, *Materiel Management Procedures*. **(T-1)**. If the SE is a common item, coordinate with the MAJCOM Common Support Equipment (CSE) FAM.

Ensure transferred and new SE are depreciated IAW AFI 65-601, Volume 2, *Budget Management For Operations*. (T-1).

2.8.17.1. (Added-AFMC) For legacy weapon systems and commodities sustainment using WCF expense and WCF capital investments, obtain a CEMO response that existing serviceable assets can be transferred on the schedule required for out-year depot production requirements. AFSC can proceed with existing WCF processes if this schedule cannot be met, or if the asset condition proves to be unserviceable. Regardless of the outcome, AFSC shall notify the SE Supply Chain Management Squadron (SCMS) to submit a Table of Allowance Change Request (TACR) in order for the transferred or purchased asset to be captured on the Custodian Authorization/Custody Receipt Listing (CA/CRL).

2.8.17.2. (Added-AFMC) For new weapon systems and commodity depot activation using appropriated funds, obtain a Maintenance Activation Planning Team (MAPT) response that existing serviceable assets will provide capability and capacity on the schedule required for out-year depot production requirements. AFSC shall inform the Depot Maintenance Activation Working Group (DMAWG) to proceed with existing appropriated processes if this schedule cannot be met. AFSC shall notify the SE SCMS to submit a TACR in order for a program office purchased asset to be captured on the CA/CRL.

2.8.17.3. (Added-AFMC) Using the standardized format provided by HQ AFMC/A4M, ensure annual inventory of all AGE maintained by the ALCs is submitted to the HQ AFMC/A4M AGE manager No Later Than (NLT) 15 April.

2.8.18. (Added-AFMC) Develop an annual process to implement DoD 4151.18-H, *Depot Maintenance Capacity and Utilization Measurement Handbook*. (T-0). Report annually the following to HQ AFMC/A4:

2.8.18.1. (Added-AFMC) Capacity and utilization of organic depot maintenance operations by workload type for all shops and areas performing direct labor, including DFTs, and for the previous FY, current FY, and next three projected FYs.

2.8.18.2. (Added-AFMC) 'FUND 30' Exhibit at the conclusion of the annual data call.

2.8.19. (Added-AFMC) Establish a process to ensure personnel assigned the responsibility for measuring depot capacity and utilization, complete Defense Acquisition University (DAU) course, Continuous Learning Logistics (CLL) 026, *Depot Maintenance Capacity Measurement*.

2.8.20. (Added-AFMC) Develop, implement, and maintain standardized processes and procedures to employ SIM techniques. SIM is enabled through IUID, AIT, AIS, and RFID. For additional guidance, reference AFMCI 20-104, *Item Unique Identification*. Ensure an AFSC depot maintenance AIT POC is appointed to oversee the following:

2.8.20.1. (Added-AFMC) A Command standard system for item location tracking.

2.8.20.2. (Added-AFMC) Funding of depot maintenance AIT initiatives.

2.8.20.3. (Added-AFMC) Depot Maintenance AIT Working Group.

Chapter 3

DEPOT MAINTENANCE MANAGEMENT PROCESSES

3.1. Business Planning Process (BPP). AFMC shall use the BPP to:

3.1.1. Determine the appropriate depot maintenance workload groupings and technology areas while attempting to achieve a balance of military necessity, economy, and effectiveness.

3.1.2. Size the AF's depot maintenance capability to accomplish workload requirements. Refer to DoD 4151.18-H, *Depot Maintenance Capacity and Utilization Measurement Handbook*, for additional detail.

3.1.3. Develop strategies for:

3.1.3.1. Establishing depot maintenance interservice support agreements (DMISAs).

3.1.3.2. Accomplishing Core and non-Core workloads. (NOTE: Foreign disclosure release shall comply with AFPD 16-2, *Disclosure of Military Information to Foreign Governments and International Organizations*.)

3.1.3.3. Achieving Core logistics capability (10 USC § 2464), 50/50 stipulation (10 USC § 2466), and PPP objectives (10 USC § 2474). See AFI 63-101.

3.1.4. Align and justify each capital investment to the accomplishment of AF strategic objectives.

3.2. Depot Maintenance Activation. AFMC is responsible for depot maintenance activation planning, which shall include, at a minimum, development of and/or coordination for:

3.2.1. Depot maintenance program as a source of repair to support system operation. For additional detail on depot maintenance activation planning, see AFI 63-101.

3.2.2. Government owned depot requirements estimates, to include cost estimates and schedules.

3.2.3. A process to ensure calibration and repair of support equipment IAW AFI 21-113 and TO 00-20-14.

3.2.4. A process to ensure parts obsolescence is addressed for the maintenance, upgrade, and replacement of depot equipment required for weapon system support.

3.2.5. **(Added-AFMC)** A process to ensure MAJCOM CEMO, FAM, and AFSC coordination.

3.3. Depot Maintenance Workload Transition. Except as may be waived IAW Title 10, USC § 2469, *Contracts to perform workloads previously performed by depot-level activities of the Department of Defense: requirement of competition*, depot maintenance workload that has a value of \$3,000,000 (including cost of labor and materials) or more and is being performed by a DoD depot shall not be changed to performance by a contractor or by another DoD depot unless the change is made using competition among all DoD depot activities or among private and public sector entities. Merit-based selection procedures shall be used for competitions among DoD depot activities. AFMC shall ensure depot maintenance workload transition planning

includes the development and coordination of a depot maintenance transition plan. This plan shall address:

- 3.3.1. A process for coordinating the depot maintenance transition plan with the lead weapon system command.
- 3.3.2. Execution of the transition between the gaining and losing depot maintenance activities.
- 3.3.3. Training of depot maintenance personnel.
- 3.3.4. Facility modifications and military construction requirements.
- 3.3.5. Controls to prevent loss of tools, molds, and other tooling or fabrications during workload transition.
- 3.3.6. Handling, transporting, dispensing, and storing of hazardous materials associated with the transferring workload.
- 3.3.7. Support equipment and supply support.
- 3.3.8. Configuration management and calibration requirements.
- 3.3.9. Documentation (e.g., TOs, engineering requests, drawings, configuration data, and product support plans) associated with the transferring workload.
- 3.3.10. Related test program sets (TPSs) and software, including source code and documentation.

3.4. Capital Investment. The capital investment for new organic depot maintenance capability is a cooperative effort by the weapon systems' lead/using MAJCOMs, HQ AFMC, ALCs and PMs. To centrally account for new system depot activation costs and new or additional capability for existing systems, the AF uses a single capital investment funding appropriation line in conjunction with an acquisition program.

3.5. Depot Manufacturing. Depot manufacturing includes all forms of ALC manufacturing. It may be the transformation of raw materials into finished products or a component for a higher assembly and accomplished by hand or by machinery either on a large or small scale.

3.5.1. Manufacturing Capability and Processes. AFMC shall establish capability and processes for manufacture of items required for immediate needs and for stock when a commercial source is not available or is unacceptable.

3.5.1.1. Document efforts to obtain qualified commercial sources and/or when commercial sources cannot meet cost, performance, or responsiveness. **Note:** This requirement only applies when conducting depot manufacture for a customer within in the AF. Documentation shall include:

3.5.1.1.1. The product support impacts on applicable systems.

3.5.1.1.2. Lack of commercial support items to ascertain changes of status.

3.5.1.1.3. The reverse engineering or redesign of the requirement to produce an adequate data package for re-competition and the minimum quantity required before delivery of assets resulting from competition when the current technical data is not adequate to conduct a competitive procurement.

3.5.1.1.4. Impending material shortages that may endanger life cycle support and capability of a weapon system or equipment due to diminishing manufacturing sources and material shortages (DMSMS).

3.5.1.2. Determine and coordinate depot manufacture to ensure ALCs requisition material quantities sufficient to fill outstanding backorders plus the annual buy quantity for worldwide requirements.

3.5.1.2.1. Document that the quantities of items manufactured are not greater than the total expected peacetime consumption.

3.5.1.3. To the maximum extent, accomplish depot manufacturing with existing equipment, facilities, skills, and capacity.

3.5.1.3.1. New or expanded manufacturing capability shall be justified through a feasibility study to document alternatives before establishing any new manufacturing capability. These studies shall be included with the Capital Purchases Program (CPP), which is funded by the Air Force Working Capital Fund (AFWCF). (NOTE: This applies to repair and modification capabilities as well as manufacturing capabilities.)

3.5.1.3.2. Capital investment purchases shall be documented and justified with an approved workload IAW AFI 38-203, *Commercial Activities Program*.

3.5.1.4. Ensure that a product that does not conform to product requirements/specifications is identified and controlled to prevent its unintended use or delivery.

3.6. Depot Maintenance Strategic Planning. Depot maintenance strategic planning is the process used by the AF to articulate depot maintenance goals and objectives so that funding, requirements, equipment, manpower, infrastructure, recapitalization and business processes align to achieve these goals and objectives. AF depot maintenance strategic planning is an organizationally tiered process that ensures each echelon of AF management is working to achieve the depot maintenance goals and objectives and is synchronized with the Office of the Secretary of Defense (OSD) Depot Maintenance Strategy.

3.6.1. SAF/IE shall:

3.6.1.1. Develop and publish the AF Depot Maintenance Strategy every 5 years.

3.6.1.2. Ensure the AF Depot Maintenance Strategy supports compliance with statutory requirements, aligns with the OSD Depot Maintenance Strategy, AF Strategic Road Map, and the Quadrennial Defense Review (QDR).

3.6.1.3. Communicate AF depot maintenance strategic goals and objectives to the Integrated Life Cycle Management Executive Forum (ILCM-EF), OSD, and Congress.

3.6.1.4. Ensure metrics are identified and established in the AF Depot Maintenance Strategy and periodically assess performance to ensure the AF is achieving the desired strategic goals and objectives.

3.6.2. AF/A4/7 shall:

3.6.2.1. Support SAF/IE in development of the AF Depot Maintenance Strategy.

3.6.2.2. Provide notice to SAF/IE on business process initiatives that affect the AF Depot Maintenance Strategy.

3.6.3. AFMC/CC shall:

3.6.3.1. Develop and publish AF Depot Maintenance Master Plan (DMMP).

3.6.3.1.1. Ensure DMMP aligns with AF Depot Maintenance Strategy.

3.6.3.1.2. Publish a DMMP at least every 5 years.

3.6.3.1.3. Ensure DMMP identifies the initiatives and business processes to achieve the AF Depot Maintenance Strategy goals and objectives.

3.6.3.1.4. Identifies metrics for the initiatives and business processes identified in the DMMP.

3.6.3.2. Support SAF/IE's development of the AF Depot Maintenance Strategy.

3.6.3.3. Facilitate development of ALC implementation plans that support the DMMP.

3.6.3.4. Report metrics as identified in the AF Depot Maintenance Strategy to SAF/IE.

3.6.3.5. **(Added-AFMC)** Establish a process to ensure workload posture planning is coordinated with organizations responsible for field-level maintenance policy and AF-wide common equipment working groups.

3.7. (Added-AFMC) Requirements Review and Depot Determination (R2D2) Process. R2D2 is the annual process to review the organic resources necessary to support the projected funded customer orders as prescribed in annual guidance. R2D2 shall be executed as a two phase process. Responsibilities for the overall process, Phase I, and Phase II are outlined separately below.

3.7.1. **(Added-AFMC)** R2D2 Responsibilities.

3.7.1.1. **(Added-AFMC)** AFMC shall:

3.7.1.1.1. **(Added-AFMC)** Develop, implement, maintain, and standardize the annual R2D2 policy.

3.7.1.1.2. **(Added-AFMC)** Issue annual R2 guidance to AFLCMC, Air Force Nuclear Weapons Center (AFNWC), and AFSC on the products and dates required to support R2D2. In addition, establish a MOA with Air Force Weather Agency (AFWA) and Air Force Space Command (AFSPC) to document required data for R2D2.

3.7.1.1.3. **(Added-AFMC)** Follow the LRDP Handbook to develop the Weapon System Sustainment (WSS) requirements and funded customer orders.

3.7.1.2. **(Added-AFMC)** AFLCMC shall:

3.7.1.2.1. **(Added-AFMC)** Represent the Program Offices as the single POC for WSS funded customer orders in the R2D2 process with the official customer order position as documented in the Centralized Access for Data Exchange (CAFDEX) file.

3.7.1.2.2. **(Added-AFMC)** Act as the single POC for AFLCMC managed Other Funded Customer Orders (OFCO) into the R2D2 process.

- 3.7.1.2.3. **(Added-AFMC)** Co-host, in conjunction with AFSC, an annual R2D2 joint meeting prior to presenting the final organic R2D2 manpower and capability plan to AFMC for final approval.
- 3.7.1.3. **(Added-AFMC)** AFSC shall:
- 3.7.1.3.1. **(Added-AFMC)** Act as the single POC for all Consolidated Sustainment Activity Group-Supply (CSAG-S) generated funded customer orders into the R2D2 process.
 - 3.7.1.3.2. **(Added-AFMC)** Act as the single POC for all AFSC managed OFCO into the R2D2 process.
 - 3.7.1.3.3. **(Added-AFMC)** Co-host, in conjunction with AFLCMC, an annual R2D2 joint meeting prior to presenting the final organic R2D2 manpower and capability plan to AFMC for final approval.
- 3.7.2. **(Added-AFMC) Phase I-Requirements Review (R2).** Phase I consists of funded customer orders determination, consolidation, verification, and collaboration/supportability review and approval. Phase I responsibilities are assigned as follows:
- 3.7.2.1. **(Added-AFMC)** AFMC shall:
- 3.7.2.1.1. **(Added-AFMC)** Issue an OFCO Data Call Senior Officer Communication and Coordination Electronic Resource (SOCCER) to the Center OPRs to initiate the R2 process NLT 30 December.
 - 3.7.2.1.2. **(Added-AFMC)** Host the annual R2 kick-off meeting NLT 31 January.
 - 3.7.2.1.3. **(Added-AFMC)** Initiate the request for the R2 closeout meeting through the Product Support Steering Board (PSSB), identifying applicable offices within the R2 community NLT 1 April.
 - 3.7.2.1.3.1. **(Added-AFMC)** The R2 closeout meeting objective is to review, acknowledge, concur, and document that the funded customer orders being passed to the D2 community are the most accurate to date and shall be used in the D2 process.
 - 3.7.2.1.3.2. **(Added-AFMC)** The key deliverable from the R2 closeout meeting is an approved baseline by the senior PSSB, containing the agreed to consolidated funded customer orders from the authoritative source files (DPEM/WSS, CSAG-S, and OFCO) for use by the D2 community in the development of the Depot Manpower and Capability Plan.
- 3.7.2.2. **(Added-AFMC)** AFLCMC shall:
- 3.7.2.2.1. **(Added-AFMC)** Initiate the annual OFCO Data Call for AFLCMC managed items to their respective Program OPRs.
 - 3.7.2.2.2. **(Added-AFMC)** Review, collaborate, and approve all applicable funded Program Offices' WSS orders and OFCO, and provide them to HQ AFMC/A4 NLT 15 April.
 - 3.7.2.2.3. **(Added-AFMC)** Co-host, in conjunction with AFSC, an annual R2 closeout meeting.

3.7.2.3. **(Added-AFMC)** AFSC shall:

3.7.2.3.1. **(Added-AFMC)** Initiate the annual OFCO Data Call for AFSC managed items to the Complex and 448 Supply Chain Management Wing OPRs.

3.7.2.3.2. **(Added-AFMC)** Review, collaborate, and approve all applicable managed funded CSAG-S items and OFCO (i.e., spares Automated Budget Compilation System [ABCS] budget), and provide to HQ AFMC/A4 NLT 15 April.

3.7.2.3.3. **(Added-AFMC)** Co-host, in conjunction with AFLCMC, an annual R2 closeout meeting.

3.7.3. **(Added-AFMC) Phase II-Depot Determination (D2).** Phase II consists of the annual organic manpower and capability build, review, and approval of the final R2D2 package by AFMC. Phase II responsibilities are assigned as follows:

3.7.3.1. **(Added-AFMC)** AFMC shall:

3.7.3.1.1. **(Added-AFMC)** Develop standardized D2 policy that establishes the schedule, milestones, and baseline products required to accomplish the R2D2 process.

3.7.3.1.2. **(Added-AFMC)** Issue annual D2 guidance to AFSC to facilitate building an organic manpower and capability plan that adheres to Command and AF objectives (e.g., unbilled balance, yield objectives, schedule, and other AF efficiencies).

3.7.3.1.3. **(Added-AFMC)** Ensure the PSSB approved R2 baseline is used by AFSC to develop the organic manpower and capability plan (reference paragraph 3.7.2.1.3.2).

3.7.3.1.4. **(Added-AFMC)** Post the jointly coordinated AFLCMC and AFSC R2D2 manpower and capability plan to the depot maintenance workload and capability management Enterprise Information Management (EIM) NLT 1 June.

3.7.3.1.5. **(Added-AFMC)** Approve the annual organic R2D2 manpower and capability plan NLT 15 June.

3.7.3.2. **(Added-AFMC)** AFLCMC shall:

3.7.3.2.1. **(Added-AFMC)** Coordinate on the final organic R2D2 manpower and capability plan.

3.7.3.2.2. **(Added-AFMC)** Co-host, in conjunction with AFSC, an annual R2D2 joint meeting prior to presenting the final organic R2D2 manpower and capability plan to AFMC.

3.7.3.2.3. **(Added-AFMC)** Coordinate a single package, in conjunction with AFSC, staffed through their respective chains of command, prior to submitting it to AFMC.

3.7.3.3. **(Added-AFMC)** AFSC shall:

3.7.3.3.1. **(Added-AFMC)** Provide all funded customer orders managed by AFSC into a single file to HQ AFMC/A4 for posting to the depot maintenance workload and capability management EIM site NLT 1 May.

3.7.3.3.2. **(Added-AFMC)** Build an organic D2 manpower and capability plan using the PSSB approved R2 as a guide. Provide the plan to HQ AFMC/A4 for posting to the depot maintenance workload and capability management EIM site.

3.7.3.3.3. **(Added-AFMC)** Coordinate on final organic R2D2 manpower and capability plan.

3.7.3.3.4. **(Added-AFMC)** Co-host, in conjunction with AFLCMC, an annual R2D2 joint meeting prior to presenting the final organic R2D2 manpower and capability plan to AFMC.

3.7.3.3.5. **(Added-AFMC)** Provide a roll-up organic manpower and capability plan consisting of inputs from all ALCs to HQ AFMC/A4 NLT 1 June.

3.7.3.3.6. **(Added-AFMC)** Coordinate a single package, in conjunction with AFLCMC, staffed through their respective chains of command prior to submitting it to AFMC.

3.7.4. (Added-AFMC) Changes after the approved R2D2 baseline.

3.7.4.1. **(Added-AFMC)** While the R2D2 process leads to an annual approved workload and capability baseline, unforeseen changes to the approved baseline may be necessary. Therefore, major changes may require actions to re-baseline the overall manpower and capability build.

3.7.4.1.1. **(Added-AFMC)** All changes to WSS requirements and funding must be updated in CAFDEx.

3.7.4.2. **(Added-AFMC)** As a minimum, prior to the year of execution, AFLCMC and AFSC shall monitor and review all approved changes to the requirement on a monthly basis. If updates to the baseline are required, AFLCMC and AFSC shall submit a jointly coordinated revised plan to HQ AFMC/A4.

3.7.4.3. **(Added-AFMC)** Changes received prior to the start of the execution year will be considered the approved Annual Program.

3.7.4.4. **(Added-AFMC)** Significant changes after the start of the execution year require AFSC and AFLCMC approval with HQ AFMC/A4 coordination and will be tracked numerically (e.g., Annual Plan Rev1, Rev2, etc.).

3.8. (Added-AFMC) Depot Maintenance Plant Management. AFSC shall:

3.8.1. **(Added-AFMC)** Provide the management oversight, financial accounting, and asset accountability of ALC activities required to efficiently manage the assigned non-real property facilities and equipment physical infrastructure.

3.8.1.1. **(Added-AFMC)** This process includes the necessary industrial service capability to plan, control, schedule, and manage material for assigned non-real property facility and equipment maintenance, inspection, repair, installation/construction, modifications, relocation, and engineering requirements.

3.8.1.2. **(Added-AFMC)** The Command standard system, Facility and Equipment Maintenance System (FEMS), shall be used to the greatest extent possible to document, schedule, track, and store repair data on maintenance/repair activity on depot

maintenance non-real property facilities and equipment, if available. (**Note:** Type IIA PMELs will utilize PMEL Automated Management System (PAMS) IAW TO 00-20-14. (**T-1**)).

3.8.1.2.1. (**Added-AFMC**) AFSC shall establish guidelines for the use and retention of the following DoD and Command forms when an alternative or option to FEMS or FEMS generated equivalents are required:

3.8.1.2.1.1. (**Added-AFMC**) AFMC Form 304, *Service Order*.

3.8.1.2.1.2. (**Added-AFMC**) AFMC Form 305, *Plant Management Work Order*.

3.8.1.2.1.3. (**Added-AFMC**) AFMC Form 306, *Preventative Maintenance Instructions*.

3.8.1.2.1.4. (**Added-AFMC**) AFMC Form 355, *Operator Maintenance Certification*.

3.8.1.2.1.5. (**Added-AFMC**) AFMC Form 388, *Machine Tool and Equipment Historical Record*.

3.8.1.2.1.6. (**Added-AFMC**) Air Force Technical Order (AFTO) Form 244, *Industrial/Support Equipment Record* or AFTO Form 245, *Industrial/Support Equipment Record (Cont.)*.

3.8.2. (**Added-AFMC**) Develop, implement, and maintain standardized guidance, procedures, and responsibilities for performing the management, control, repair, and maintenance of assigned non-real property facilities and support equipment/industrial plant equipment used in the depot maintenance industrial operations and activities at the ALCs.

3.8.3. (**Added-AFMC**) Define, document, and account for work and responsibilities to be performed by the Maintenance Support Group (MXSG) industrial services activities versus those performed by the base Civil Engineering (CE) activities in accordance with established CE policy.

3.8.4. (**Added-AFMC**) Develop, implement, and maintain a standardized, non-real property facility and equipment inspection and maintenance program based on prescribed maintenance TOs, manufacturer recommendations, commercial manuals, engineering data or specifications utilizing preventative maintenance, predictive maintenance, operator maintenance, corrective maintenance, and on-condition maintenance program strategies where applicable and cost effective.

3.8.5. (**Added-AFMC**) Promote and manage a program to conserve energy and natural resources consumed in the direct performance of depot maintenance activities (e.g., painting, machining, etc.) and by the supporting facility and equipment infrastructure (e.g., heating, ventilation, and air conditioning, central steam, etc.).

3.8.6. (**Added-AFMC**) Advocate and implement Command/Center programs for collecting, reclaiming, recycling, and disposing of industrial products, fluids, chemicals, and scrap materials (except precious metals which will be handled IAW AFI 23-101 (**T-1**)) to reduce the environmental burden on hazardous waste streams to landfills and industrial treatment processing.

3.8.7. **(Added-AFMC)** Develop, implement, and maintain standardized guidance, procedures, and responsibilities for the management, control, and oversight of the physical science laboratory services.

Chapter 4

DEPOT PURCHASED EQUIPMENT MAINTENANCE

4.1. Equipment Maintenance. This section establishes procedures for PPBE of depot level equipment maintenance requirements for AF weapon systems, sub-systems, and components that are funded through the O&M and research, development, test and engineering (RDT&E) appropriations with Air Force Element of Expense (AFEE) designators 540 through 546, 548, and 560. It does not apply to the O&M funded depot-level maintenance requirements that are managed through the AF WCF Consolidated Sustainment Activity Group – Supply Division ((CSAG-Supply), formerly Materiel Support Division (MSD)), contract logistics support (CLS) programs, and depot-level repairs funded as miscellaneous contract services.

4.2. Purpose. The DPEM Program provides a mechanism for AFMC to collectively identify, plan, program, negotiate, and budget for depot-level maintenance services provided by organic AF depots, depots of other Services, and contract repair sources. Repair requirements identified through the DPEM process represent substantial sustainment funding needs that are expressed in the POM and change proposal process used to develop the Future Years Defense Plan (FYDP). The requirements are also used in development of submissions for the President's Budget (PB), Budget Execution Review (BER), Financial Plans, and Program Budget Review (PBR).

4.3. AFMC. AFMC shall serve as the DPEM Executive MAJCOM and be the DPEM process owner. The DPEM process flows into the Centralized Asset Management (CAM) programming and execution process. Therefore, AFMC/CC shall:

4.3.1. Ensure appropriate AFMC organizations support the needs of using MAJCOMs by identifying repair requirements, building the MRWPs, and serving as a buyer of repair services to meet the needs. Provide for reviewing of maintenance requirements, negotiating work specifications, and performing a final validation of the requirement.

4.3.2. Ensure support to PMs/PSMs/PGMs in the requirements identification and validation process for depot maintenance activation.

4.3.2.1. Ensure timely preparation and delivery of essential AFWCF Consolidated Sustainment Activity Group-Maintenance Division ((CSAG-Maintenance), formerly Depot Maintenance Activity Group (DMAG)) rate and factor information used in the DPEM budgeting process.

4.3.2.2. Ensure timely obligation and reporting of DPEM funds execution.

4.3.2.3. Provide for organic source of repair by CSAG-Maintenance operations at the ALCs and the Aerospace Maintenance and Regeneration Group (AMARG).

4.4. DPEM Process Overview: The DPEM process involves a series of activities that identifies repair requirements, pricing of the requirements based on forecasts of CSAG-Maintenance and contractor sales rates, and validating of requirements. The validated requirements provide the foundation for DPEM requirements in the PPBE process. In the PPBE resource allocation process, funding strategies are applied to the requirements to arrive at a budgeted level of funding. The DPEM process has four main activities: requirement determination, budget preparation, program execution, and process control.

4.4.1. Requirements determinations are derived from a variety of data sources and adjusted for historical performance and forecast changes. The Force and Financial Plan (F&FP) provides information on the planned force structure and is the primary driver for repair requirements.

4.4.1.1. Requirements are categorized into nine commodity groups, and most commodity groups are further broken down into additional repair group categories (RGCs) that further define the type of work required. The commodity groups and associated RGCs are depicted below.

Table 4.1. Commodity Groups/Repair Group Categories.

			AF Element of Expense (AFEE) / Investment Code (IC)		
Commodity	Type of Work	RG C	Organic	Contract	Interservice
Aircraft	Programmed	A	54101	56100/56010	54102
	Unprogrammed	B	54101	56100/56010	54102
Missiles	Programmed	C	54201	56200/56020	54202
	Unprogrammed	D	54201	56200/56020	54202
Engines	Programmed	E	54301	56300/56030	54302
	Unprogrammed	F	54301	56300/56030	54302
Other Major Equipment Items (OMEI)	Programmed	G	54401	56400/56040	54402
	Unprogrammed	H	54401	56400/56040	54402
Exchangeables	Programmed	J	54501	56500/56050	54502
	Project Directive	K	54501	56500/56050	54502
	Unprogrammed	L	54501	56500/56050	54502
Area/Base Spt	TO 00-25-107, <i>Maintenance Assistance</i>	M	54601	56600/N/A	N/A
	Host/Tenant/PMEL	N	54601	56600/N/A	N/A
Manufacturing	Stock Fund Mfg	P	54601	56600/N/A	N/A
	Central Procured Mfg	R	54601	56600/N/A	N/A
Software	All	S	54001	56000/56000	54002
Storage	All	1	54801	56800/56080	N/A

4.4.1.2. Requirements identifications are made at the lowest level practicable. The repair requirements are identified to a specific program element (PE), weapon system, commodity, RGC, service provider (organic, contract, interservice), and Air Force Element of Expense/Investment Code (AFEE/IC). The relationship among commodities, RGCs, and AFEE/ICs for the DPDM program is shown above.

4.4.1.2.1. Requirements for Area/Base Support and Manufacturing are determined based on historical data and a forecast of known changes.

- 4.4.1.2.2. Storage requirements are based on aircraft retirements and the maintenance and/or re-preservation needs of stored items, as well as requirements for demilitarization and disposal. For additional detail, reference AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination*, and TO 1-1-686, *Desert Storage, Preservation and Process Manual for Aircraft, Aircraft Engines, and Aircraft Auxiliary Power Unit Engines*.
- 4.4.2. During each year, AFMC shall provide the DPEM community with CSAG-Maintenance and contract depot maintenance (CDM) pricing information essential to both requirements determination and formulation of the DPEM budget. The pricing information will consist of planning factors for POM (or change proposal) development and sales rates and prices for development of financial plans and PB submission.
- 4.4.2.1. The Estimated POM Planning Factor Table provides rate inflation factors to be used in estimating the costs of DPEM requirements beyond the budget year. The table data will be used to escalate costs so requirements are stated in “then year” dollars. For additional information, reference AFI 65-503, *US Air Force Cost and Planning Factors*.
- 4.4.2.2. The sales rates and prices for the AFWCF CSAG-Maintenance are published annually. The rates are set to recover full cost of operation, implement program budget decisions (PBDs), and achieve a zero balance accumulated operating result in the budget year as prescribed in DoD rate stabilization policy (ref. DoD 7000.14-R, *Department of Defense Financial Management Regulations*, Volume 2B, Chapter 9). DPEM Factor Table data is applied to basic repair requirements to determine the budget and out-year requirement in “then year” dollars.
- 4.4.3. The budget preparation process begins with the adjustment of DPEM requirements to reflect anticipated cost changes and ends with the submission of the proper budget exhibits to SAF/FM. Budget preparation guidance is provided through a variety of sources including: the Office of Management and Budget (OMB), the Under Secretary of Defense (Comptroller), SAF/FM, and AF/A4/7. Requirements are organized to support the PB, POM, BER, Financial Plan, and PBR.
- 4.4.3.1. In order to properly scope the size of the DPEM requirements, costs (current or historic) are adjusted for anticipated fluctuations. As described earlier in this section, the DPEM factor table is used to apply price factors to adjust requirements for various budget documents. In the POM submission process, AFMC may also include additional out-year requirements. The adjusted requirements represent the anticipated cost of accomplishing 100% of the maintenance actions if 100% of the forecasted requirements are generated. AFMC shall develop the active AF DPEM requirements and submit to AF/A4/7, Directorate of Resources, to develop the active AF budget submission. Courtesy copies of ANG and AFRC DPEM requirements data are also provided to AF/A4/7, Directorate of Resources, for informational use only.
- 4.4.3.2. The process of “applying funding” represents the budgeting process that seeks to obtain a funding level for a specified amount of the adjusted requirement. The funding level is expressed as a percentage of the total requirement or as a specific dollar amount. The funding levels are provided as a financial plan target for the upcoming execution or financial plan year, or from the Automated Budget Interactive Data Environmental System (ABIDES).

4.4.3.3. Once the DPEM requirements are developed and provided to AF/A4/7, Directorate of Resources, the resulting Depot Maintenance Program Summary (OP30) and Operation and Maintenance Aircraft, Engine and Software Maintenance (OP80) budget exhibits are then submitted to SAF/FM. AF/RE submits OP30 and OP80 budget exhibits directly to OSD Comptroller. ANG submits OP30 and OP80 budget exhibits directly to SAF/FM.

4.4.3.4. AFMC uses the financial plan to identify funded and unfunded requirements for the next FY. It provides financial information to SAF/FM pertaining to prior, current, and Financial Plan years. The Financial Plan portrays information by PE, DoD Element of Expense (DoDEE), and sometimes by AFEE/IC. If the requirement for a particular PE exceeds that PE's funding, then an unfunded requirement is included along with a description of the impacts. The Financial Plan also includes a detailed explanation of significant program changes from one year to the next.

4.4.3.5. A POM is submitted annually by each fundsholder (e.g., CAM, AFRC, NGB, etc.) to outline program requirements for inclusion in the update to the FYDP. As part of the DPEM POM process, AFMC submits POM data, via Resource Allocation Programming Information Decision System (RAPIDS). AFMC then provides AF/A4/7, Directorate of Resources, with a database file for use in extracting POM DPEM Funding Summary data. AF/A4/7, Directorate of Resources, participates in each round of the POM cycle. They represent and defend the AF DPEM program in each mission panel that governs a portion of the program.

4.4.4. In the DPEM program execution, PMs/PGMs serve as the supplier to the MAJCOM by purchasing the services necessary to accomplish the required maintenance actions from either organic AF, interservice, or contract repair sources.

4.4.4.1. The program execution report is the primary means of documenting funding agreements between the PMs/PSMs/PGMs and supplier. The supplier shall generate a program execution report to identify quarterly obligations of funds and an FY closeout report. HQ AFMC shall generate execution reports to identify planning program authority (PA) and initial budget authority (BA).

4.4.4.2. HQ AFMC shall develop the FY planning PA and BA based on the most recently validated requirements and submit the information at the program control number (PCN) level of detail to the supplier prior to the start of the FY. PMs/PSMs/PGMs may give the suppliers flexibility to realign funding among PCNs. Suppliers use planning PA for workload planning for the upcoming year and first quarter negotiations.

4.4.4.3. If a continuing resolution authority (CRA) is in place at the start of an FY, the suppliers ensure that production management follows the guidance accompanying the CRA.

4.4.4.4. HQ AFMC shall develop the initial BA using the latest funding information. The PMs/PGMs then provide the suppliers with an Operating Budget Authority (OBA) document or AF Form(s) 185, *Project Order*. This is the actual authorization for the suppliers to obligate funds. If a PM/PSM/PGM provides funding on an OBA document, the suppliers make the BA available to production management for obligation by loading

it into the Base Level General Accounting Finance System (H069). If PMs/PSMs/PGMs provide Obligational Authority (OA) on AF Form 185, the suppliers ensure the information is consistent with the PA in the Initial BA version of the program execution report.

4.4.4.5. BA and OA can be changed at any time during the FY.

4.4.4.5.1. BA funding change requests provided on an OBA document are made by PMs/PSMs/PGMs and sent to suppliers. These may be made at any time, but tend to follow the PM/PSM/PGM evaluation of a program execution report. After receiving the funding change requests, the supplier determines if it can be satisfied. If so, it is forwarded to program management for implementation, and the H069 is updated. If not, the PM/PSM/PGM is informed of the problem, and a solution is worked out. In order to increase funds tracking accuracy, the PM/PSM/PGM should supplement the OBA document with information that reconciles it to the official accounting system.

4.4.4.5.2. OA change requests to funding provided on AF Form 185 must be accompanied by a request to the supplier to change any funding in the program execution report. When the supplier changes the program execution report, the amended AF Form 185 is reviewed for consistency.

4.4.5. Process control is to ensure the DPEM process keeps up with procedures, process changes, and timely process execution and provides process information to the chain of command and users.

Chapter 5

SAFETY

5.1. General Safety Guidance. Maintenance personnel are exposed to a large variety of hazardous situations, machinery, equipment, and chemicals. Most hazardous situations can be avoided by following procedures, asking for help when needed, and using PPE. Supervisors must be knowledgeable of and implement the Voluntary Protection Program. They must also enforce AFOSHSTDs, TOs, and AFIs applicable to their operations and ensure personnel are educated on safety requirements applicable to the job. Examples of hazardous situations and programs covered in the AFOSHSTDs include, but are not limited to: confined space, fall protection, chemical safety, interior spray painting, and respirator safety.

5.1. (AFMC)Engineering controls, rather, than PPE: shall be used where risks and life cycle costs can be effectively reduced to more acceptable levels.

5.1.1. **(Added-AFMC)** AFSC ESOH Council, chaired by AFSC/SE, shall provide formal feedback to AFSC/EN and AFLCMC program offices, using processes such as hazard reporting or deficiency reporting, on the impacts associated with PPE use.

5.2. Air Force Occupational, Safety, and Health (AFOSH) Guidance. Use AF functional directives and technical data in conjunction with AFOSHSTDs; see **Attachment 1** for AFOSHSTDs applicable to aircraft maintenance activities (this list is not all inclusive). If conflicting guidance exists, the weapon system specific technical data will take precedence.

Chapter 6

DEPOT MAINTENANCE SUPPORT

6.1. Depot Maintenance Production Support. Depot Maintenance strives to apply the right resources at the right time at point-of-use to execute a needs-driven production plan and schedule. AFMC/CC shall develop standardized procedures and responsibilities for depot maintenance production support activities to include workload control, planning, and scheduling functions as well as documentation requirements. Additionally, responsibilities for functional relationships with stakeholders outside of the depot maintenance realm (e.g., PM, Air Force Global Logistics Support Center, Defense Logistics Agency, etc.) must also be defined.

6.1. (AFMC)AFLCMC: Shall develop, implement, and maintain a standardized process to ensure workloads are supportable and funded. AFSC shall develop, implement, and maintain standardized procedures and responsibilities for depot maintenance production support.

6.1.1. (Added-AFMC) Depot Maintenance Support Process. AFSC shall develop, implement, and maintain a process that addresses Pre-Production Support for items prior to induction and Production Support for items that have already been inducted. AFSC shall:

6.1.1.1. (Added-AFMC) Establish a single point of entry and exit for Request for Quote (RFQ) forms and data.

6.1.1.1.1. (Added-AFMC) AFMC Form 501, *Request for Quote/Rough Order of Magnitude*, shall be used to process and control RFQ data flow.

6.1.1.1.2. (Added-AFMC) Alternative RFQ forms for DLA requests for ALC organic manufacturing quotes are authorized.

6.1.1.2. (Added-AFMC) Participate in the Spares Requirement Review Board (SRRB) per the LRDP.

6.1.1.2.1. (Added-AFMC) Accomplish commodity component supportability actions on non-parts supportability elements (e.g., support equipment and special tools).

6.1.1.3. (Added-AFMC) Provide non-parts supportability elements for the Aircraft and Missile Requirements (AMR) as part of the LRDP.

6.1.1.3.1. (Added-AFMC) Accomplish aircraft and missile supportability actions on non-parts supportability elements (e.g., support equipment and special tools).

6.1.1.4. (Added-AFMC) Ensure the prescribed forms listed below are utilized and completed as required:

6.1.1.4.1. (Added-AFMC) AFMC Form 105, *Workload Record*.

6.1.1.4.2. (Added-AFMC) AFMC Form 130, *Production Asset Control Record*.

6.1.1.4.3. (Added-AFMC) AFMC Form 237, *Temporary Labor and Material Plan (G004L)*.

6.1.1.4.4. (Added-AFMC) AFMC Form 240, *Temporary Labor and Material Plan Addendum*.

6.1.1.4.5. **(Added-AFMC)** AFMC Form 502, *Post Dock Review Checklist*.

6.1.1.4.6. **(Added-AFMC)** AFMC Form 503, *AWP Checklist/Worksheet*.

6.1.1.4.7. **(Added-AFMC)** AFMC Form 600D, *Production Order*.

6.1.1.4.8. **(Added-AFMC)** AFMC Form 930, *G004L File Maintenance Transactions*.

6.1.1.5. **(Added-AFMC)** Ensure aircraft/missile status documentation is accomplished IAW TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*. **(T-1)**.

6.1.1.6. **(Added-AFMC)** Ensure aircrews are debriefed to determine the status of the aircraft.

6.1.1.6.1. **(Added-AFMC)** Flying hours and installed engine event history recorder readings for all FCFs shall be updated in REMIS NLT the next duty day after occurrence IAW AFI 21-103. **(T-1)**.

6.1.1.7. **(Added-AFMC)** Establish a process which outlines the pickup and delivery of pre-positioned parts to the kit staging area for a specific repair requirement.

6.1.1.7.1. **(Added-AFMC)** The pre-positioned part and its schedule are determined during the supportability process and are linked to the critical path design for a specific repair requirement.

6.1.2. **(Added-AFMC) Depot Maintenance Job Routing.** AFLCMC shall:

6.1.2.1. **(Added-AFMC)** Ensure decisions to Job Route/Non-Job Route are made by the Program Office (PO)/PM working with the ALCs and DLA.

6.1.2.2. **(Added-AFMC)** Ensure all conversions from job routed to non-job routed begin budget lead-time away for anticipated cost changes to the CSAG-M/CSAG-S.

6.1.2.2.1. **(Added-AFMC)** If circumstances still require job routing, approval must be obtained from the Program Office. Such action must be reported to supply in order for supply to record accurately the true requirements for stockage. For additional NWRM job routing guidance, reference AFI 20-110 AFMC Supplement.

6.1.3. **(Added-AFMC) Depot Maintenance Work Measurement.** HQ AFMC/A4 shall serve as the Command representative on depot maintenance work measurement issues or matters requiring coordination with other agencies and services, or the DoD as required. The prescribing regulation for labor classification is DoD 7000.14-R, Volume 11B, Chapter 13. Labor standards must accurately reflect the labor required to do a particular job. The definition of a labor standard is the time it should take a trained worker or group of trained workers, working at a normal pace, to produce a prescribed unit of work that conforms to technical requirements and standards according to a specified method under specific working conditions. Labor standards are used to establish production schedules and they have a direct bearing on the cost and length of the repair cycle. Labor standards, operation descriptions, and associated times provide data for analysis that enable the repair process owners to identify prime areas for process improvement. Labor standards are used in scheduling, budgeting, sales rates, manpower requirements, and shop capacity. Work measurement is the means utilized to establish labor standards.

6.1.3.1. **(Added-AFMC)** AFSC shall:

6.1.3.1.1. **(Added-AFMC)** Appoint a POC to administer depot maintenance work measurement requirements and direct labor standards reviews.

6.1.3.1.2. **(Added-AFMC)** Ensure procedures are developed, implemented, and maintained to address labor standards accuracy.

6.1.3.1.3. **(Added-AFMC)** Verify and ensure support documentation exists in all labor standards files.

6.1.3.1.4. **(Added-AFMC)** Develop projected labor efficiency factors for each Resource Control Center (RCC) on an annual basis.

6.1.3.1.5. **(Added-AFMC)** Conduct reviews of labor standards.

6.1.3.1.5.1. **(Added-AFMC)** As a minimum, ensure labor standard reviews examine all the following elements:

6.1.3.1.5.1.1. **(Added-AFMC)** Technical Order (TO).

6.1.3.1.5.1.2. **(Added-AFMC)** Work Control Document (WCD).

6.1.3.1.5.1.3. **(Added-AFMC)** Labor Standard Hours.

6.1.3.1.5.1.4. **(Added-AFMC)** Occurrence Factor.

6.1.3.1.5.1.5. **(Added-AFMC)** Personal, Fatigue, and Delay (PF&D).

6.1.3.1.5.1.6. **(Added-AFMC)** Shop Flow Days (Commodities).

6.1.3.1.6. **(Added-AFMC)** Ensure all personnel directly involved in establishing or reviewing labor standards are trained in methods and standards concepts and techniques. All work measurement practitioners must successfully complete appropriate training. Minimum required training includes:

6.1.3.1.6.1. **(Added-AFMC)** DoD Work Methods and Standards (DWMS) certification.

6.1.3.1.6.1.1. **(Added-AFMC)** Persons using work measurement techniques requiring performance rating (or leveling) must be capable of rating within plus or minus 10 percent of standardized ratings as set forth in Society for Advancement of Management films or other acceptable training methods directed by AFSC, United States Air Force (USAF), or DoD. The initial performance rating training and certification is accomplished in the DWMS course. Annual refresher training and proficiency certification are required, and shall be documented and maintained in the Command approved data system.

6.1.3.1.6.2. **(Added-AFMC)** All Command approved MIS courses related to accomplishing work measurement and labor standards.

6.1.3.1.6.3. **(Added-AFMC)** MTM-1 or equivalent is required for all personnel who develop standard data. **NOTE:** Duplicative material or requirements may be waived for a person having an Associate's Degree in Industrial Engineering Technology or a Bachelor's Degree in Industrial Engineering.

6.1.3.1.7. (Added-AFMC) Ensure maintenance labor is properly classified IAW DoD 7000.14-R, Volume 11B, Chapter 13 and periodically reviewed to ensure tasks and positions are properly classified. (T-0)

6.1.3.1.7.1. (Added-AFMC) **Direct Labor.** Direct labor is work that can be identified, without undue cost or difficulty, to a single, specific job order. Direct labor generally includes the hands-on maintenance, repair, overhaul, test, and related direct production effort that follow the established sequence and content of work necessary to accomplish the billable job. Direct labor does not include the support work identified as either indirect or general and administrative in nature. Direct labor:

6.1.3.1.7.1.1. (Added-AFMC) Must be identifiable to a specific Job Order Number (JON).

6.1.3.1.7.1.2. (Added-AFMC) Can be broken down into operations and sub-operations, and the amount of labor required can be measured directly.

6.1.3.1.7.1.3. (Added-AFMC) Furthers the value of the product or service through enhancement of the form, fit, and/or function to meet the desired specifications of the customer.

6.1.3.1.7.1.4. (Added-AFMC) Is supported by official work requests and authorized by prescribed work authorization documents indicating the specific nature of the work to be done. Direct labor must be assigned to a direct labor RCC, or direct labor time exception to a direct labor RCC.

6.1.3.1.7.1.5. (Added-AFMC) Will be broken down into tasks/operations and labor standards determined for each task/operation. Direct labor tasks will be documented on a WCD. The time expended on direct labor tasks/operations will be documented in the appropriate time and attendance, and production systems.

6.1.3.1.7.2. (Added-AFMC) **Indirect Labor.** There are two categories of indirect labor: Production Overhead (POH) and General & Administrative (G&A).

6.1.3.1.7.2.1. (Added-AFMC) **Production Overhead (POH).** POH labor is all other labor expended in maintenance that does not meet the criteria for direct labor. This includes all labor expended at the RCC level in the maintenance production functions that does not meet the criteria for direct labor, i.e., not driven by volume. This includes tasks or functions that support direct labor or which are inherent to having a direct labor capability. POH labor can generally be subdivided into two categories: indirect time in a production RCC and shop support overhead.

6.1.3.1.7.2.1.1. (Added-AFMC) Indirect labor includes all General Schedule (GS) supervision, clerical, and administrative labor. This will also include annual leave, sick leave, and other paid leave. Functions such as attending classroom training or meetings are considered indirect labor when they involve people who are assigned to a direct RCC. The cost of this

labor is apportioned over all products in the RCC rather than charged to one or more specific products.

6.1.3.1.7.2.1.2. **(Added-AFMC)** Shop support overhead is labor expended by personnel performing functions above RCC level in support of maintenance, and by personnel performing the primary mission of a staff or overhead function. It is performed by people who are not assigned to a production RCC.

6.1.3.1.7.2.2. **(Added-AFMC) General & Administrative (G&A).** G&A is labor expended by personnel performing functions external to maintenance.

6.1.3.1.7.2.2.1. **(Added-AFMC)** G&A is all labor not meeting the qualifications for either direct or production overhead labor. This includes supervision, clerical, and training. There is a valid requirement for POH and G&A, which must be recognized separately and should not be hidden through improper conversion or improper classification.

6.1.3.1.7.2.2.2. **(Added-AFMC)** The duty code assignment of personnel and subsequent man-hour exceptions should be based on recognition of the proper level at which the direct product labor costs are applied.

6.1.3.1.7.3. **(Added-AFMC) Relationship to Actual Labor Reporting.** The reporting of actual labor should reflect the classification of labor for the task each employee is assigned to perform.

6.1.3.1.8. **(Added-AFMC)** Develop and maintain an active labor standard file that contains supporting and backup data for each labor standard.

6.1.3.1.9. **(Added-AFMC)** Ensure indirect labor standards are established to account for labor expended by and for a RCC that is not accounted for by direct labor standards.

6.1.3.1.10. **(Added-AFMC)** Utilize labor efficiency, defined as earned hours divided by actual hours, as a management tool for pinpointing potential workload or organizational problems.

6.1.3.1.11. **(Added-AFMC)** Provide a standard, repeatable process to define how ALC personnel plan for and compute POH manpower requirements.

6.1.3.1.12. **(Added-AFMC)** Establish POH manpower goals and metrics, such as the Percent Production Overhead, to monitor POH manpower requirements and costs. The goals and metrics should include specific criteria requiring ALCs to evaluate changes and trends in POH manpower requirements and costs.

6.1.3.1.13. **(Added-AFMC)** Establish documentation requirements to justify agreed upon increases or decreases in POH manpower levels.

6.1.4. **(Added-AFMC) Variance Metrics and Root Cause Analysis.** AFSC shall identify planned vs. actual performance towards executing aircraft and commodity component requirements. It shall then determine the root cause if not meeting the plan and provide feedback to the AFLCMC to improve and modify the critical path design process IAW section 2.7. of this instruction.

6.1.5. (Added-AFMC) Time and Attendance (TAA) Standards.

6.1.5.1. (Added-AFMC) AFSC shall develop, implement, and maintain a standardized TAA system that will assure the following standards are achieved. For additional guidance, reference AFMCI 65-101, *Depot Maintenance Accounting and Production System-Financial Policy and Procedures for Organic Depot Maintenance*.

6.1.5.1.1. (Added-AFMC) Collect and record hours worked into the TAA system using accurate and timely timekeeping practices.

6.1.5.1.2. (Added-AFMC) Collect and record leave hours (by type), credit hours, and compensatory time used 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.

6.2. Depot Maintenance Supply Support and Materiel Control. Sufficient maintenance supply support is critical to successful depot maintenance production. The repair environment applies agile combat support logistics concepts such as: (1) identified value in customer support (parts when needed; on-time delivery), (2) a streamlined process model, (3) uninterrupted continuous flow-through process, (4) synchronized delivery of material from internal and external suppliers, (5) supportability reviews, electronic commerce, and technology enablers, and (6) planning, engineering, contracting, and supply support well forward to support the depot maintenance effort. Additional detail regarding materiel management is provided in AFMAN 23-110. For additional detail on cannibalization of parts, reference **Chapter 13** of this Instruction. AFMC/CC shall develop additional process implementation guidance for materiel management and support (to include Bills of Materiel). For additional detail, reference AFMCI 21-130, *Depot Maintenance Materiel Control*.

6.2.1. (Added-AFMC) AFSC shall:

6.2.1.1. (Added-AFMC) Develop, implement, and maintain standardized procedures for the management and control of depot maintenance material.

6.2.1.2. (Added-AFMC) Develop additional process implementation guidance for materiel management and support to include Bills of Material (BOMs).

6.2.1.3. (Added-AFMC) Develop an audit program to address BOM accuracy.

6.2.1.4. (Added-AFMC) Ensure all personnel adhere to principles of supply and financial disciplines IAW AFI 23-101, AFI 20-110, and AFMCI 65-101. (T-1). At minimum, utilize the following material related forms:

6.2.1.4.1. (Added-AFMC) AFMC Form 95, *Issue Request*.

6.2.1.4.2. (Added-AFMC) AFMC Form 100, *Floating Stock/Spares Requirement and Justification*.

6.2.1.4.3. (Added-AFMC) AFMC Form 101, *Verification of Content Removal Tag*.

6.2.1.4.4. (Added-AFMC) AFMC Form 102, *Verification of Content Removal Label*.

6.2.1.5. **(Added-AFMC)** Ensure all production items in delay status, routed items, and loaned equipment are segregated, and protected from pilferage and damage. All material in storage will be protected as required according to AFI 23-101, AFJMAN 23-210, *Joint Service Manual (JSM) for Storage and Materials Handling*, AFI 23-111, *Management of Government Property in Possession of the Air Force*, and AFI 20-110. **(T-1)**.

6.2.1.6. **(Added-AFMC)** Establish guidance for approval of inventory adjustments concerning depot maintenance owned material.

6.2.1.7. **(Added-AFMC)** Ensure maintenance personnel properly control maintenance initiated component collections for recovery, repair, and overhaul.

6.2.1.7.1. **(Added-AFMC)** Maintenance production personnel shall:

6.2.1.7.1.1. **(Added-AFMC)** Review AFMC Form 206, *Temporary Work Request*, for completeness, (e.g., job quantities, storage retention and inventory guidelines, etc.). Incomplete AFMC Form 206s shall be rejected.

6.2.1.7.1.2. **(Added-AFMC)** Ensure component serviceability. All removed parts shall be identified and condition tagged. Ensure Drain and Purge procedures are accomplished IAW the applicable TO and/or AFI 24-203, *Preparation and Movement of Air Force Cargo*, for aircraft/vehicle/AGE fuel equipment prior to turn-in. **(T-1)**.

6.2.1.7.1.3. **(Added-AFMC)** Collaborate with the appropriate item manager to establish maximum allowable storage quantities.

6.2.1.7.1.4. **(Added-AFMC)** Conduct and document periodic inventory retention reviews/audits.

6.2.1.8. **(Added-AFMC)** Ensure ALCs track and account for Due-In From Maintenance (DIFM)/Due-Out To Maintenance (DOTM) items, sign the quarterly DIFM reconciliation and approve a justification for each DIFM over 60 days old, communicate with DLA to resolve transaction/accountability issues, perform and maintain documentation of reconciliations IAW Air Force Records Information Management System (AFRIMS), and complete Report of Survey IAW AFMAN 23-220, *Reports of Survey for Air Force Property*. **(T-1)**.

6.2.2. **(Added-AFMC) Kitting.** AFSC shall establish a process to assemble aircraft specific or commodity component specific disparate parts and non-parts into one unit to be delivered to maintenance as part of the critical path for that repair requirement. Kit content shall be developed and sustained using a List of Material that is fully integrated with the corresponding LRDP BOW.

6.2.2.1. **(Added-AFMC)** The kitting process shall include building, designing, delivery, retrieval, and replenishment of parts and non-parts from the kit staging area to the mechanic.

Chapter 7

WORK CONTROL DOCUMENTS AND TECHNICAL DATA

7.1. Work Control Documents (WCD). Timely and complete work planning is essential to accomplishing the depot production process. Work 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. AFMC/CC shall promulgate procedures for developing and processing WCDs when implementing technical data requirements.

7.1.1. 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 instruction document summarizing sequenced steps and the TO references for processing the item. WCDs are developed by authorized planner/industrial engineering technicians in accordance with approved technical data. The WCD is the record documenting that the task was performed by certified technicians IAW authorized technical data. It must be auditable to the technician's training record. All critical tasks must be listed and certified as a separate line item.

7.1.1.1. **(Added-AFMC)** AFSC shall:

7.1.1.1.1. **(Added-AFMC)** Ensure WCDs are developed for all programmed and temporary workloads. The WCD is an official and authorized document containing technical data references. No work will be performed without an approved WCD. The WCD is the official record for work including control, identification, inspection, and routing of items.

7.1.1.1.1.1. **(Added-AFMC)** WCDs shall be auditable and meet the requirements of the LRDP, TO 00-5-1, TO 00-20-1, and TO 00-25-4.

7.1.1.1.1.2. **(Added-AFMC)** WCDs shall be reviewed and correlated to Production Acceptance Certification (PAC) tasks.

7.1.1.1.1.2.1. **(Added-AFMC)** WCDs shall be reviewed and updated to reflect compliance with the standard labor classification criteria. For additional detail, reference section 6.1.3.1.7. of this instruction.

7.1.1.1.2. **(Added-AFMC)** Ensure each ALC designates WCD focal points who will serve as the OPR for WCD program directives and will assist all production groups with program requirements.

7.1.1.1.3. **(Added-AFMC)** Ensure all maintenance performed by AFSC personnel is reviewed to identify critical maintenance tasks/operations and verify inspection codes for accuracy.

7.1.1.1.3.1. **(Added-AFMC)** 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). If there are PPT disagreements on critical tasks, the Cognizant Engineering Authority (CEA) will be contacted and the response documented.

7.1.1.1.4. **(Added-AFMC)** Ensure standardized methods are documented to denote status on WCDs and to certify that work has been accomplished and completed as required by specified technical data.

7.1.1.1.5. **(Added-AFMC)** Develop, implement, and maintain standardized procedures to manage and control the methods used to certify/stamp WCDs.

7.1.1.1.6. **(Added-AFMC)** Ensure the prescribed forms listed below are utilized and completed as required:

7.1.1.1.6.1. **(Added-AFMC)** AFMC Form 127, *Routed Order*.

7.1.1.1.6.2. **(Added-AFMC)** AFMC Form 137, *Routed Order (Proj Dir)*.

7.1.1.1.6.3. **(Added-AFMC)** AFMC Form 173, *MDS/Project Operation Assignment*.

7.1.1.1.6.4. **(Added-AFMC)** AFMC Form 500, *Work Control Document Production Planning Team Checklist*.

7.1.1.1.6.5. **(Added-AFMC)** AFMC Form 561, *Process Order*.

7.1.1.1.6.6. **(Added-AFMC)** AFMC Form 957, *Work Control Document (WCD) Change Request*.

7.1.1.1.6.7. **(Added-AFMC)** AFMC Form 959, *Work Control Document*.

7.1.2. TO Changes and Authorized Deviations. Technical data used in depot maintenance must be complete, accurate, effective, and efficient. It is the responsibility of maintenance personnel at all levels to ensure deficiencies are reported in a timely manner and improvements are made when needed. When work cannot be performed using the TO as written, an authorized deviation must be processed and approved.

7.1.2.1. **(Added-AFMC)** AFSC shall 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.). These policies/procedures shall be approved by the AFSC/CC.

7.1.2.1.1. **(Added-AFMC)** Use of written CEA technical data is authorized when there is no formalized technical data available.

7.1.2.1.2. **(Added-AFMC)** 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.

7.2. Standard Depot Maintenance Program. AFMC/CC shall develop a standard depot maintenance program detailing the roles, responsibilities and processes for how aircraft and commodities are planned, scheduled, inducted, handled, overhauled, repaired, tested, certified, and delivered back to the AF and other DoD customers.

7.2. (AFMC)AFSC shall: Develop, implement, and maintain depot maintenance support processes.

Chapter 8

QUALITY ASSURANCE (QA)

8.1. General. Maintenance quality and equipment reliability is the responsibility of all maintenance personnel. The combined efforts of QA personnel, maintenance leaders, and technicians are necessary to ensure high quality maintenance production and equipment reliability. The QA staff evaluates the quality of maintenance accomplished and performs necessary functions to manage the MSEP. The MSEP provides an objective sampling of the proficiency of maintenance personnel and the compliance of MSEP focus areas, programs, and processes. QA personnel are not an extension of the work force and shall not be tasked to perform production. QA serves as the primary advisory agency in the maintenance organization, assisting maintenance supervision at all levels to resolve quality problems. The evaluation and analysis of deficiencies and problem areas are key functions of QA that highlight and identify underlying causes of poor quality in the maintenance production effort. Aircraft, major end items, and equipment condition as well as personnel proficiency are validated through the MSEP and shall be recorded using a QA database.

8.1. (AFMC)AFSC shall: Further define and implement this chapter to standardize QA functions across the ALCs.

8.2. Maintenance Standardization and Evaluation Program (MSEP). The MSEP is the maintenance component of the Logistics Compliance Assessment Program (LCAP) and is designed to provide unit maintenance managers with a method of evaluating compliance with AF, Lead Command, and local maintenance directives and policies. LCAP (as detailed in AFI 20-111, *Logistics Compliance Assessment Program (LCAP)*) is the AF evaluation program that establishes the Lead Command Logistics Compliance Assessment Team (LCAT).

8.2.1. AFMC is responsible for developing an MSEP and conducting local inspections to ensure their programs, processes, maintenance technician proficiency, equipment condition, and other focus areas are in compliance with AF and local directives. AFMC shall ensure the MSEP mirrors the LCAP requirements as defined in AFI 20-111.

8.2.1.1. **(Added-AFMC)** AFSC will implement the MSEP using the following minimum requirements:

8.2.1.1.1. **(Added-AFMC)** Identify the type and minimum number of Personnel Evaluations (PEs), Quality Verification Inspections (QVIs), Routine Inspections (RIs), and Special Inspections (SIs) to be conducted monthly or delegate the requirement to be included in the Complex Quality Assurance Plan (QAP)/Quality Assurance Surveillance Plan (QASP).

8.2.1.1.2. **(Added-AFMC)** Define the process for control, routing, and follow-up of the AFMC Form 77, *Request for Quality Assistance (RQA)*.

8.2.1.1.3. **(Added-AFMC)** Define the corrective action and preventive action process to be accomplished by production units. Care should be taken to determine root causes of deficiencies rather than simply treating symptoms. At a minimum, the process will include:

8.2.1.1.3.1. **(Added-AFMC)** Analysis of the defects and actions taken.

8.2.1.1.3.2. **(Added-AFMC)** Methods used by QA offices to communicate and cross-feed information to other Groups, Complexes, Centers, and MAJCOMs.

8.2.1.1.3.3. **(Added-AFMC)** Methods used for QA to follow-up on corrective action taken, preventive action, or process changes made to prevent recurrence or new occurrences of similar non-conformances.

8.2.1.1.4. **(Added-AFMC)** Define requirements for development of QAPs and QASPs.

8.2.1.1.5. **(Added-AFMC)** Establish standards for Quality Assessment Results (QAR) ratings.

8.2.1.1.6. **(Added-AFMC)** Define process and database for documenting deficiencies, corrective/preventive action, and follow-up action data.

8.2.1.1.7. **(Added-AFMC)** Define requirements to analyze quality deficiency and acceptance inspection reports, and recommend appropriate corrective and preventive action.

8.2.1.1.8. **(Added-AFMC)** Define procedures for quality escapes.

8.2.1.2. **(Added-AFMC) Quality Assurance Plan (QAP).** AFSC will develop, implement, and maintain standardized processes and procedures for the QAP. The QAP identifies specific detailed quality processes and procedures relative to the depot maintenance activity. QAPs will be reviewed at least annually to ensure currency of existing or new policy requirements to ensure quality program objectives are being met. All programmed production workloads will be addressed in the QAP. At a minimum, the QAP will address the following:

8.2.1.2.1. **(Added-AFMC)** Specific QA processes and procedures.

8.2.1.2.2. **(Added-AFMC)** Data collected, type of analysis done, reports to be accomplished, and review level.

8.2.1.2.3. **(Added-AFMC)** Subsequent PE interval methodology. For additional detail, reference paragraph 8.2.1.4.1.1. of this instruction.

8.2.1.3. **(Added-AFMC) Quality Assurance Surveillance Plan (QASP).** The QASP identifies the functions and associated actions performed by a particular group to ensure that requirements are performed in accordance with specified standards and that an appropriate level of quality assurance activity is in place and operational. At a minimum, the QASP will contain:

8.2.1.3.1. **(Added-AFMC) Assessment Type.** Task specific item, procedure or process, frequency, and minimum number of assessments to be performed on a recurring basis.

8.2.1.3.2. **(Added-AFMC) Assessment Areas.** Major workloads will be broken down into assessment areas and documented in the QAP and QASP. Assessment areas are segments or portions of a workload, system, component, process, procedure, or subject matter that is investigated, inspected, evaluated, or audited.

8.2.1.3.3. **(Added-AFMC) Minimum Number of Assessments.** The methodology (e.g., ANSI/ASQ Z1.4-2008, *Sampling Procedures and Tables for Inspection by Attributes*) or rationale used to determine assessment type and minimum number of assessments to be performed will be documented in the QAP or QASP.

8.2.1.3.4. **(Added-AFMC) Acceptable Quality Level (AQL)/Standard.** A standard is the acceptable quality level (number of minor defects) that can be considered satisfactory as a process average or conforming to established criteria in order to receive a “pass” rating.

8.2.1.3.4.1. **(Added-AFMC)** The AQL/standard is derived from QA performance based data. AFSC will develop procedures for determining minimum AQL/standard levels.

8.2.1.4. **(Added-AFMC) MSEP Quality Assessments.** MSEP assessment types are listed below:

8.2.1.4.1. **(Added-AFMC) Personnel Evaluation (PE).** A PE is an “over-the-shoulder” evaluation of a PAC certified mechanic/technician performing a maintenance task. PEs objectively evaluate/assess a technician’s or team of technicians’ job proficiency and compliance with technical data requirements (e.g., tools, equipment, WCDs, safety, technical data, material, FOD, training, etc.) during the performance of a specific maintenance task without assistance. PEs will be rated pass or fail and given a QAR rating.

8.2.1.4.1.1. **(Added-AFMC)** PE interval methodology will be identified in the QAP based on scheduled process reviews or data driven analysis not to exceed two years.

8.2.1.4.1.2. **(Added-AFMC)** Individuals or team members shall be decertified (on the evaluated task) by their supervisor for a failed PE rating.

8.2.1.4.2. **(Added-AFMC) Quality Verification Inspection (QVI).** A QVI is an assessment/evaluation of a maintenance procedure, process, product, or portion thereof, while it is being accomplished or after it has been completed and the task/WCD is certified. While performing a QVI, a PE of a technician or team of technicians may be evaluated/assessed at the same time.

8.2.1.4.3. **(Added-AFMC) Routine Inspection (RI).** RIs are assessments of common depot production maintenance programs and processes that require continuous evaluation. They may be evaluated independently or may be performed in conjunction with any other type of assessment (e.g., PE, QVI, etc.). The AFMC QA EIM site will contain checklists that identify the mandatory routine inspection items. Mandatory questions, when applicable to the organization, must be evaluated for the assessment to qualify as a RI. Observed deficiencies beyond the RI checklist questions shall be recorded in the Command approved QA database under the category of SI. The following are the AFMC RI areas which must be included in the QASP (if applicable):

8.2.1.4.3.1. **(Added-AFMC)** Material Control.

8.2.1.4.3.2. **(Added-AFMC)** Foreign Object (FO).

- 8.2.1.4.3.3. **(Added-AFMC)** Tool Control.
- 8.2.1.4.3.4. **(Added-AFMC)** WCDs.
- 8.2.1.4.3.5. **(Added-AFMC)** PAC/SSQ Training.
- 8.2.1.4.3.6. **(Added-AFMC)** Equipment.
- 8.2.1.4.3.7. **(Added-AFMC)** Safety (Flight Line/Industrial).
- 8.2.1.4.3.8. **(Added-AFMC)** Technical Data (AFMC Form 202 or Process Orders).
- 8.2.1.4.3.9. **(Added-AFMC)** Engine Management.
- 8.2.1.4.3.10. **(Added-AFMC)** Aircraft Forms.
- 8.2.1.4.3.11. **(Added-AFMC)** Technical Orders.
- 8.2.1.4.3.12. **(Added-AFMC)** Munition Processes.

8.2.1.4.4. (Added-AFMC) Quality Verification Inspection Q-Stamp (QVIQ). The QVIQ is an AFMC, AFSC, or ALC developed list of required inspections to be accomplished by a qualified Quality Assurance Specialist (QAS). QVIQ requirements must address those tasks affecting safety of flight, having historically high failure rates, and/or based on internal and external trend analysis. The AFSC, in conjunction with the ALCs, shall develop, implement, and maintain a standardized process for QVIQ inspections to include the method of accomplishment, measurement, and MSEP reporting.

8.2.1.4.4.1. **(Added-AFMC)** A Q-Stamp will be required for completion of each QVIQ task/operation.

8.2.1.4.4.2. **(Added-AFMC)** AFMC, AFSC, or the ALC may further identify minimum QVIQs for each MDS/Type Model Series (TMS) to resolve or prevent quality escapes.

8.2.1.4.5. (Added-AFMC) Management Inspection (MI). MIs cover a broad category and should be performed to follow-up on trends, conduct investigations, or conduct research to get to the root cause of problems. Any level of management may request MIs.

8.2.1.4.6. (Added-AFMC) Isolated Violation (IV). This category represents observed events or conditions with safety implications, or technical violations not related to an inspection or evaluation, which may be considered unsafe, not in accordance with established procedures, or in the case of equipment, unfit to operate. IVs will be rated as a QAR-3 and documented as one of the following:

8.2.1.4.6.1. **(Added-AFMC) Detected Safety Violation (DSV).** A DSV is an unsafe act by an individual. The inspector will stop the unsafe act immediately. Do not document a separate DSV on an individual undergoing a personnel evaluation since the unsafe act automatically results in a "Fail" rating on the PE. Use the word "Safety" when a safety violation is committed during a PE.

8.2.1.4.6.2. **(Added-AFMC) Technical Data Violation (TDV).** A TDV is an

observation of any person performing maintenance without the proper technical data or not following available technical data. The technician must have knowledge of all general directives associated with the job prior to performing the task. However, those directives need not be present at the job site. Do not document a separate TDV on an individual undergoing a PE since failure to use approved technical data automatically results in a "Fail" rating.

8.2.1.4.6.3. **(Added-AFMC) Unsatisfactory Condition Report (UCR).** An unsatisfactory condition is defined as an event/discrepancy that requires immediate supervisory intervention to ensure safety or process/product fit, form, or function reliability, and when unable to determine individual responsible. Unsatisfactory conditions are deemed major and will be documented as a UCR. A condition of a minor nature shall be documented against the applicable checklist or its regulatory guidance.

8.2.1.4.7. **(Added-AFMC) Process Review.** A process review is an AFMCI 63-501, *AFMC Quality Assurance*, directed review of a process from cradle to grave, or a portion of the process. This may include a review of planning, technical data, WCDs, equipment, tools, training, material, and other key areas that affect the process. Procedures for process reviews shall be developed by AFSC.

8.2.1.5. **(Added-AFMC) Quality Assessment Results (QAR) Rating.** A QAR rating is a value reflecting the results of quality assessments. These ratings shall be input into the Command approved QA database. Only PEs will be rated pass or fail in addition to the QAR. Deficiencies shall be classified as major or minor findings. A minor finding is defined as an unsatisfactory condition that requires repair or correction, but does not endanger personnel, affect safety of flight, jeopardize equipment reliability, or warrant discontinuing a process or equipment operation. A major finding is defined as a condition that would endanger personnel, jeopardize equipment reliability, or warrant discontinuing process or equipment operation.

8.2.1.5.1. **(Added-AFMC) QAR-1.** This rating indicates the evaluated process/product met the established standard. This rating is considered a pass rating.

8.2.1.5.2. **(Added-AFMC) QAR-3.** This rating indicates an evaluated process/product did not meet the established standard because one or more major findings were detected or exceeded the AQL. This rating is considered a fail rating.

8.2.1.5.2.1. **(Added-AFMC) QA personnel must assign a QAR-3 rating if:**

8.2.1.5.2.1.1. **(Added-AFMC)** A TO "warning" is overlooked or a safety error that could result in personal injury is detected.

8.2.1.5.2.1.2. **(Added-AFMC)** A TO "caution" is overlooked or an equipment reliability error that could result in equipment or system unreliability or damage is detected.

8.2.1.5.2.1.3. **(Added-AFMC)** The person or team accomplishing the task being evaluated demonstrates a lack of technical proficiency.

8.2.1.6. **(Added-AFMC) Rating Evaluations.** Each evaluation will be based on AQLs/standards. A failed rating means the specific task was not performed within the established AQL/standard. The rating applies only to the specific task evaluated.

8.2.1.6.1. **(Added-AFMC) Pass.** Pass is the result of an evaluation when the number of minor discrepancies does not exceed AQLs/standards.

8.2.1.6.2. **(Added-AFMC) Fail.** Fail is the result of an evaluation when any of the following occur:

8.2.1.6.2.1. **(Added-AFMC)** The number of minor discrepancies exceeds the established AQLs/standards.

8.2.1.6.2.2. **(Added-AFMC)** Individual fails to detect a major discrepancy while complying with an inspection or work card requirement.

8.2.1.6.2.3. **(Added-AFMC)** Individual fails to comply with a step of prescribed technical data that could affect the performance of the equipment involved or cause injury to personnel.

8.2.1.6.2.4. **(Added-AFMC)** Individual demonstrates a lack of technical proficiency or system knowledge for that specific task.

8.2.1.6.2.5. **(Added-AFMC)** Individual commits a safety violation.

8.2.1.6.2.6. **(Added-AFMC)** Individual fails to document maintenance actions in appropriate equipment records.

8.2.1.7. **(Added-AFMC) Data Collection and Analysis.**

8.2.1.7.1. **(Added-AFMC) Quality Metrics.** The purpose of quality metrics is to measure efficiency, effectiveness, and provide regular feedback to management on the health of the processes, products, systems, programs, and personnel evaluated. AFSC shall ensure ALCs establish mandatory metrics, evaluation criteria, level/frequency of reporting, and other pertinent information. The formula for all metrics described below is the number of QAR-1 rated (pass) assessments divided by the total number of that type assessment conducted in an organization for a given time period (e.g., total QAR-1 RI Tool assessments divided by the total number of RI Tool assessments performed in a Squadron/Group per month or quarter). Deduct 0.5 percentage points for each TDV, DSV, and UCR from the overall percentage grade. Metrics data will be extracted from the Command approved QA database for PE, QVI, RI, MI, and SI assessments.

8.2.1.7.2. **(Added-AFMC) Grading.** The results of the total number of inspections accomplished during the period will be assigned one of the following five tier ratings based on number of inspections passed versus completed. In addition, the results of the total number of inspections accomplished during the period may be rolled up to create a cumulative rating by Work Center, Section, Flight, Squadron, Group, and ALC.

8.2.1.7.2.1. **(Added-AFMC)** Outstanding 95%-100%

8.2.1.7.2.2. **(Added-AFMC)** Excellent 90%-94.99%

8.2.1.7.2.3. **(Added-AFMC)** Satisfactory 80%-89.99%

8.2.1.7.2.4. **(Added-AFMC)** Marginal 70%-79.99%

8.2.1.7.2.5. **(Added-AFMC)** Unsatisfactory 0%-69.99%

8.2.1.7.3. **(Added-AFMC) MSEP Summary.** The MSEP summary shall be compiled and reported on a monthly basis. The MSEP summary will include visual information, graphs, narratives, quality trends identified through inspections and evaluations, discussion of common problem areas, and descriptions of successful programs or initiatives. As a minimum, the narratives must contain an analysis of MSEP results, a summary of significant discrepancies, technical inspections, and recommendations for improvement. The MSEP summary will include pertinent internal and external metrics as outlined below. The MSEP summary shall be distributed to HQ AFMC/A4, AFSC/LG, ALC/CC, and Group CC/CL.

8.2.1.7.4. **(Added-AFMC) Internal and Customer Reported Metrics.** In addition to reporting quality metrics, Complex QAs shall collect and report other internal metrics related to production quality during the MSEP quarterly review.

8.2.1.7.4.1. **(Added-AFMC)** Internal activities (e.g., QVIQ, Team Spirit, FCF discrepancies, and Joint Deficiency Reporting System [JDRS] IAW TO 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution*, etc.). **(T-1)**.

8.2.1.7.4.2. **(Added-AFMC)** Customer reported activities (e.g., JDRS IAW TO 00-35D-54, etc.).

8.2.2. AFMC shall document MSEP data in an approved QA database.

8.2.2. **(AFMC)** AFSC shall document MSEP data in the Command approved QA database. QA data shall be retained for a period of seven years.

8.2.2.1. **(Added-AFMC)** Quality Information Management Standard System (QIMSS) or other Command approved QA databases shall be used as the tool for collecting and compiling QA data collected by QA personnel. This information will allow management to make informed and responsible decisions about the quality system. The organization assessed is responsible for ensuring the corrective and preventive action is input into the Command approved QA database. Personnel using QIMSS or Command approved QA databases must be trained to the extent necessary to effectively use the system.

8.2.2.1.1. **(Added-AFMC) AFMC Form 343, *Quality Assurance Assessment*.** Quality assessment data will be documented on the computer generated AFMC Form 343 and recorded in the Command approved QA database. The Command approved QA database collects, indexes, files, stores, and maintains applicable AFMC Form 343 data.

8.2.2.1.2. **(Added-AFMC) Processing.** QA must input the assessment into the Command approved QA database within one work day (24 hours) and 10 work days for corrective/preventive actions. AFSC shall further identify AFMC Form 343 processing procedures to include extension of suspense dates.

8.3. Quality Assurance Program. AFMC/CC shall develop a Quality Assurance Program. At a minimum, this program shall:

8.3. (AFMC)Quality Assurance Program. AFSC shall develop, implement, and maintain a standardized Quality Assurance Program. At a minimum, this program shall:

8.3.1. Ensure all QA inspector personnel are properly trained and proficient in their duties prior to performing unsupervised evaluations. If a functional area does not warrant a full-time position in QA, but specialized expertise is required, select qualified technicians to be augmentees.

8.3.1.1. **(Added-AFMC)** Training shall cover inspection and evaluation techniques, how to document inspection worksheets, and actions to prevent personnel injury or equipment damage. Document QA inspector training in individual training records or MIS.

8.3.1.2. **(Added-AFMC)** All QASs, inspectors, and evaluators (i.e., QA personnel) must be trained IAW AFI 36-2232 AFMC Supplement and training requirements outlined in the AFMC GS-1910 Civilian Training Plan (CTP).

8.3.1.3. **(Added-AFMC)** QA personnel are not required to be PAC certified on tasks being assessed but must meet any qualification (mandatory formal training) requirements as defined in **Chapter 13** of this instruction. Section III of the PAC record will be used to document QAS task qualifications.

8.3.1.4. **(Added-AFMC)** AFSC will develop, implement, and maintain a standardized QA training program that includes the AFMC Depot Maintenance QA Course, the QIMSS Users Course, and the QIMSS Administrators Course.

8.3.2. Ensure all QA inspectors complete Egress certification before evaluating egress tasks IAW **Chapter 12** of this Instruction.

8.3.2.1. **(Added-AFMC)** Where no formal Air Education and Training Command (AETC) Egress training is available, units will develop local Egress training requirements with final approval by HQ AFMC/A4P.

8.3.3. Evaluate welding operations and processes IAW TO 00-25-252, *Aeronautical Equipment Welding*.

8.3.4. Ensure all QA inspectors are trained on all associated safety requirements prior to performing inspections on fuel systems or fuel systems repair facilities IAW TO 1-1-3, *Inspection and Repair of Aircraft Integral Tanks and Fuel Cells*.

8.3.5. Ensure all QA inspectors evaluating Nondestructive Inspection (NDI) technicians during Personnel Evaluations are trained and qualified on the method being evaluated.

8.3.5.1. **(Added-AFMC)** QA will conduct a minimum of one PE on each NDI technician on one NDI method every 18 months to ensure effective trending on NDI methods. When the NDI technician is qualified in multiple NDI methods, PEs shall be performed on a different NDI method every 18 months.

8.3.5.2. **(Added-AFMC)** Utilize AFMC Form 74, *Nondestructive Inspection Personnel Qualification and Certification Record*.

8.3.6. Ensure Acceptable Quality Level (AQL) standards are developed for workloads being assessed.

8.3.7. Determine operations that require a quality review prior to continuing maintenance.

8.3.8. Determine routine inspections to be completed.

8.3.9. Evaluate unit maintenance management procedures, including locally developed forms, publications, Operating Instructions (OIs), checklists etc., for accuracy, intent, and necessity.

8.3.10. **(Added-AFMC)** Ensure qualified inspectors conduct an Evaluator Proficiency Evaluation (EPE) on each inspector performing one PE or one QVI every two years. QA augmentees require an annual EPE on either a PE or QVI. Each QA inspector, permanent or augmentee, must pass an EPE prior to performing unsupervised evaluations and inspections. All EPEs must be tracked in a Command approved QA database.

8.3.11. **(Added-AFMC)** Ensure QA personnel who conduct engine run evaluations be trained on initial course requirements but do not have to maintain certification.

8.3.12. **(Added-AFMC)** Ensure QA personnel evaluating Low Observables maintenance maintain minimum experience requirements as mandated by the applicable MDS.

8.4. Activity Inspection Program. AFMC/CC shall develop an Activity Inspection Program that:

8.4. (AFMC)Activity Inspection Program. AFSC shall develop, implement, and maintain a standardized Activity Inspection Program that:

8.4.1. Identifies discipline, housekeeping, and technical discrepancies and attempt to identify the underlying cause for the deficiencies.

8.4.2. Encompasses all flights of the unit.

8.4.3. Produces objective reports and provides specific definitions of problem areas, appropriate directive references, and recommended corrective action.

8.4.4. **(Added-AFMC)** Ensures Activity Inspections (AIs) are conducted annually. Note: Air Force Inspection Program activities can satisfy the annual AI requirement as long as the appropriate Management Internal Control Toolset (MICT) checklists are used.

8.5. Additional Quality Programs. AFMC/CC shall:

8.5. (AFMC)AFSC shall:

8.5.1. Ensure development of a cross-tell program for preventive action purposes.

8.5.2. Manage Title 14, Code of Federal Regulations (CFR) Federal Aviation Administration (FAA) Part 145, *Repair Stations*, program, if applicable.

8.5.3. Manage One-Time Inspections (OTIs) IAW TO 00-20-1.

8.5.4. Review aircraft aborts, in-flight emergencies, and other incidents as required.

8.5.5. Manage the application of commercial quality standards, as applicable (e.g., International Organization for Standardization (ISO), Aerospace Standards (AS), Nadcap (formerly NADCAP, the National Aerospace and Defense Contractors Accreditation Program), etc.).

8.5.6. Identify and resolve deficiencies IAW TO 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution*.

8.5.7. **(Added-AFMC)** Establish a standardized ALC Quality Program IAW this document and AFMCI 63-501. The program shall ensure that all organizations involved in or supporting depot operations employ a quality management approach to include flow down of AF and AFMC quality requirements.

8.5.8. **(Added-AFMC)** Ensure QA inspectors have the authority to observe, correct (when appropriate), and document maintenance activities.

8.5.9. **(Added-AFMC)** Provide the necessary resources, support, and authority for the QA functions to support the requirements of this instruction.

8.5.10. **(Added-AFMC)** Review MSEP findings and corrective/preventive actions.

8.5.11. **(Added-AFMC)** Ensure the QA function is an independent function.

8.5.12. **(Added-AFMC)** Ensure quality goals and objectives are established at relevant functional levels. The quality goals and objectives will be measurable and consistent with quality policies.

8.5.13. **(Added-AFMC)** Ensure QA personnel implement, administer, or provide oversight of the following programs:

8.5.13.1. **(Added-AFMC)** Deficiency Reporting.

8.5.13.2. **(Added-AFMC)** AFTO Form 22, *Technical Manual (TM) Change Recommendation and Reply*, Program.

8.5.13.3. **(Added-AFMC)** Aircraft and Equipment Impoundment Program IAW **Chapter 9** of this instruction.

8.5.13.4. **(Added-AFMC)** FCF program IAW **Chapter 13** of this instruction.

8.5.13.5. **(Added-AFMC)** Aircraft aborts, In-Flight Emergencies, and other incidents as required.

8.6. (Added-AFMC) Depot Maintenance QA Responsibilities.

8.6.1. **(Added-AFMC)** HQ AFMC/A4 shall:

8.6.1.1. **(Added-AFMC)** Manage the AFMC MSEP, and serve as the POC for AFMC evaluations and depot maintenance QA functions.

8.6.1.2. **(Added-AFMC)** Develop the Commander's Inspection Program checklists IAW AFI 90-201 AFMC Sup.

8.6.1.3. **(Added-AFMC)** Develop, review, and maintain the AFMC Command Routine Inspection List (RIL) checklists. Checklists will be reviewed annually or as changes occur.

8.6.1.4. **(Added-AFMC)** Review results of HQ AFMC/IG inspections and the MSEP for needed policy actions.

8.6.1.5. **(Added-AFMC)** Ensure development and maintain depot maintenance QA training. This includes the Depot Maintenance QA Course and the GS-1910 CTP.

8.6.1.6. **(Added-AFMC)** Serve as AFMC Functional Advocates (FAs) for development and maintenance of the Command approved QA database and training necessary for all levels of users to effectively use the program.

8.6.1.7. **(Added-AFMC)** Host the Quality Assurance Working Group (QAWG).

8.6.1.7.1. **(Added-AFMC)** QAWG members include HQ AFMC/A4 QA functionals and Complex QA Chiefs. Additionally, HQ AFMC/IGL, HQ AFMC FAMs, ALC Group QA Chiefs, and designated union representatives shall attend as required.

8.6.1.7.2. **(Added-AFMC)** QAWG members will meet annually (funding permitting) and participate in monthly teleconferences.

8.7. (Added-AFMC) Dull Sword Investigation and Reporting. Dull Sword reporting procedures are IAW AFMAN 91-221. **(T-1)**. AFSC shall develop local procedures for the Dull Sword investigation, reporting, and distribution. The Weapons Safety Manager is the OPR for this program.

8.8. (Added-AFMC) Joint Deficiency Reporting. The Joint Deficiency Reporting System (JDRS) has been established to identify, report, and resolve deficiencies on military weapon systems. AFMC has overall responsibility for TO 00-35D-54 and for matters pertaining to overall DR policy and procedures.

Chapter 9

IMPOUNDMENT PROCEDURES

9.1. Aircraft, Major End Item, and Equipment Impoundment. Aircraft, major end item, or equipment is impounded when intensified management is warranted due to system or component malfunction or failure of a serious or chronic nature. Refer to AFI 91-204 for aircraft and equipment involved in accidents, mishaps, or incidents.

9.2. Impoundment Terms and Responsibilities:

9.2.1. Impoundment. Impoundment is the isolation or control of access to an aircraft, major end item, or equipment and applicable historical records so an intensified investigation can be completed.

9.2.2. Impoundment Authority. The Impoundment Authority is the individual authorized to impound aircraft, major end item, or equipment. Maintenance Group Commanders (MXG/CC) (or equivalent) shall designate Impoundment Authorities. The Impoundment Authority shall select the Impoundment Official.

9.2.3. Impoundment Official. The Impoundment Official is the single point of contact for the affected aircraft, major end item, or equipment and is responsible for controlling, monitoring, and investigating the impounded aircraft, major end item, or equipment. The Impoundment Official ensures only authorized personnel have access to the impounded aircraft, major end item, or equipment. Aircraft, major end item, or equipment records shall be controlled at the discretion of the Impoundment Official.

9.2.4. Authorized Personnel. Authorized Personnel are individuals directly involved in the management, safing, troubleshooting, or repair of impounded aircraft, major end item, or equipment.

9.2.5. Impoundment Release Authority. The Impoundment Release Authority is an individual authorized to release aircraft, major end item, or equipment from impoundment. MXG/CCs (or equivalent) or their designated representatives have authority to release the impounded aircraft, major end item, or equipment.

9.2.6. Isolation Area. The Isolation Area is an area designated by the Impoundment Authority to locate impounded aircraft, major end item, or equipment. Aircraft may be isolated on the flightline or in hangars. The isolation area shall be marked off using cones, ropes, or placards indicating the impoundment condition and isolation area.

9.3. Impoundment Program. AFMC/CC shall develop an impoundment program that enables investigative efforts to systematically proceed with minimal risk relative to intentional/unintentional actions and subsequent loss of evidence.

9.3. (AFMC)AFSC shall: Develop, implement, and maintain a standardized impoundment program.

9.3.1. At a minimum, the program shall:

9.3.1.1. Use established checklists to guide the sequence of actions.

9.3.1.2. Ensure security and appropriate access to impounded aircraft, major end item, or equipment records are maintained.

9.3.1.3. Define what maintenance can be performed in conjunction with the maintenance required to release the aircraft, major end item, or equipment from impoundment. Maintenance actions shall be limited to those required to make the aircraft, major end item, or equipment safe.

9.3.1.4. Ensure the Impoundment Official is supported by a team of qualified individuals that is dedicated to determining the cause of the impoundment. Impoundment team members shall be relieved of all other duties until released by the Impoundment Official.

9.4. Reasons for Impoundment of Aircraft, Major End Item, or Equipment. The following conditions require mandatory impound of aircraft, major end item, or equipment:

9.4.1. When the Impoundment Authority determines extraordinary measures are required to ensure the safe operating condition of a specific aircraft, major end item, or equipment, to address any degradation of aircraft airworthiness or serious anomaly, or after the 2nd repeat/recur of a safety-of-flight maintenance discrepancy.

9.4.2. Following an aircraft ground or flight related mishap as defined in AFI 91-204 and AFMAN 91-223, *Aviation Safety Investigations And Reports*.

9.4.3. Following an uncommanded flight control movement.

9.4.4. When there is an inadvertent ordnance release or an explosive mishap.

9.4.5. When authorized procedures are not adequate or the unit is unable to identify or repair loaded nuclear weapons system malfunctions within the criteria of AFI 91-107, *Design, Evaluation, Troubleshooting, and Maintenance Criteria for Nuclear Weapon Systems*.

9.4.6. For engine anomalies to include but not limited to:

9.4.6.1. Unselected propeller reversal.

9.4.6.2. Flameout/stagnation (for single engine aircraft).

9.4.6.3. Unselected power reversal.

9.4.6.4. Engine case penetration, rupture, or burn-through from an internal engine component.

9.4.6.5. When an aircraft experiences a loss of thrust sufficient to prevent maintaining level flight at a safe altitude. This includes all cases of multiple engine power loss or roll back.

9.4.6.6. Internal engine damage due to a Foreign Object (FO) which can be isolated to the engine and requires removal for repair shall result in the engine being impounded. Aircraft impoundment is not required.

9.4.6.7. Engine damaged while in transport.

9.4.7. When an in-flight fire occurs.

9.4.8. When an aircraft experiences an in-flight loss of all pitot-static system instruments or all gyro stabilized attitude or direction indicators.

9.4.9. When there is evidence of intentional damage, tampering, or sabotage.

9.4.10. When there are physiological incidents attributable to aircraft systems or cargo (crew members become ill during flight).

9.4.11. Impoundment Authorities have discretion to determine whether impoundment is warranted when:

9.4.11.1. An aircraft landing gear fails to extend or retract.

9.4.11.2. When the aircraft has been confirmed as being contaminated with chemical, biological, or radiological materials in the aftermath of a terrorist incident and the residual hazard cannot be satisfactorily removed.

9.4.11.3. When an aircraft or major end item sustains FO damage from an unknown cause.

9.5. Impoundment Process and Procedures.

9.5. (AFMC)AFSC shall: Develop, implement, and maintain standardized impoundment processes and procedures.

9.5.1. When the Impoundment Authority directs impoundment, a Red X symbol shall be placed in the applicable Air Force Technical Order (AFTO) Form 781A, *Maintenance Discrepancy and Work Document* (or electronic equivalent) or AFTO Form 244 *Industrial/Support Equipment Record*, with a statement indicating the reason for impoundment and the name of the assigned Impoundment Official. Reference TO 00-20-1 for additional detail.

9.5.2. Once the investigation is complete, the Impoundment Official briefs the Impoundment Release Authority on findings and corrective actions and requests release of the aircraft, major end item, or equipment from impoundment.

9.5.3. The Impoundment Release Authority determines the need for a one-time flight and requests appropriate authorization IAW TO 00-20-1.

9.5.4. The Impoundment Release Authority clears impoundments from forms/MIS IAW TO 00-20-1.

Chapter 10

TOOL AND EQUIPMENT MANAGEMENT

10.1. Tool and Equipment Management. The objectives of the tool and equipment management program are to prevent and eliminate FOD to aircraft, engines, missiles, training, and support equipment and to reduce costs through strict, effective control and accountability of assets. AFMC/CC shall execute an effective tool program that addresses the following:

10.1. (AFMC)AFSC shall: Develop, implement, and maintain a standardized tool program that addresses the following:

10.1.1. Standardized procedures for security, control, and accountability of tools and equipment, to include the requirements for designation of a responsible party for every tool kit, to include:

10.1.1. (AFMC) Employees responsible for government property will complete AFMC Form 311, *Certificate of Responsibility for Government Property*.

10.1.1.1. Ensuring each tool, item of equipment, or consumable contained in Tool Kits (TK), including Consolidated Tool Kits (CTKs), Individual Tool Kits (ITKs), specialty kits, etc., has an assigned location identified either by inlay cuts in the shape of the item, shadowed layout, label, or silhouette. No more than one item is stored in a cutout, shadow, or silhouette except for tools issued in sets such as drill bits, allen wrenches, apexes, or paired items (e.g., gloves or booties).

10.1.1.2. Accounting for all TKs, tools, and dispatchable equipment at the beginning and end of each shift.

10.1.1.2.1. (Added-AFMC) These tool inventories will be recorded on AFMC Form 309, *AFMC Tool Control Inventory Record*.

10.1.1.2.2. (Added-AFMC) Loaned tools will be recorded on AFMC Form 307, *Temporary Loan Record*.

10.1.1.3. Maintaining an inventory list (e.g., Tool Kit Custodial Receipt Listing) for all tool kits.

10.1.2. Inventory requirements. As a minimum, conduct and document an annual inventory of all tools and equipment.

10.1.3. Procedures for warranted tool management.

10.1.4. Procedures for control and management of replacement, expendable and consumable hand tools, and other items contained in TKs.

10.1.5. Procedures for transfer of tools/TKs at the job site (on-site transfers).

10.1.6. Procedures for lost or missing tools.

10.1.6.1. (Added-AFMC) Use AFMC Form 310, *Lost/Found Item Report*, to document lost or missing tools.

10.1.7. Procedures for issue and control of PPE. Mark tools or equipment that a work center assigns/issues to an individual.

10.1.8. Procedures to ensure positive control of rags.

10.1.8.1. 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.

10.1.9. Procedures to limit numbers of personnel authorized to procure tools.

10.1.10. Procedures for depot teams, factory representatives, and Contract Field Teams (CFTs) when working on equipment within the unit.

10.1.11. Procedures to issue and account for tools where more than one person is using the same TK.

10.1.12. Procedures for Production Support Center (PSC)/tool issue center control, security, and accountability.

10.1.13. Procedures for approval and control of locally manufactured, developed, or modified tools and equipment.

10.1.14. Procedures to ensure accountability and control of Clecocs.

10.1.15. Procedures for long term TK storage.

10.1.16. Procedures for ensuring personal tools are not used.

10.2. Industrial Shop Machinery Accessories/Attachments. Industrial shop machinery accessories/attachments (e.g., blades, arbors, chucks, gears) need not be controlled as tools; however, these items shall be maintained in designated storage locations for accountability.

10.3. Tool Marking Procedures. Tools, common accessories, support equipment, and Custodian Authorization and Custody Receipt Listing (CA/CRL) equipment issued individually or as part of a tool kit shall be marked prior to issue with the center code (see [Table 10.1](#)) and a number identifying it to the proper tool issue center, PSC, or back shop. Small tools or items that cannot be marked as described above (such as drill bits, allen wrench sets, apexes, etc.) are to be maintained in a container marked with the TK Identification (ID) number and an identifying character(s) that ties the tool back to the TK along with the number of tools contained. The container is counted as one of the items.

Table 10.1. ALC/Aircraft Maintenance and Regeneration Group (AMARG) ID Number Marking Codes.

CODE	ALC
AM	AMARG
HL	OO-ALC, Hill AFB
OC	OC-ALC, Tinker AFB
WR	WR-ALC, Robins AFB

10.4. (Added-AFMC) Training. Each ALC will use the AFMC standard Tool Control and Accountability Course for initial and refresher training. The AFSC is authorized to supplement the command courses to include local procedures outlined in the unit's tool control publication. All employees who work with tools and equipment (including Quality Assurance), and appropriate management levels are required to complete the initial tool control course and

refresher training. Initial training will be requested within 30 days of assignment to a maintenance position.

Chapter 11

MAINTAINING COMMERCIAL DERIVATIVE AIRCRAFT

11.1. Background Information and Objective. The AF procures commercial derivative aircraft for various missions. These aircraft are intended to conform to FAA standards and designs. The AF maintains these aircraft according to civil airworthiness standards using AF maintenance systems and procedures. They must meet FAA requirements when modifying these aircraft to maintain configuration control and ensure flight safety.

11.1.1. Modifications, repairs, and overhauls accomplished by organic or commercial depot maintenance activities to AF commercial derivative aircraft having FAA certification shall not cause the aircraft to lose its FAA certification. All depot maintenance activities and organizations associated with commercial derivative aircraft must comply with the respective TOs and/or aircraft manuals. All modifications, repairs, and overhauls to commercial derivative aircraft by organic or contractor depot maintenance activities shall be performed in an FAA certified or military equivalent facility. For additional detail, reference Title 14, CFR, Part 145.

11.1.2. Organic depot maintenance may use a Certificate of Conformance or Return to Service certification when applicable for the FAA approved maintenance processes for a specific workload.

11.2. Certification Requirements. Organic depot maintenance shall be performed on commercial derivative aircraft in an organic FAA certified Part 145 Repair Station or military equivalent facility. AF military and civilian maintenance technicians performing maintenance in an organic FAA certified Part 145 Repair Station or military equivalent facility who work under the authority of that specific repair station typically do not require individual FAA certification. Only those inspectors authorized by the repair station to issue a Certificate of Conformance or return an item to service are required to be FAA certified (Airframe, Powerplant, or Repairman certification).

11.3. Inspection Requirements. Depot maintenance accomplished either organically or commercially on Commercial Derivative Aircraft shall comply with inspection requirements.

11.4. Deviations from Inspection Requirements. When deviation from these requirements or intervals is justified, proposed changes shall be sent to the PM for evaluation.

11.5. Component Overhaul and Time Change Intervals. Use the manufacturer's component overhaul and time-change intervals for commercial derivative aircraft and its installed equipment. Do not exceed the FAA approved intervals.

11.6. Airframe Overhaul. Overhaul of commercial derivative aircraft during Programmed Depot Maintenance (PDM) shall be accomplished according to FAA requirements. The PM determines PDM cycle intervals and related work requirements IAW TO 00-25-4, *Depot Maintenance of Aerospace Vehicles and Training Equipment*, and the aircraft Dash-6 inspection manual. General requirements and related time intervals include all major elements of the aircraft.

11.7. Aircraft and Component Modifications. The FAA issues a supplemental type certificate (STC) for a change to a type design. For AF-designed modifications to commercial derivative

aircraft and components, obtain AF approval IAW AFI 63-131. Obtain FAA certification by sending FAA Form 8110-12, *Application for Type Certificate*, with engineering data attached, to the FAA regional office. 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. Have contractors obtain the FAA certification or STC for a contractor-designed modification.

11.8. Aircraft and Component Modifications. Maintenance on AF aircraft and components having FAA certification, when accomplished by AF depot maintenance activities, does not cause the aircraft to lose its FAA certification. All modifications to such aircraft shall comply with AFD 62-6, *USAF Airworthiness*. Such modifications are required to keep the weapon system or aircraft in compliance with FAA standards and to maintain FAA certification.

Chapter 12

AIRCREW EGRESS SYSTEMS MAINTENANCE

12.1. Egress Maintenance Program. AFMC/CC shall execute an effective Aircrew Egress Systems Maintenance Program.

12.1. (AFMC)AFSC shall: Develop, implement, and maintain a standardized Aircrew Egress Systems Maintenance Program.

12.1.1. 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 are also responsible for egress maintenance as outlined in this instruction.

12.1.2. All personnel shall use the Demand Response Team when directed by technical orders, 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.

12.2. Facilities.

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

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

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

12.2.4. The egress section's 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. See AFMAN 91-201, *Explosive Safety Standards*, for additional restrictions.

12.3. Safety Requirements.

12.3.1. Personnel shall strictly adhere to all safety requirements outlined in AFMAN 91-201, AFI 91-202, *The US Air Force Mishap Prevention Program*, AFI 11-209, *Aerial Event Policy and Procedures*, and all 11A-, 11P-, 13A-series and aircraft-specific TOs.

12.3.2. Operators of an explosive laden vehicle must have completed and be current on Egress Explosive Safety Training and qualified on the particular type of vehicle being driven IAW AFI 24-301, *Vehicle Operations*.

12.4. Classification Training. Egress personnel shall meet mandatory training requirements contained in AFI 36-2201, *Air Force Training Program*, (or intra-service equivalent), AFI 91-202, this AFI, and the Career Field Education and Training Plan (CFETP) or AFMC Egress Civilian Training Plan.

12.5. Initial Certification of Egress and Non-Egress Personnel Who Augment Egress Technicians or Perform Quality Assurance Evaluations of Egress Systems.

12.5.1. Once classification training is complete, egress personnel must successfully complete an Air Education and Training Command (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 technician course. Whether or not these individuals attend the course is the decision of the egress workcenter supervisor. **Note:** non-egress personnel augmenting egress technicians and Quality Assurance Personnel who perform egress evaluations must meet the same training and certification/qualification requirements.

12.5.2. Personnel are certified to perform and inspect egress systems maintenance by demonstrating adequate proficiency to a designated certifying official in the egress systems workcenter. Certification pass/fail criteria shall be established by the egress workcenter supervisor. Document certification in accordance with AFI 36-2201, *Air Force Training Program*, and the requirements as detailed in **Chapter 13** of this Instruction.

12.6. Decertification.

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

12.6.2. Decertify non-egress personnel who have not been recertified in the past 180 days. Decertify egress personnel after not having performed egress maintenance for more than 18 months. Instructing and inspecting egress maintenance is not considered performing maintenance.

12.6.3. Document decertification in accordance with AFI 36-2201 and **Chapter 13** of this Instruction.

12.7. Recertification.

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

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

12.7.3. Recertification procedures are identical to initial certification procedures and shall be accomplished in accordance with **paragraph 12.5.2**. Document recertification in accordance with AFI 36-2201 and **Chapter 13** of this Instruction.

12.8. Using Newly Assigned Uncertified Egress Personnel.

12.8.1. Newly assigned uncertified egress personnel may assist in performing egress systems maintenance. These personnel shall never clear (sign off) AFTO Form 781-series, Work Control Documents, or condition tags.

12.9. Egress/Cockpit Familiarization Training. All non-egress personnel who access aircraft cockpits with egress systems 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 shall include location and installation procedures of egress system safety devices, cockpit entry/exit procedures, procedures for determining whether or not an egress component is expended, emergency procedures associated with an expended egress component, and local maintenance concerns identified by the egress workcenter supervisor.

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

12.9.2. New personnel to the unit shall receive initial familiarization training prior to accessing 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 annual egress familiarization training shall not access aircraft cockpits until they complete familiarization training.

12.10. Egress Systems Inspections and Documentation.

12.10.1. A certified egress production inspector shall 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.

12.10.2. All systems Red X provisions. Only egress personnel shall clear (sign off) egress system discrepancies listed in aircraft forms and in WCDs.

12.11. Cannibalization actions.

12.11.1. 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.

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

12.11.3. After cannibalization actions, Red X discrepancies in the aircraft AF Form 781A or equivalent shall not be cleared until the Reliability and Availability Information System (REMIS) is reviewed to ensure the correct configuration of the aircraft CAD/PAD items that were cannibalized.

Chapter 13

ADDITIONAL PROGRAM REQUIREMENTS

13.1. Aircraft and Equipment Decontamination. AFMC/CC shall develop a decontamination program in accordance with Mission-Design Series (MDS) specific technical data and the following references: AFOSHSTD 91-100, *Aircraft Flight Line – Ground Operations and Activities*, AFOSHSTD 91-501, *Air Force Consolidated Occupational Safety Standard*, TO 00-110A-1, *Guidelines for Identification and Handling of Aircraft and Material Contaminated with Radioactive Debris (Fallout)*.

13.2. Housekeeping. Housekeeping and contamination procedures are critical to protecting the health of workers and maintaining areas as free as practicable from surface contamination. A bio-environmental approved workplace housekeeping procedure shall be employed to prevent contamination spread within a work center. Emphasis shall be placed on controlling the source of the contamination and on ensuring workplace personnel follow proper work procedures, PPE use, and hygiene practices.

13.2.1. The Work Area/Shop Supervisor shall develop and maintain a work area/shop-specific written housekeeping program.

13.2.2. The housekeeping program shall be incorporated into the work area/shop specialized safety, fire protection, and health on-the-job training lesson plan IAW AFI 91-202.

13.2.3. Workplace supervisors shall ensure the housekeeping plan is implemented, documented on a cleaning log, and adequately carried out by workers.

13.2.4. Supervisors shall document housekeeping follow-up inspections and maintain in accordance with the AF Records Disposition Schedule.

13.3. Aircraft Grounding (Materiel Defect) Program. 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 grounding their fleet until the matter can be properly investigated and resolved. AFMC/CC shall develop procedures for depot maintenance support to grounded aircraft, engines, or major end items.

13.3. (AFMC)AFSC shall: Develop, implement, and maintain standardized procedures for depot maintenance support to grounded aircraft, engines, or major end items. For additional guidance, reference AFI 11-401, *Aviation Management*.

13.4. Cannibalization Program. Cannibalization 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. AFMC/CC shall develop procedures for authorizing CANN actions, to include criteria for executing and required documentation as prescribed in 00-20 series TOs.

13.4.1. **(Added-AFMC)** AFSC shall 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.

13.5. Dropped Object Prevention (DOP) Program. A dropped object is any aircraft part, component, surface, or other item lost during aircrew operations, unless intentionally jettisoned from engine start to engine shutdown. AFMC/CC shall develop a DOP program which addresses, at a minimum, training, reporting, investigation, and prevention.

13.5. (AFMC)HQ AFMC/A4: Is the OPR for the AFMC DOP Program.

13.5.1. **(Added-AFMC)** The primary Command DOP Program Manager is assigned to HQ AFMC/A4M. The Command DOP Program Manager shall:

13.5.1.1. **(Added-AFMC)** Clarify policy and assist units in resolving DOP issues.

13.5.1.2. **(Added-AFMC)** Work with other MAJCOM DOP Program Managers to resolve DOP issues between the Complexes, Centers, and owning Commands.

13.5.1.3. **(Added-AFMC)** Develop DOP incident reporting procedures:

13.5.1.3.1. **(Added-AFMC)** Complex/Wing/Center DOP Program Manager shall provide an initial dropped object report via e-mail to HQ AFMC/A4M workflow within 24 hours of occurrence. In addition, if it involves casualties, property damage, or if adverse publicity is likely, report IAW AFI 10-206, *Operational Reporting*. **(T-1)** The safety office shall be notified of all dropped objects within 24 hours of occurrence, unless it involves casualties, property damage, or if adverse publicity is likely, then the safety office shall be notified immediately. The DOP report format listed in **Attachment 2** shall be followed.

13.5.1.3.2. **(Added-AFMC)** Complex/Wing/Center DOP Program Manager shall provide a final dropped object report via e-mail to HQ AFMC/A4M workflow. Reports shall be maintained for a minimum of 24 months (may be electronic). The DOP report format listed in **Attachment 2** shall be followed.

13.5.1.4. **(Added-AFMC)** Input the data from the Complex/Wing/Center DOP reports into the DOP tracking tool and provide reports to the HQ AFMC/A4 when requested.

13.5.2. **(Added-AFMC)** AFSC shall:

13.5.2.1. **(Added-AFMC)** Assign a DOP Program Manager.

13.5.2.2. **(Added-AFMC)** Develop, implement, and maintain detailed guidance and procedures to supplement the Command DOP Program. Directives shall outline organizational responsibilities for each ALC, Air Base Wing (ABW), and any units which fly, service, or maintain aircraft.

13.5.2.3. **(Added-AFMC)** Develop and implement a DOP training program. For additional guidance, reference AFI 36-2650, *Maintenance Training*.

13.5.2.4. **(Added-AFMC)** Investigate each dropped object incident to determine the precise cause and ensure positive corrective action is accomplished.

13.5.2.4.1. **(Added-AFMC)** 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. **(T-1)**.

13.5.2.5. **(Added-AFMC)** Follow Command DOP incident reporting procedures.

13.5.2.6. **(Added-AFMC)** Investigate dropped objects from transient aircraft and provide the home station DOP Program Manager with sufficient data to generate a report for trending and tracking purposes.

13.5.2.7. **(Added-AFMC)** Develop, implement, and maintain standardized procedures to collect dropped object incident reports from tenant organizations.

13.6. Foreign Object Damage (FOD) Prevention Program. 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.

13.6. (AFMC) There are two categories of FO areas: critical and non-critical. FO critical areas are maintenance areas 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 FO areas are all other areas not defined previously. AFSC shall identify and document critical/non-critical FO areas.

13.6.1. AFMC/CC shall ensure effective FOD prevention program is established which addresses, at a minimum: capping, plugging, covering, controlling, reporting, accounting, investigating, and inspecting. The FOD program must also outline flightline requirements, oversight responsibilities, and standardized terminology. 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 shall comply with FOD prevention.

13.6.1. **(AFMC)** HQ AFMC/A4 is the OPR for the AFMC FOD Prevention Program.

13.6.1.1. **(Added-AFMC)** The primary Command FOD Prevention Program Manager is assigned to HQ AFMC/A4M. The Command FOD Prevention Program Manager shall:

13.6.1.1.1. **(Added-AFMC)** Clarify policy and assist units in resolving FOD issues.

13.6.1.1.2. **(Added-AFMC)** Work with other MAJCOM FOD Prevention Program Managers to resolve FOD issues between the Complexes, Centers, and owning Commands.

13.6.1.1.3. **(Added-AFMC)** Develop FOD incident reporting procedures.

13.6.1.1.3.1. **(Added-AFMC)** Complex/Wing/Center FOD Prevention Program Manager shall establish a process to report cut tires to airfield management upon discovery so the taxiways and runways can be inspected for possible FOs.

13.6.1.1.3.2. **(Added-AFMC)** Complex/Wing/Center FOD Prevention Program Manager shall provide an initial FOD report via e-mail to HQ AFMC/A4M workflow within 24 hours of occurrence. The final report will be submitted to AFMC/A4M via email after investigation is complete. Reports shall be

maintained for a minimum of 24 months. The FOD report format listed in **Attachment 3** shall be followed.

13.6.1.1.3.3. **(Added-AFMC)** Complex/Wing/Center FOD Prevention Program Manager shall provide a completed AFMC Form 40 *Foreign Object Damage Record*, or electronic equivalent, monthly via e-mail to HQ AFMC/A4M workflow.

13.6.1.1.3.4. **(Added-AFMC)** When FOD is discovered on a transient aircraft, depot input/output, Engine Regional Repair Center (ERRC), or Centralized Repair Facility (CRF) engine, the Complex/Wing/Center FOD Prevention Program Manager shall notify the owning organization within 24 hours. An informational copy of the FOD report must be provided to the owning organization's safety office/FOD monitor to ensure compliance with AFI 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.

13.6.1.1.3.5. **(Added-AFMC)** For depot input/output, ERRC, or CRF engine: If FOD is found during the receiving inspection at one of the aforementioned locations, it shall be tracked/charged (if necessary) to the owning MAJCOM unit. If discovered any other time at one of the aforementioned locations, it shall be tracked/charged to the ALC, ERRC, or CRF.

13.6.1.1.4. **(Added-AFMC)** Input the data from the Complex/Wing/Center FOD reports into the FOD tracking tool and provide reports to the HQ AFMC/A4 when requested.

13.6.1.2. **(Added-AFMC)** AFSC shall:

13.6.1.2.1. **(Added-AFMC)** Assign a FOD Prevention Program Manager.

13.6.1.2.2. **(Added-AFMC)** Develop, implement, and maintain detailed guidance and procedures to supplement the Command FOD Prevention Program. Directives shall outline organizational responsibilities for flight lines, runways, taxiways, parking ramps, and outside maintenance areas that are shared with the ABW and tenant units. As a minimum, the FOD Prevention Program must address the following:

13.6.1.2.2.1. **(Added-AFMC)** Capping and plugging all openings, ports, lines, hoses, electrical connections, and ducts on aircraft, engines, munitions, missiles, drones, space systems, support equipment, AGE, trainers, or components to prevent FOs from entering these systems.

13.6.1.2.2.2. **(Added-AFMC)** Protecting engine intakes prior to performing maintenance.

13.6.1.2.2.3. **(Added-AFMC)** A standardized flightline clothing policy to include the wearing of hats, berets, wigs, hairpieces, badges, jewelry, passes, etc. aimed at FOD prevention.

13.6.1.2.2.4. **(Added-AFMC)** Escorts of visiting personnel shall ensure FOD prevention measures are taken and brief visitors IAW locally developed checklist.

13.6.1.2.2.5. **(Added-AFMC)** Process procedures for control of work order residue.

13.6.1.2.2.6. **(Added-AFMC)** Pilots and aircrew members must account for all equipment and personal items after each flight and ensure any items that become lost during flight are documented in the aircraft AFTO Form 781A.

13.6.1.2.2.7. **(Added-AFMC)** FOD walks/sweeps are mandatory within areas designated as FO critical areas. Local OIs shall outline frequency and areas of responsibility.

13.6.1.2.3. **(Added-AFMC)** Develop and implement a FOD awareness and prevention training program. For additional guidance, reference AFI 36-2650.

13.6.1.2.4. **(Added-AFMC)** Investigate each FOD incident to determine the precise cause and ensure positive corrective action is accomplished.

13.6.1.2.5. **(Added-AFMC)** Follow Command FOD incident reporting procedures.

13.6.1.2.6. **(Added-AFMC)** Develop, implement, and maintain standardized procedures to collect FOD incident reports from tenant organizations.

13.6.2. Additional FOD Prevention Program Requirements. FOD incidents are classified as preventable and non-preventable. Only preventable FOD over \$50K (parts and labor) shall be chargeable to the FOD rate.

13.6.2.1. FODs are considered preventable except when:

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

13.6.2.1.2. Caused by internal engine materiel failure, as long as damage is confined to the engine.

13.6.2.1.3. Caused by materiel failure of an aircraft component if the component failure is reported as a deficiency report (DR) using the combined mishap DR reporting procedures of AFI 91-204 and TO 00-35D-54.

13.6.2.1.4. Found during depot overhaul for maximum operating time.

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

13.6.2.3. FOD rates shall be computed by MDS as follows: Number of Preventable FODs (damage exceeding \$50K) ÷ Aircraft flying hours X 1,000 = FOD rate. Aircraft flying hours shall be computed using acceptance flights, functional check flights, ground runs, and the number of un-installed engine test cell starts.

13.6.2.4. Bird Strikes. Consult TO 1-1-691, *Cleaning and Corrosion Prevention and Control, Aerospace and Non-Aerospace Equipment*, for bird strike clean up procedures and AFMAN 91-223 for bird strike reporting procedures.

13.7. Communications. Effective maintenance requires efficient communication. Radios must be available to expedite personnel, equipment, material, and maintenance data throughout the

maintenance complex. Unit commanders shall develop communication plans according to mission requirements.

13.7.1. Land Mobile Radio (LMR) Management. Maintenance communications that are reliable, redundant, and effective are essential for efficient maintenance operations.

13.7.1.1. AFMC/CC shall develop a program for LMR management IAW AFMAN 23-110, AFI 33-106, *Managing High Frequency Radios, Personal Wireless Communication Systems, and the Military Affiliate Radio System*, AFI 33-118, *Electromagnetic Spectrum Management*, and AFI 33-200, *Information Assurance (IA) Management*. At a minimum, the programs shall address training, allowances, control, and etiquette.

13.7.1.1.1. (AFMC) AFSC shall develop, implement, and maintain a standardized LMR management program.

13.7.2. Personal Devices. AFMC/CC shall develop guidance on the use and proper control of personal electronic and communication devices (i.e., cell phones, pagers, portable music/video players, electronic games, etc.) on the flightline and in munitions areas, hangars, and/or other industrial work areas.

13.7.2. (AFMC) **Personal Devices.** AFSC shall develop, implement, and maintain standardized procedures for the proper use and control of personal electronic and communication devices (e.g., cell phones, pagers, portable music/video players, electronic games, etc.) on the flightline and in munitions areas, hangars, and/or other industrial work areas.

13.8. Maintenance Recovery Teams (MRTs). MRTs and equipment are used to recover aircraft at remote locations. AFMC/CC shall develop procedures regarding the use of MRTs.

13.9. Self-Inspection Program. The purpose of the unit self-inspection program is to provide commanders and supervisors a management tool to assess unit compliance with existing directives. The unit self-inspection program shall be tailored to the organization's structure and mission and provide coverage of the mission, resources, training, and people programs. The self-inspection program is an on-going process implemented at all organizational levels.

13.9.1. AFMC/CC shall establish standardized program guidelines IAW AFI 90-201, *Inspector General Activities*, which, at a minimum, address procedures for reporting, tracking, and resolution, including feedback mechanisms. A reporting process shall be established to ensure non-compliance items are tracked until resolved. The self-inspection program not only enables units to gauge compliance with directives, but also provides a method to assess established processes, identify deficiencies, and implement corrective measures.

13.9.1. (AFMC) AFSC shall develop, implement, and maintain a standardized self-assessment program IAW AFI 90-201.

13.10. Senior Leaders' Maintenance Course (SLMC). The AF SLMC is an AF Chief of Staff initiative developed to educate wing leadership on aircraft maintenance, operations, and flightline support in both expeditionary and home station environments. Its objectives include: strengthen the relationship and teamwork between operations, maintenance, and support; deepen insight into unit operations, maintenance, and support activities; and focus attention on policy,

procedures, training, discipline, and enforcement. SLMC implementation instructions are as follows:

13.10.1. The course is mandatory for Wing and Group CC/CV/CD, and it must be completed within six months of assignment.

13.10.2. AFMC/CV must approve attendance waivers.

13.11. Maintenance Training. AFMC shall develop a Depot Maintenance training program to include and identify initial, recurring, and qualification training required by personnel to perform assigned duties. All training shall be documented in an MIS as validation of completion of training. Training is essential to establish, improve, and sustain unit capabilities and is one of the most important responsibilities of commanders and supervisors. Commanders and supervisors must give priority support to training. When balancing resources, (e.g., aircraft, support equipment, facilities, tools, funding, personnel, etc.), maintenance training carries an equal priority with the production workload.

13.11.1. **(Added-AFMC)** The AFMC depot maintenance training program shall be accomplished IAW AFI 36-2232 AFMC Supplement.

13.11.2. **(Added-AFMC)** AFMC shall establish and chair a Maintenance Training and PAC Working Group that:

13.11.2.1. **(Added-AFMC)** Includes representation from HQ AFMC/A1, ALC Maintenance Training Managers, Complex PAC Program Managers, Complex CTP Managers, and other representatives as required.

13.11.2.2. **(Added-AFMC)** Advises HQ AFMC/A4 on depot maintenance training and PAC issues.

13.11.2.3. **(Added-AFMC)** Resolves depot maintenance training, PAC, and SSQ related problems.

13.11.2.4. **(Added-AFMC)** Proposes standardization of depot maintenance training PAC and SSQ activities.

13.11.2.5. **(Added-AFMC)** Establishes procedural guidance for implementation of this supplement and HQ AFMC/A4 depot maintenance training PAC and SSQ initiatives.

13.11.2.6. **(Added-AFMC)** Processes revisions to this supplement and input on all other directives that impact depot maintenance training, PAC, and SSQ Programs.

13.11.2.7. **(Added-AFMC)** Recommends Lead Maintenance Complex assignments for AFMC command SSQs.

13.11.3. **(Added-AFMC)** The AFSC shall utilize standardized Command developed training courses.

13.12. Maintenance Certification Program. AFMC/CC shall develop a program to document the certification of employees, both civilians and military, to perform depot maintenance and accept/stamp completion of assigned work. This program shall apply to all depot maintenance personnel certifying WCDs. In this program, tasks shall be identified with required training and any other applicable qualification requirements that must be completed prior to task certification. Specific career field/series training shall be identified using AF approved CFETPs or equivalent

command civilian training plans. Criteria must be established to decertify and recertify employees as required.

13.12.1. The definition of a task for the purpose of this program is any necessary activity in the completion of an industrial process or procedure involving a product or product-related service. The tasks must be identifiable, trainable, and auditable.

13.12.2. All tasks and required training shall be documented in an electronic database as validation of completion of certification requirements and proof of an employee's certification.

13.12.3. As a minimum, an annual review of the employee's certification records shall be conducted with the employee by the employee's supervisor.

13.12.4. WCDs may only be stamped by personnel meeting the certification requirements of the program as specified in AF CFETP or equivalent command civilian training plan. If the series of work does not have an established command training plan, the center training manager shall develop one. A certified employee shall be issued an indentifying stamp and use the stamp on the WCD upon completion of the work validating that work performed meets all applicable requirements.

13.12.5. When work is identified as "critical" then a secondary certification or "second set of eyes" is required to verify the work completed has met the requirements. To determine if a task is critical, the following criteria shall be used:

13.12.5.1. A catastrophic failure of an end item (end item failure that could result in a catastrophe).

13.12.5.2. An end item failure that may affect safety of flight.

13.12.5.3. An end item failure that may present an imminent safety or health hazard or affect a life support system.

13.12.6. **(Added-AFMC) Production Acceptance Certification (PAC) Program.** The PAC Program documents employee certification to perform and accept completion of assigned work. The PAC program applies to all depot maintenance personnel certifying WCDs.

13.12.6.1. **(Added-AFMC)** AFMC shall:

13.12.6.1.1. **(Added-AFMC)** Develop, implement, and maintain standardized policy for the depot maintenance PAC Program.

13.12.6.1.2. **(Added-AFMC)** Develop, implement, and maintain the Training Scheduling System-Production Acceptance Certification (TSS-PAC) MIS.

13.12.6.1.2.1. **(Added-AFMC)** Documentation to track employees' PAC qualifications and certifications shall be maintained in TSS-PAC.

13.12.6.1.2.1.1. **(Added-AFMC)** External training certifications shall be transcribed into TSS-PAC using the transcription date and certified by supervisor and employee.

13.12.6.2. **(Added-AFMC)** AFSC shall:

13.12.6.2.1. **(Added-AFMC)** Develop, implement, and maintain standardized procedures to accomplish transcription tasks. Ensure compliance with depot maintenance PAC directives and policies.

13.12.6.2.2. **(Added-AFMC)** Ensure PACs meet all technical data, safety, and other applicable directives.

13.12.6.2.3. **(Added-AFMC)** Develop, implement, and maintain standardized procedures to ensure PAC tasks are reviewed in coordination with the WCD reviews. PAC Tasks will include a noun descriptor and performance statement. All PAC tasks shall be identifiable, trainable, and auditable.

13.12.6.2.3.1. **(Added-AFMC) Identifiable.** The task must identify the singular component or function being certified.

13.12.6.2.3.2. **(Added-AFMC) Trainable.** Trainable is defined as the ability to instruct an employee on a single task that provides the knowledge, skills, and competencies to successfully perform a function IAW the applicable technical data and other regulatory requirements.

13.12.6.2.3.3. **(Added-AFMC) Auditable.** The PAC task will provide a correlation to the WCD entry at the major task level and associated technical data.

13.12.6.2.3.4. **(Added-AFMC)** PAC tasks related only to reclamation, storage, and disposal actions (i.e., AMARG) can be written as logical process groups. AFSC shall develop, implement, and maintain standardized procedures to identify these unique tasks. All other tasks shall follow standard processes previously defined.

13.12.6.2.4. **(Added-AFMC)** Ensure PAC trained mechanics are assigned to the work control documents they are certified to perform and accept during non-parts supportability planning.

13.13. Special Skills Qualifications (SSQs). SSQs are skills so specialized that they require extensive technical knowledge and proficiency. Most of these skills are governed by military specifications or higher level regulatory guidance, are safety related, or have a significant impact on cost. AFMC/CC shall develop qualification/disqualification/requalification requirements for all SSQs.

13.13. (AFMC)AFSC shall:

13.13.1. **(Added-AFMC)** Develop, implement, and maintain standardized SSQs for common MDS across the ALCs.

13.13.2. **(Added-AFMC)** Ensure all SSQ waivers are submitted in writing through AFSC to AFMC for action.

13.13.3. **(Added-AFMC)** Develop, implement, and maintain procedures for the following mandatory SSQs:

13.13.3.1. **(Added-AFMC)** Aircraft Engine Run-up.

13.13.3.2. **(Added-AFMC)** Engine Test Cell Operation.

13.13.3.3. **(Added-AFMC)** Aircraft Towing.

- 13.13.3.4. (Added-AFMC) Airframe Jacking and Leveling.
- 13.13.3.5. (Added-AFMC) Explosive Devices.
- 13.13.3.6. (Added-AFMC) Refuel/Defuel Operations.
- 13.13.3.7. (Added-AFMC) Aircraft Cabin/Cockpit/Fuselage Pressurization.
- 13.13.3.8. (Added-AFMC) Aircraft Canopy Rigging.
- 13.13.3.9. (Added-AFMC) Flight Control Rigging.
- 13.13.3.10. (Added-AFMC) Aircraft Egress Systems.
- 13.13.3.11. (Added-AFMC) Fuel Cell Repair.
- 13.13.3.12. (Added-AFMC) Fiberglass Radome Repair.
- 13.13.3.13. (Added-AFMC) Parachute Repair and Packing.
- 13.13.3.14. (Added-AFMC) NDI.
- 13.13.3.15. (Added-AFMC) Soldering.
- 13.13.3.16. (Added-AFMC) Liquid and Gaseous Oxygen Handling and Equipment Maintenance.
- 13.13.3.17. (Added-AFMC) Selective Brush Plating.
- 13.13.3.18. (Added-AFMC) Temper Etching.
- 13.13.3.19. (Added-AFMC) Brazing.
- 13.13.3.20. (Added-AFMC) Welding.
- 13.13.3.21. (Added-AFMC) Thermal Spraying.
- 13.13.3.22. (Added-AFMC) Blade Blending.

13.13.4. (Added-AFMC) Develop, implement, and maintain procedures for Recurring Training Requirements (RTRs) specific to the work requirements and the following mandatory RTRs:

- 13.13.4.1. (Added-AFMC) Aircraft Egress Cockpit Familiarization.
- 13.13.4.2. (Added-AFMC) Aircraft Jet Engine Borescoping.
- 13.13.4.3. (Added-AFMC) Aircraft Jet Engine Inlet Inspection.
- 13.13.4.4. (Added-AFMC) Aircraft Marshaling.
- 13.13.4.5. (Added-AFMC) Confined Space.
- 13.13.4.6. (Added-AFMC) Weapons/Explosive Safety Training.

13.14. Special Certification Roster (SCR). The SCR is a management tool providing supervisors a clear and concise listing of personnel who have been appointed to perform, evaluate, and/or inspect work of a critical nature. Only maintenance requirements that have a definite potential for personnel injury or damage to equipment shall be included in the SCR. AFMC/CC shall develop procedures on approval of the following items:

13.14. (AFMC)AFSC shall: Develop, implement, and maintain standardized procedures on the following items:

13.14.1. Authority.

13.14.1.1. **(Added-AFMC)** SCR rosters will be approved at the Group level and maintained, at a minimum, by the Group Training Manager.

13.14.1.2. **(Added-AFMC)** Personnel identified on SCRs will meet all training and certifications required for the task appointed.

13.14.2. Exceptional Release.

13.14.3. W&B Certified (Reference TO 1-1B-50).

13.14.4. Impoundment Authority (Reference **Chapter 9** of this Instruction).

13.14.5. Calibration Limitation Approval (Reference TO 00-20-14).

13.14.6. **(Added-AFMC)** Red-X sign-off.

13.14.6.1. **(Added-AFMC)** This roster will identify those personnel authorized, as required, to certify Red-X items on aircraft/equipment forms. Red-X sign-off does not apply to WCDs.

13.15. Functional Check Flight (FCF) Program.

13.15.1. FCFs are performed to ensure an aircraft is airworthy and/or capable of accomplishing its mission. FCFs are not normally flown when the airworthiness of the aircraft can be determined by maintenance operational checks prescribed by a technical directive. Additional guidance may be found in AFI 11-401, *Aviation Management*, AFI 11-202V3, *General Flight Rules*, AFI 13-201, *Airspace Management*, AFI 21-103, TO 1-1-300, *Maintenance Operational Checks and Check Flights*, TO 00-20-1, and applicable Dash-6 and Dash-1 TOs.

13.15.1.1. **(Added-AFMC)** Flying hours and installed engine event history recorder readings for all FCFs shall be updated in REMIS NLT the next duty day after occurrence IAW AFI 21-103. **(T-1)**.

13.15.2. AFMC/CC shall establish procedures governing the FCF Program.

13.15.2. **(AFMC)** AFSC shall develop, implement, and maintain standardized procedures governing the FCF Program. The program is managed by the applicable production squadron and flight test organization. AFSC will ensure:

13.15.2.1. **(Added-AFMC)** A FCF Program Manager is designated at each Complex or geographically separated Group. As a minimum, the FCF Program Manager will:

13.15.2.1.1. **(Added-AFMC)** Establish local FCF procedures and checklists for specific local aircraft requirements.

13.15.2.1.2. **(Added-AFMC)** Develop and analyze FCF metrics for trends to identify potential process, quality, and efficiency issues. Identify deficient areas which may require further analysis or corrective action. Ensure FCF reports are sent to QA for further reporting, analysis, and surveillance considerations.

13.15.2.1.3. **(Added-AFMC)** Coordinate with the appropriate squadron for a FCF pilot/aircrew and provide squadron operations with the aircraft tail number, reason for the FCF, and anticipated takeoff time.

13.15.2.1.4. **(Added-AFMC)** Maintain an information file for briefing aircrews. As a minimum, this file must contain directives concerning FCF procedures, authorization lists for FCF crews, and FCF checklist for each MDS assigned.

13.15.2.1.4.1. **(Added-AFMC)** A FCF checklist must be used for each FCF. Each discrepancy discovered during the FCF must be documented on AFTO Form 781A. After completing the review, the checklist must be included in the aircraft jacket file.

13.15.2.1.5. **(Added-AFMC)** Maintain a copy of the AF Form 2400, *Functional Check Flight Log*, or equivalent automated product for deficiency and trend analysis.

13.15.2.1.6. **(Added-AFMC)** Ensure all maintenance actions are completed and all AFTO Form 781s are documented IAW Dash-6 and 00-series TOs. **(T-1)**.

13.16. Weight and Balance (W&B) Program. AFMC shall manage a W&B program IAW TO 1-1B-50, *Basic Technical Order for USAF Aircraft Weight and Balance*.

13.16. (AFMC)AFSC shall: Develop, implement, and maintain standardized procedures governing the W&B program.

13.17. Aircraft Structural Integrity Program (ASIP). AFMC shall manage an ASIP program IAW AFI 63-1001, *Aircraft Structural Integrity Program*.

13.17. (AFMC)AFSC shall: Assist in the development, implementation, and maintenance of standardized procedures governing the ASIP.

13.18. Repair Network Integration (RNI) [RESERVED].

13.18. (AFMC)Repair Network Integration (RNI). For RNI policy, reference AFI 20-117, *Repair Network Integration (RNI)*.

13.19. (Added-AFMC) Engine Management.

13.19.1. **(Added-AFMC)** AFSC shall:

13.19.1.1. **(Added-AFMC)** Develop, implement, and maintain a standardized engine management program in IAW AFI 20-115 and TO 00-25-254-1. **(T-1)**.

13.19.1.2. **(Added-AFMC)** Coordinate engine management processes, procedures, and OIs with HQ AFMC/A4M Command Engine Manager prior to publication.

13.19.1.3. **(Added-AFMC)** 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. **(T-1)**.

13.19.1.4. **(Added-AFMC)** Ensure an Engine Management OI is developed to include each engine SRAN to address engine inventory control and management procedures. As a minimum, procedures must:

13.19.1.4.1. **(Added-AFMC)** Specify responsibilities of affected work centers for accurate and timely MIS and Comprehensive Engine Management System (CEMS)

reporting of Time Compliance Technical Orders (TCTOs), SIs, Time Change Items (TCIs), and other documentation requirements (e.g., borescope inspections, blade blending, and CANN actions).

13.19.1.4.2. **(Added-AFMC)** Ensure engine, module, and component data is reported to SRAN Engine Manager IAW TO 00-25-254-1 (e.g., part removal, installation, time update, and TCTO status change). **(T-1)**.

13.19.1.4.3. **(Added-AFMC)** Ensure aircraft, engine records, MIS and CEMS database reconciliation occurs after maintenance actions are complete and prior to aircraft, engine and/or life-limited serially tracked component leaving the overhaul repair facility.

13.19.1.4.4. **(Added-AFMC)** Specify responsibilities and procedures for Engine Health Management (EHM) and Engine Trending and Diagnostics (ET&D) IAW AFI 20-115. **(T-1)**.

13.19.1.4.5. **(Added-AFMC)** 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.

13.19.1.5. **(Added-AFMC)** 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 20-115 and TO 00-25-254-1. **(T-1)**.

13.19.1.6. **(Added-AFMC)** Ensure SRAN Engine Managers attend the AETC Engine Management Training Course prior to assuming duties.

13.19.1.6.1. **(Added-AFMC)** 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.

13.19.2. **(Added-AFMC)** The SRAN Engine Manager will:

13.19.2.1. **(Added-AFMC)** Act as the single point of contact between the ALC and Command Engine Manager for SRAN Engine Management issues/concerns.

13.19.2.2. **(Added-AFMC)** Comply with AFI 20-115, TO 00-25-254-1, and all other applicable instructions and technical data. **(T-1)**

13.19.2.3. **(Added-AFMC)** Ensure all engine/module inspections/TCIs tracked by Engine Operating Time (EOT), Calculated Cycles (CCY), Total Accumulated Cycles (TAC), etc. are loaded/tracked in CEMS.

13.19.2.4. **(Added-AFMC)** Provide TCI information (cycles remaining, EOT, etc.) on serially controlled items to propulsion maintenance for engine and engine component cannibalization actions.

13.19.2.5. **(Added-AFMC)** Manage time changes on all engines and “life-limited and serially tracked” components.

13.19.2.6. **(Added-AFMC)** Ensure all engine SIs are loaded in MIS against the engine, not the aircraft.

13.19.2.7. **(Added-AFMC)** Manage/monitor the Complex/Wing/Center ET&D and EHM programs when applicable.

13.19.2.8. **(Added-AFMC)** Ensure duties and requirements for engine shipments, protection, and storage are performed IAW AFPD 24-2, *Preparation and Movement of AF Materiel*, AFI 20-115, 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*. **(T-1)**.

13.19.2.9. **(Added-AFMC)** Maintain a jacket file of engine shipping documents IAW AFI 33-322, *Records Management Program*. **(T-1)**.

13.19.2.10. **(Added-AFMC)** Maintain and update historical documents for all assigned engines, modules, and major assemblies in the MIS IAW TO 00-20-1, *Aerospace Equipment Maintenance General Policy and Procedures*. **(T-1)**.

13.20. (Added-AFMC) Maintenance Operations Center (MOC). AFSC shall develop, implement, and maintain standardized MOC processes and procedures to:

13.20.1. **(Added-AFMC)** Ensure Maintenance Debrief enters all flying hours information into REMIS IAW AFI 21-103.

13.20.2. **(Added-AFMC)** Monitor the progress of aircraft FCFs.

13.20.3. **(Added-AFMC)** Develop, implement, and maintain checklists for use during actions such as an aircraft mishap, flightline fire, severe weather warning or evacuation, runway closure, or any other unusual circumstances deemed necessary.

13.20.4. **(Added-AFMC)** Notify flightline supervision and/or Post Dock supervision of OAP code C and E conditions IAW AFI 21-124. **(T-1)**.

13.21. (Added-AFMC) Depot Field Team (DFT). AFSC shall implement and maintain a DFT program.

13.21.1. **(Added-AFMC)** The DFT Chief will complete and utilize AFMC Form 195, *Depot Field Team TDY Work Project Summary and Release*, upon completion of Temporary Duty (TDY).

13.22. (Added-AFMC) Aerospace Vehicle Distribution Officer (AVDO). AFSC shall appoint an AVDO to ensure aircraft status is properly reported and maintained IAW AFI 21-103 and AFI 16-402. **(T-1)**.

13.22.1. **(Added-AFMC)** AVDOs shall report all assignment/possession changes to the HQ AFMC/A3 Aircraft Fleet Manager.

13.23. (Added-AFMC) Test Cells and Hush Houses. AFSC shall ensure the ALCs assign a primary and alternate custodian that will establish an account and utilize the Reliability and Maintainability of Pods (RAMPOD) system for TO 00-25-107 reporting and status updates. Engineering support requests and any changes in the status of test cell and hush house equipment shall be reported using the RAMPOD system.

13.24. (Added-AFMC) Aircraft Battle Damage Repair (ABDR). The ABDR program enhances the wartime repair capability of Aircraft Maintenance Units (AMUs). ABDR is an effective force multiplier contributing to wartime sortie production by assessing and repairing damaged aircraft rapidly to support flying operations. ABDR repairs will be accomplished during contingency or wartime only. However, system program managers may approve ABDR repairs during peacetime on a case-by-case basis.

13.24.1. **(Added-AFMC)** AFSC shall have program management responsibility for the ABDR program. For additional guidance, reference AFMCI 10-202, *Aircraft Battle Damage Repair Forces*.

13.25. (Added-AFMC) Commercial Calibration Services. For commercial calibration guidance, refer to TO 00-20-14. **(T-1)**.

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

- Title 10, United States Code § 2460, *Definition of depot-level maintenance and repair*
- Title 10, United States Code § 2464, *Core logistics capabilities*
- Title 10, United States Code § 2466, *Limitations on the performance of depot-level maintenance of materiel*
- Title 10, United States Code § 2469, *Contracts to perform workloads previously performed by depot-level activities of the Department of Defense: requirement of competition*
- Title 10, United States Code § 2472, *Prohibition on management of depot employees by end strength*
- Title 10, United States Code § 2474, *Centers of Industrial and Technical Excellence: designation; public-private partnership*
- Title 10, United States Code § 2476, *Minimum capital investment for certain depots*
- Title 14, Code of Federal Regulations, Part 145, *Repair Stations*
- DoDI 4151.20, *Depot Maintenance Core Capabilities Determination Process*, 5 January 2007
- DoDI 4151.21, *Public-Private Partnerships for Depot-Level Maintenance*, 25 April 2007
- DoD 4151.18-H, *Depot Maintenance Capacity and Utilization Measurement Handbook*, 10 March 2007
- DoD 7000.14-R, *Department of Defense Financial Management Regulation*, 17 November 2011
- AFH 32-1084, *Facility Requirement*, 1 September 1996
- AFPD 13-5, *Air Force Nuclear Enterprise*, 6 July 2011
- AFPD 16-2, *Disclosure of Military Information to Foreign Governments and International Organizations*, 10 September 1993
- AFPD 21-1, *Air and Space Maintenance*, 25 February 2003
- AFPD 62-6, *USAF Airworthiness*, 11 June 2010
- AFPD 63-1/20-1, *Acquisition and Sustainment Life Cycle Management*, 3 April 2009
- AFPD 90-8, *Environment, Safety, and Occupational Health*, 1 September 2004
- AFI 10-229, *Responding to Severe Weather Events*, 15 October 2003
- AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*, 24 June 2007
- AFI 11-202V3, *General Flight Rules*, 22 October 2010
- AFI 11-209, *Aerial Event Policy and Procedures*, 4 May 2006
- AFI 11-401, *Aviation Management*, 10 December 2010

AFI 13-201, *Airspace Management*, 1 December 2006

AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination*, 1 December 2009

AFI 20-110, *Nuclear Weapons-Related Materiel Management*, 18 February 2011

AFI 20-111, *Logistics Compliance Assessment Program (LCAP)*, 19 April 2011

AFI 20-115, *Propulsion Management for Aerial Vehicles*, 12 January 2012

AFI 21-101, *Aircraft and Equipment Maintenance Management*, 26 July 2010

AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*, 9 April 2010

AFI 21-113, *Air Force Metrology and Calibration (AFMETCAL) Management*, 23 March 2011

AFI 21-118, *Improving Air and Space Equipment Reliability and Maintainability*, 2 October 2003

AFI 21-124, *Oil Analysis Program*, 8 December 2010

AFI 21-204, *Nuclear Weapons Maintenance Procedures*, 30 November 2009

AFI 24-301, *Vehicle Operations*, 1 November 2008

AFI 32-7042, *Waste Management*, 15 April 2009

AFI 32-7080, *Pollution Prevention Program*, 12 May 1994

AFI 32-7086, *Hazardous Materials Management*, 1 November 2004

AFI 33-106, *Managing High Frequency Radios, Personal Wireless Communication Systems and the Military Affiliate Radio System*, 9 January 2002

AFI 33-118, *Electromagnetic Spectrum Management*, 18 July 2005

AFI 33-200, *Information Assurance (IA) Management*, 23 December 2008

AFI 36-2201, *Air Force Training Program*, 15 September 2010

AFI 38-203, *Commercial Activities Program*, 20 June 2008

AFI 63-101, *Acquisition and Sustainment Life Cycle Management*, 8 April 2009

AFI 63-131, *Modification Program Management*, 6 November 2009

AFI 63-1001, *Aircraft Structural Integrity Program*, 18 April 2002

AFI 65-503, *US Air Force Cost and Planning Factors*, 4 February 1994

AFI 90-201, *Inspector General Activities*, 17 June 2009

AFI 91-202, *The US Air Force Mishap Prevention Program*, 5 August 2011

AFI 91-101, *Air Force Nuclear Weapons Surety Program*, 13 October 2010

AFI 91-107, *Design, Evaluation, Troubleshooting, and Maintenance Criteria for Nuclear Weapon Systems*, 26 January 2011

AFI 91-204, *Safety Investigations and Reports*, 24 September 2008

AFI 91-302, *Air Force Occupational, and Environmental Safety, Fire Protection, and Health (AFOSH) Standards*, 18 April 1994

AFMAN 10-2504, *Air Force Incident Management Guidance for Major Accidents and Natural Disasters*, 1 December 2009

AFMAN 23-110, *USAF Supply Manual*, 1 April 2009

AFMAN 33-363, *Management of Records*, 1 March 2008

AFMAN 91-201, *Explosives Safety Standards*, 12 January 2011

AFMAN 91-221, *Weapons Safety Investigations and Reports*, 8 November 2010

AFMAN 91-223, *Aviation Safety Investigations and Reports*, 6 July 2004

AFOSHSTD 48-9, *Radio Frequency Radiation (RFR) Safety Program*, 1 August 1997

AFOSHSTD 91-100, *Aircraft Flight Line – Ground Operations and Activities*, 1 May 1998

AFOSHSTD 91-501, *Air Force Consolidated Occupational Safety Standard*, 7 July 2004

AFMCI 21-130, *Depot Maintenance Materiel Control*, 15 November 2007.

TO 00-5-1, *AF Technical Order System*, 1 May 2011

TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*, 15 June 2011

TO 00-20-2, *Maintenance Data Documentation*, 1 September 2010

TO 00-20-3, *Maintenance Processing of Reparable Property and the Repair Cycle Asset Control System*, 1 November 2008

TO 00-20-14, *Air Force Metrology and Calibration Program*, 30 September 2011

TO 00-25-4, *Depot Maintenance of Aerospace Vehicles and Training Equipment*, 15 August 2011

TO 00-25-107, *Maintenance Assistance*, 15 August 2011

TO 00-25-108, *Communications-Electronics Depot Support*, 5 May 2003.

TO 00-25-113, *Conservation and Segregation of Critical Alloy and Precious Metal Bearing Parts and Scrap*, 30 April 1995

TO 00-25-252, *Aeronautical Equipment Welding*, 1 September 2009

TO 00-25-254-1, *Comprehensive Engine Management System Engine Configuration, Status and TCTO Reporting Procedures*, 1 May 2007

TO 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution*, 1 October 2009

TO 00-110A-1, *Guidelines for Identification and Handling of Aircraft and Material Contaminated with Radioactive Debris*, 31 March 2002

TO 1-1-3, *Inspection and Repair of Aircraft Integral Tanks and Fuel Cells*, 25 August 2011

TO 1-1B-50, *Basic Technical Order for USAF Aircraft Weight and Balance*, 1 April 2008

TO 1-1-300, *Maintenance Operational Checks and Check Flights*, 14 November 2007

TO 1-1-686, *Desert Storage, Preservation and Process Manual for Aircraft, Aircraft Engines, and Aircraft Auxiliary Power Unit Engines*, 21 January 2012

TO 1-1-691, *Cleaning and Corrosion Prevention and Control, Aerospace and Non-Aerospace Equipment*, 14 March 2011

Prescribed Forms

None.

Adopted Forms

AF Form 2047, *Explosive Facility License*

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

AFTO Form 244, *Industrial/Support Equipment Record*

AF Form 847, *Recommendation for Change of Publication*

AF Form 185, *Project Order*

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

Abbreviations and Acronyms

ABIDES—Automated Budget Interactive Data Environment System

AETC—Air Education and Training Command

AF—Air Force

AFEE—Air Force Element of Expense

AFEE/IC—Air Force Element of Expense/Investment Code

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFMETCAL—Air Force Metrology and Calibration

AFMC—Air Force Materiel Command

AFPD—Air Force Policy Directive

AFOSH—Air Force Occupational Safety and Health

AFOSHSTD—Air Force Occupational Safety and Health Standard

AFRC—Air Force Reserve Command

AFTO—Air Force Technical Order

AGE—Aerospace Ground Equipment

AIS—Automated Information System

AIT—Automatic Identification Technology

ALC—Air Logistics Center

AMARG—Aircraft Maintenance and Regeneration Group

ANG—Air National Guard

APPG—Annual Planning and Programming Guidance

AQL—Acceptable Quality Level

AS—Aerospace Standard

BA—Budget Authority

BER—Budget Execution Review

BPP—Business-Planning Process

CA/CRL—Custodian Authorization and Custody Receipt Listing

CAD/PAD—Cartridge Actuated Device/Propellant Actuated Device (CAD/PAD)

CAM—Centralized Asset Management

CANN—Cannibalization

CDM—Contract Depot Maintenance

CFETP—Career Field Education and Training Plan

CFT—Contract Field Team

CFR—Code of Federal Regulation

CITE—Center of Industrial and Technical Excellence

CLS—Contract Logistics Support

CONUS—Continental United States

CPP—Capital Purchases Program

CRA—Continuing Resolution Authority

CSAG—Maintenance—Consolidated Sustainment Activity Group-Maintenance Divisions

CSAG—Supply—Consolidated Sustainment Activity Group-Supply Divisions

CTK/TK—Consolidated Took Kit/Tool Kit

DMISA—Depot Maintenance Interservice Support Agreement

DMAG—Depot Maintenance Activation Group

DMMP—Depot Maintenance Master Plan

DMSMS—Diminishing Manufacturing Sources and Material Shortages

DoD—Department of Defense

DoDEE—Department of Defense Element of Expense

DoDI—Department of Defense Instruction

DOP—Dropped Object Prevention

DR—Deficiency Report

DPEM—Depot Purchased Equipment Maintenance
DSOR—Depot Source of Repair
FAA—Federal Aviation Administration
FCF—Functional Check Flight
F&FP—Force and Financial Plan
FO—Foreign Object
FOD—Foreign Object Damage
FY—Fiscal Year
FYDP—Future Years Defense Plan
HAF—Headquarters Air Force
HC/D—Hazard Class Division
IA—Information Assurance
IAW—In Accordance With
ID—Identification
ILCM—EF—Integrated Life Cycle Management Executive Forum
IUID—Item Unique Identification
ISO—International Organization for Standardization
ITK—Individual Tool Kit
LCAP—Logistics Compliance Assessment Program
LCAT—Logistics Compliance Assessment Team
LMR—Land Mobile Radio
MAJCOM—Major Command
MDS—Mission-Design Series
MIS—Maintenance Information Systems
MRWP—Maintenance Requirements Work Package
MRT—Maintenance Recovery Team
MSD—Materiel Support Division
MSEP—Maintenance Standardization and Evaluation Program
NADCAP—National Aerospace and Defense Contractors Accreditation Program
NCE—Nuclear Certified Equipment
NDI—Nondestructive Inspection
NEW—Net Explosive Weight

NWRM—Nuclear Weapons Related Materiel
O&M—Operations and Maintenance
OA—Obligational Authority
OAP—Oil Analysis Program
OBA—Operating Budget Authority
OI—Operating Instruction
OMB—Office of Management and Budget
OMEI—Other Major Equipment Item
OPR—Office of Primary Responsibility
OSD—Office of the Secretary of Defense
OTI—One-Time Inspection
PA—Program Authority
PB—President’s Budget
PBD—Program Budget Decision
PBR—Program Budget Review
PCN—Program Control Number
PDM—Programmed Depot Maintenance
PE—Program Element
PGM—Product Group Manager
PM—Program Manager
PMEL—Precision Measurement Equipment Laboratory
POM—Program Objectives Memorandum
PPBE—Planning, Programming, Budgeting and Execution
PPE—Personal Protective Equipment
PPP—Public-Private Partnership
PSC—Production Support Center
PSM—Product Support Manager
QA—Quality Assurance
QDR—Quadrennial Defense Review
RAPIDS—Resource Allocation Programming Information Decision System
RDS—Records Disposition Schedule
RDT&E—Research, Development, Test and Engineering

REMIS—Reliability and Availability Information System

RFID—Radio Frequency Identification

RFR—Radio Frequency Radiation

RGC—Repair Group Category

RNI—Repair Network Integration

SCR—Special Certification Roster

SE—Support Equipment

SECAF—Secretary of the Air Force

SIM—Serialized Item Management

SLMC—Senior Leaders Maintenance Course

SRAN—Stock Record Account Number

SSQ—Special Skills Qualification

STC—Supplemental Type Certificate

TK—Tool Kit

TO—Technical Order

TPS—Test Program Set

UEM—Unit Engine Manager

USAF—United States Air Force

USC—United States Code

W&B—Weight and Balance

WCD—Work Control Document

Terms

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

Clecos—A quick-release, industrial fastener used for holding sheet metal to facilitate welding or riveting.

Compression—Maximize depot maintenance production delivery through acceleration as well as suspension of routine peacetime work package tasks accomplishing only the absolute minimum depot maintenance essential to the safety of flight and only modifications essential to the weapon's war mission configuration.

Compression work package—The minimum depot maintenance tasks or modifications essential to the weapon's war mission configuration.

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.

Corrosion Control Facility—A facility where activities are conducted to treat, prevent or repair corrosion control for aircraft or associated components and equipment; these activities may include wash, treatment, repair, stripping, and repainting processes. Corrosion control shops also support vehicles, weapons and munitions, and avionics shops. Additionally, it provides space for the corrosion control shop which includes preparation and drying areas, abrasive blasting rooms, paint booths for mixing and/or applying paint, tool storage, lockers, and administrative areas.

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.

Depot maintenance capability—The aggregation of all resources (including facilities, skilled personnel, tools, test equipment, drawings, technical publications, ongoing training, maintenance personnel, engineering support, and spare parts) required for performing depot level maintenance.

Maintenance Requirements Work Package—The MRWP is a sectionalized requirements document developed to identify the depot level maintenance tasks required to maintain AF systems in mission ready status. MRWPs are prepared at least two years prior to the execution year. Requirements are based on need and not on the availability of funds.

Manufacturing—The making of something, normally from raw materials, by hand or, especially, by machinery, often on a large scale and with division of labor.

Mobilization—The act of assembling and organizing national resources to support national objectives in time of war or other emergencies.

National technology and industrial base—The persons and organizations that are engaged in research, development, production, or maintenance activities conducted within the United States and Canada.

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.

Public—private partnership—An agreement between an organic depot maintenance activity and one or more private industry or other entities to perform work or utilize facilities and equipment. Program offices, inventory control points and logistics commands may be parties to such agreements or be designated to act on behalf of organic depot maintenance activities.

Source of repair—An industrial complex (organic or commercial) with required technical capabilities to accomplish repair, overhaul, modification, or restoration of specific types of military hardware or software.

Surge—The act of expanding an existing repair depot maintenance repair capability to meet increased requirements by adjusting shifts or by adding equipment, spares, repair parts, and skilled personnel to increase the flow of repaired or manufactured materiel to the using activity or for serviceable storage.

Test program set—An interface that links a unit under test to the test equipment and a software program to initiate, maintain, and execute a test or series of automatic tests.

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 1 (AFMC)**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

TO 33-1-37-1, *Joint Oil Analysis Program Manual, Volume I, Introduction, Theory, Benefits, Customer Sampling Procedures, Programs And Reports*, 30 August 2013

TO 33-1-37-2, *Joint Oil Analysis Program Manual, Volume II, Spectrometric And Physical Test Laboratory Operating Requirements And Procedures*, 30 August 2013

TO 33-1-37-3, *Joint Oil Analysis Program Manual, Volume III, Laboratory Analytical Methodology And Equipment Criteria (Aeronautical)*, 30 August 2013

TO 33-1-37-4, *Joint Oil Analysis Program Manual, Volume IV, Laboratory Analytical Methodology And Equipment Criteria (Non-Aeronautical)*, 30 August 2013

AFPD 63-1/20-1, *Integrated Life Cycle Management*, 03 July 2012

AFI 10-206, *Operational Reporting*, 06 September 2011

AFI 20-110 AFMC Sup, *Nuclear Weapons-Related Materiel Management*, 19 July 2012

AFI 20-117, *Repair Network Integration (RNI)*, 08 March 2013

AFI 23-101, *Air Force Materiel Management*, 08 August 2013

AFI 23-111, *Management of Government Property in Possession of the Air Force*, 29 October 2013

AFI 24-203, *Preparation and Movement of Air Force Cargo*, 02 November 2010

AFI 24-302, *Vehicle Management*, 26 June 2012

AFI 32-1021, *Planning and Programming Military Construction (MILCON) Projects*, 14 June 2010

AFI 32-7001, *Environmental Management*, 04 November 2011

AFI 33-360, *Publications and Forms Management*, 25 September 2013

AFI 36-2201 AFMC Sup, *Air Force Training Program*, 18 August 2011

AFI 36-2232 AFMC Sup, *Maintenance Training*, 13 December 2010

AFI 36-2650, *Maintenance Training*, 20 May 2014

AFI 63-101/20-101, *Integrated Life Cycle Management*, 07 March 2013

AFI 63-138, *Acquisition of Services*, 21 May 2013

AFI 65-601V2, *Budget Management for Operations*, 18 May 2012

AFI 90-201 AFMC Sup, *The Air Force Inspection System*, 06 March 2014

AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*, 15 June 2012

AFJMAN 23-210, *Joint Service Manual (JSM) for Storage and Materials Handling*, 12 April 1994

AFMAN 23-122, *Materiel Management Procedures*, 08 August 2013

AFMCI 10-202, *Aircraft Battle Damage Repair Forces*, 30 August 2011

AFMCI 20-104, *Item Unique Identification*, 05 June 2014

AFMCI 21-141, *Contract Field Teams (CFT) Program*, 18 July 2008

AFMCI 21-149, *Contract Depot Maintenance (CDM) Program*, 04 March 2009

AFMCI 63-501, *AFMC Quality Assurance*, 14 December 2001

AFMCI 65-101, *Depot Maintenance Accounting and Production System-Financial Policy and Procedures for Organic Depot Maintenance*, 28 March 2006

Prescribed Forms

AFMC Form 74, *Nondestructive Inspection Personnel Qualification*

AFMC Form 95, *Issue Request*

AFMC Form 100, *Floating Stock/Spares Requirement and Justification*

AFMC Form 101, *Verification of Content Removal Tag*

AFMC Form 102, *Verification of Content Removal Label*

AFMC Form 105, *Workload Record*

AFMC Form 127, *Routed Order*

AFMC Form 130, *Production Asset Control Record*

AFMC Form 137, *Routed Order (Proj Dir)*

AFMC Form 173, *MDS/Project Operation Assignment*

AFMC Form 195, *Depot Field Team TDY Work Project Summary and Release*

AFMC Form 206, *Temporary Work Request*

AFMC Form 237, *Temporary Labor and Material Plan (G004L)*

AFMC Form 240, *Temporary Labor and Material Plan Addendum*

AFMC Form 304, *Service Order*

AFMC Form 305, *Plant Management Work Order*

AFMC Form 306, *Preventive Maintenance Instructions*

AFMC Form 307, *Temporary Loan Record*

AFMC Form 309, *AFMC Tool Control Inventory Record*

AFMC Form 311, *Certificate of Responsibility for Government Property*

AFMC Form 343, *Quality Assurance Assessment*

AFMC Form 355, *Operator Maintenance Certification*

AFMC Form 388, *Machine Tool and Equipment Historical Record*

AFMC Form 500, *Work Control Document Production Planning Team Checklist*

AFMC Form 501, *Request for Quote/Rough Order of Magnitude*

AFMC Form 502, *Post Dock Review Checklist*

AFMC Form 503, *AWP Checklist/Worksheet*

AFMC Form 561, *Process Order*

AFMC Form 600D, *Production Order*

AFMC Form 930, *G004L File Maintenance Transactions*

AFMC Form 957, *Work Control Document (WCD) Change Request*

AFMC Form 959, *Work Control Document*

Adopted Forms

AF Form 2400, *Functional Check Flight Log*

AFMC Form 40, *Foreign Object Damage Record*

AFMC Form 77, *Request for Quality Assistance (RQA)*

AFMC Form 310, *Lost/Found Item Report*

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

AFTO Form 245, *Industrial/Support Equipment Record (CONT.)*

Abbreviations and Acronyms

ABCS – Automated Budget Compilation System

ABDR –Aircraft Battle Damage Repair

ABW –Air Base Wing

AETC —Air Education and Training Command

AFLCMC –Air Force Life Cycle Management Center

AFNWC —Air Force Nuclear Weapons Center

AFMCI –Air Force Materiel Command Instruction

AFRIMS —Air Force Records Information Management System

AFSC –Air Force Sustainment Center

AFSPC —Air Force Space Command

AFTO —Air Force Technical Order

AFWA —Air Force Weather Agency

AI –Activity Inspection

ALC –Air Logistics Complex

AMR –Aircraft and Missile Requirement

AMU —Aircraft Maintenance Unit

AQL —Acceptable Quality Level
AS –Allowance Standards
ASIP –Aircraft Structural Integrity Program
AVDO –Aerospace Vehicle Distribution Officer
AWP –Awaiting Parts
BOM –Bill of Material
BOW –Bill of Work
CAFDEx –Centralized Access for Data Exchange
CA/CRL —Custodian Authorization/Custody Receipt Listing
CC –Commander
CCY —Calculated Cycles
CDDAR –Crash Damaged or Disabled Aircraft Recovery
CE –Civil Engineering
CEA –Cognizant Engineering Authority
CEMO –Command Equipment Management Office
CEMS —Comprehensive Engine Management System
CFT –Contract Field Team
CIP —Capital Investment Program
CLL —Continuous Learning Logistics
CMM –Commercial Maintenance Manual
COTS –Commercial Off the Shelf
CRF –Centralized Repair Facility
CSAG-M —Consolidated Sustainment Activity Group-Maintenance
CSAG-S —Consolidated Sustainment Activity Group-Supply
CSE —Common Support Equipment
CTP –Civilian Training Plan
DAU —Defense Acquisition University
DFT –Depot Field Team
DIFM –Due In From Maintenance
DLA –Defense Logistics Agency
DMAWG –Depot Maintenance Activation Working Group
DOTM –Due Out To Maintenance

DSV –Detected Safety Violation
DWCF –Defense Working Capital Fund
DWMS –DoD Work Methods and Standards
EHM —Engine Health Management
EIM –Enterprise Information Management
EOT —Engine Operating Time
EPE –Evaluator Proficiency Evaluation
ERRC –Engine Regional Repair Center
ERRC —Expendability, Recoverability, Reparability Category
ESOH —Environment, Safety, and Occupational Health
ET&D —Engine Trending and Diagnostics
FA –Functional Advocate
FAM –Functional Area Manager
FEMS –Facility and Equipment Maintenance System
FCF —Functional Check Flight
FO –Foreign Object
G&A –General & Administrative
GS –General Schedule
HSC —Home Station Check
IV –Isolated Violation
JDRS –Joint Discrepancy Reporting System
JON –Job Order Number
JPO —Joint Program Office
LRDP –Logistics Requirements Determination Process
MAPT –Maintenance Activation Planning Team
MI – Management Inspection
MICT –Management Internal Control Toolset
MILCON –Military Construction
MILE –Minuteman Integrated Life Extension
MOC –Maintenance Operations Center
MXSG –Maintenance Support Group
NLT –No Later Than

OC-ALC —Oklahoma City Air Logistics Complex
OFCO —Other Funded Customer Orders
PAC –Production Acceptance Certification
PAMS —PMEL Automated Management System
PDM —Programmed Depot Maintenance
PF&D –Personal, Fatigue, and Delay
PE –Personnel Evaluation
PII —Pre-Induction Inspection
PM —Program Manager
PO —Program Office
POC –Point of Contact
POH —Production Overhead
PPT –Production Planning Team
PSSB —Product Support Steering Board
QAP –Quality Assurance Plan
QAR –Quality Assessment Results
QAS –Quality Assurance Specialist
QASP –Quality Assurance Surveillance Plan
QAWG –Quality Assurance Working Group
QIMSS –Quality Information Management Standard System
QVI –Quality Verification Inspection
QVIQ –Quality Verification Inspection Q-Stamp
R2D2 –Requirements Review and Depot Determination
RAMPOD –Reliability and Maintainability of Pods
RCC –Resource Control Center
REMIS —Reliability and Maintainability Information Systems
RFQ –Request for Quote
RI –Routine Inspection
RIL –Routine Inspection List
RTR –Recurring Training Requirement
SCMS –Supply Chain Management Squadron
SI –Special Inspection

SOC CER –Senior Officer Communication and Coordination Electronic Resource

SOW –Statement of Work

SRRB –Spares Requirement Review Board

TAA –Time and Attendance

TAC —Total Accumulated Cycles

TACR –Table of Allowance Change Request

TCI —Time Change Item

TCTD —Time Compliance Technical Data

TCTO —Time Compliance Technical Order

TDV –Technical Data Violation

TDY –Temporary Duty

TMS –Type Model Series

TSS-PAC –Training Scheduling System-Production Acceptance Certification

USAF —United States Air Force

UCR –Unsatisfactory Condition Report

WCF –Working Capital Fund

WSS –Weapons Systems Sustainment

Attachment 2 (Added-AFMC)

DROPPED OBJECT PREVENTION (DOP) PROGRAM REPORT**Figure A2.1. Dropped Object Prevention (DOP) Program Report**

MEMORANDUM FOR	<i>Date</i>
FROM: Unit Designation/Office Symbol, Street, Base and Zip Code	
SUBJECT: Dropped Object Report. DOP program report number (unit, year, and month, followed by sequence number -- example, 301FW-D-060501)	
DOP program report number (unit, year, and month, followed by sequence number -- example, 301FW-D-060501).	
MDS.	
Type mission and mission profile.	
Aircraft tail number.	
Owning organization and base.	
Origin of sortie.	
Date of incident and discovery location (if different than origin of sortie).	
Geographical location of object, if known.	
Item, noun, and description (use information from the applicable aircraft -4 series TOs).	
TO, figure, and index.	
Part number.	
Correct WUC (full five-digit) or Logistics/Maintenance Control Number (full seven-digit).	
Last PH, PE, PDM, HSC, or ISO inspection.	
Last maintenance performed in the area and date.	
Investigation findings (cause).	
Costs in dollars to repair or replace dropped object and any collateral aircraft damage as appropriate and cost in man-hours to repair.	
Actions to prevent recurrence.	
DR Control Number (if submitted).	
Unit POC information.	
Other pertinent information.	
///Sign/// DOP Monitor, Unit Designation	

Attachment 3 (Added-AFMC)
FOREIGN OBJECT DAMAGE (FOD) REPORT

Figure A3.1. Foreign Object Damage (FOD) Report

MEMORANDUM FOR	<i>Date</i>
FROM: Unit Designation/Office Symbol, Street, Base and Zip Code	
SUBJECT: Foreign Object Report. FOD program report number (unit, year, and month, followed by sequence number -- example, 301FW-F-060501)	
Type of report: Initial/Formal Update/Final FOD Report	
Date and Time of Incident:	
Unit and Base of Incident:	
Origin of Sortie:	
When discovered (Preflight, Postflight, In-Coming, Test Cell, etc.)	
Owning Unit, Base and MAJCOM	
MDS and Tail Number (N/A for Test Cell incidents)	
Engine Type, Make, Series, Modification (TMSM)	
Engine S/N:	
Engine Position (If Applicable):	
Time Since Overhaul:	
Description of Incident:	
Material Failure: (Yes or No)	
Tech Data Deficiency: (Yes/No)	
Preventable/Non-Preventable:	
Investigation Findings:	
Action Taken to Prevent Recurrence:	
Parts Cost:	Labor Cost: Total Cost:
Additional Comments (if necessary):	
///Sign/// FOD Monitor, Unit Designation	