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AIRCRAFT AND EQUIPMENT MAINTENANCE MANAGEMENT

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This publication implements Air Force Policy Directive (AFPD) 21-1, *Maintenance of Military Materiel;* and is consistent with AFPD 13-5, *Air Force Nuclear Enterprise.* It is the basic Air Force instruction (AFI) for all weapon system and support equipment maintenance management guidance. It provides the minimum essential guidance and procedures to safely and effectively maintain, service, and repair weapon systems and support equipment. It applies to all Major Commands (MAJCOMs), including Air Force Reserve Command (AFRC), and the Air National Guard (ANG), along with their subordinates. Supplements and addendums must be written in accordance with (IAW) AFI 33-360, *Publication and Forms Management*. Supplements must identify required deviations (applicability, variance, and/or differences in organizational placement of responsibilities/processes) on the supplement with the abbreviation "(DEV)" directly preceding the affected paragraph number. Only supplements and addendums containing deviations must be submitted to AF/A4L for 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, Table 1.1 for a description of the authorities associated with the tier numbers. Submit requests for waivers through the chain of command to the appropriate tier waiver approval authority IAW AFI 33-360. For questions on interpreting this instruction, first contact your MAJCOM maintenance functional activity. Refer recommended changes and questions about this publication through your MAJCOM, to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS). The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

(AFMC) This publication implements AFI21-101, it supplements specific processes and procedures that are unique to AFMC. This supplement applies to Air Force Materiel Command (AFMC) organizations and personnel that develop, test, and maintain aerospace platforms and associated equipment. Supplement applicability: Air Force Test Center combat wing organizations (96 TW and 412 TW) and the USAF Aircraft Battle Damage Repair Office (AFSC/LGPM).This publication does not apply to the Air National Guard Bureau (ANG) and the Air Force Reserve Command (AFRC) and their units. Numerous assigned missions within AFMC are not organized under the standard Combat Wing Organization (CWO) concept IAW AFI 38-101, Air Force Organization. AFMC Non-Standard Organizations (NSO) require deviations (applicability, variance, and/or differences in organizational placement of responsibilities/processes) from AFI 21-101 and this supplement. DEV – Deviation to provide/scope applicability for logistics/maintenance NSO in an addendum(s) to the MAJCOM supplement is approved by AF/A4L IAW AFI 21-101. Therefore, NSOs will follow the addendum(s) only, not the parent AFI nor this AFMC Supplement. The Addendum scopes NSO requirements in meeting the intent of the AFI and AFMC Supplement based on their mission. The following originations are identified as NSOs (In the event of a conflict with identification of NSOs in this guidance, AFI 21-101 AFMC Sup Addendum A Non Standard Organization (NSO) Logistics Maintenance Management will take precedence): Air Force Life Cycle Management Center (AFLCMC) units: 66th Air Base Group (ABG), 88th Air Base Wing (ABW), Crypto and Cyber Systems (HNC) (specifically the Technical Application Products, Consolidated Signals Intelligence Support Activity Integration Center, and Space COMSEC mission areas), Big Safari, 645 and 661 Aeronautical Systems Squadron, Armament Sustainment Division (ASD); Air Force Research Laboratory (AFRL), all units; Air Force Test Center (AFTC) units: Arnold Engineering and Development Complex (AEDC), 96th Test Group (TG) and Plant 42; and Air Force Sustainment Center (AFSC) units: 72nd ABW, 72nd Logistics Readiness Squadron (LRS)/LGRMW, 75 ABW, 649 MUNS, 78 ABW, 78 LRS/LGRW. Throughout this supplement, the civilian equivalent (unless no civilian may hold the position) may be applied to any reference to a military rank, grade or position. All references to aircraft and equipment maintenance in AFI 21-101 include support equipment, test equipment, special projects equipment, etc. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("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. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority; if not-tiered, send through chain of command to publication OPR. Submit recommendations for change or improvement to this instruction on Air Force (AF) Form 847, Recommendation for Change of Publication in accordance with AFI 33-360. For questions on interpreting this instruction, first contact your Quality Assurance (QA) Office/activity. Send questions to the Office of Primary Responsibility (OPR) at AFMC/A4 Workflow (**AFMC.A4M.Workflow@us.af.mil**), 4375 Chidlaw Rd, Bldg 262 Room C114 WPAFB OH 45433-5006. Sustainment Operating Instructions (SOIs) 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 policies/instructions specific to the F-35 where legacy instructions may not be adequate for the given topic. AFMC units may use SOI source documentation/information that is relevant and complements AFI 21-101 and AFMC Sup. SOIs requiring a deviation from AFI 21-101 and AFMC Sup requires the unit to submit a waiver. SOIs may be accessed at the following web site: https://cs.eis.af.mil/f35/sustainment/Logistics%20Support%20Products%20Library/Forms/AllItems.aspx. This publication must be supplemented by the implementing activities. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, Management of Records and disposed of IAW Air Force Records Disposition Schedule located at **https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

This publication has been substantially revised and must be completely reviewed in its entirety.

(AFMC) This supplement incorporates approved changes submitted through AF Form 847 to the AFMC supplement to AFI 21-101. Summary of changes are as follows; updated guidance for applicability and unit alignment/office symbol based on new Center construct, Foreign Object (FO) vacuum tool with High-Efficiency Particulate Air (HEPA) rated disposable bags, CAT II minors, Quality Assurance (QA) inspectors (permanent and augmentee) Evaluator Proficiency Evaluation (EPE), and guidance on use of F-35 SOIs. Additionally, added hangar queen aircraft in assigned purpose codes guidance, Munitions QA guidance and applicability. This supplement adds the Deviation, (DEV) to provide/scope applicability for the logistics/maintenance Non-Standard Organizations (NSO) in an addendum(s) to the MAJCOM Sup and removes Depot/ALC guidance. Developed Attachment 8, Test Wing Maintenance and Flying Scheduling procedures General Responsibility and Policy to provide scheduling procedures for Operational Test and Evaluation, Developmental Test and Evaluation, or Initial Operational Test and Evaluation to ensure the intent of the maintenance and FHP planning cycle is met. Additionally, the former AFMCI 21-165 Aircraft Flying and Maintenance Scheduling, instructions were incorporated into parts of Chapter 15 and Attachment 8. Added a prescribed form for Request for Special Certification (AFMC Form 64) and changed block 16B of AFMC Form 310 Lost/Found Item Report to read as “If Not, Is Negligence Suspected”.

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Chapter 1

MANAGEMENT PHILOSOPHY AND POLICY

1.1. Introduction. This instruction prescribes basic aircraft and equipment maintenance management policy implementation and procedures used throughout the USAF to perform Mission Generation (MG) functions.

1.2. Organization. AF organizations are structured according to AFI 38-101, *Air Force Organization*, or as authorized by AF/A1M. Contracted maintenance functions are not required to organize IAW AFI 38-101, but will implement the organization as outlined in their proposal as accepted by the government. The term "Lead Command" is used to describe the technical advocacy and product support provided to individual weapon systems across the using MAJCOMs as described in AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*.

1.2. (AFMC)[DEV] The 412 MXG: Recently completed a High Performing Organization pilot program for DoD and is authorized the following deviations to continue taking advantage of the efficiencies achieved during that program:

1.2.1. **(Added-AFMC)** [DEV] The 412th Maintenance Squadron, Component Repair Flight (412 MXS/MXMA), consolidates Avionics, Armament Flight, and the Electro-Environmental, Battery Shop and Egress functions of the Accessory Flight in addition to Tow Targets sections.

1.2.2. **(Added-AFMC)** [DEV] The 412 MXS, Maintenance Flight (MXMX), consolidates the functions of the Maintenance Support Flight (MXMT) and the pneudraulic and fuels functions of the Accessories Flight (MXMC).

1.2.3. **(Added-AFMC)** [DEV] The 412 MXS, Munitions Flight (MXMW) is responsible for the Armament (MXMR) function for Bomber aircraft only due to the geographic location/separation at Edwards AFB, South Base.

1.3. Maintenance Concept. Per AFPD 21-1, organizational, intermediate and depot maintenance capabilities for operational readiness shall be maintained to ensure effective and timely response to peacetime operations, mobilizations, national defense contingencies and other emergencies.

1.3.1. As a minimum each capability will be able to:

1.3.1.1. Organizational: launch and recover sorties, maintain and repair material coded for organizational level repair.

1.3.1.2. Intermediate: repair materiel coded for organizational and intermediate level repair in back shops and/or centralized repair facilities.

1.3.1.3. Depot: repair materiel coded for organizational, intermediate and depot; overhaul; rebuild; modify and manufacture.

1.3.2. Organizational and intermediate-level maintenance is organized into two mutally supporting networks, the Mission Generation Network (MGN) and the Repair Network (RN). The MGN is optimized for mission generation at the wing level and consists of authorized "on-equipment" and "off-equipment" maintenance capabilities required to launch, recover,

configure, inspect and repair AF systems and equipment. The RN supports the MGN by providing maintenance required to fulfill operational needs outside the capability and/or capacity of MGN activities. The interface between the two networks takes place when the MGN activity relinquishes control of reparable assets to the RN activity (e.g. supply counter turn-in) or changing an end item possession code from an operational activity to a repair network activity (e.g. depot maintenance).1.3.1. Most MGN units possess a complement of equipment and supplies to perform on-equipment and off-equipment maintenance.

1.3.2.1. RN units may reside at bases that perform mission generation. RN requirements and processes are identified in AFI 20-117, *Repair Network Integration (RNI)* and when published, AFMAN 20-118, *Repair Network Integration (RNI) Operations*.

1.3.3. Requests for Assistance (RFA). If a maintenance activity requires assistance for evaluation and/or repair beyond unit capability, requests are made IAW AFI 21-103, *Equipment Inventory, Status And Utilization Reporting*; TO 00-25-107, *Maintenance Assistance*; and TO 00-20-14, *AF Metrology and Calibration Program*, or automated process as approved by the Mission Design Series (MDS) Program Manager (PM) (e.g., C-130 AIRCATS, F-16 TAR). All requests for assistance must be coordinated through the originating MAJCOM and Lead Command as applicable. **(T-2).**

1.4. Aircraft Maintenance Tactics, Techniques and Procedures (TTP). TTPs are developed from lessons learned and best practices that provide valuable reference documents to improve maintenance processes and procedures. Maintenance leaders should utilize the maintenance fundamentals TTP volumes (Aircraft, Munitions/Missile) to effectively and efficiently support mission generation. Maintainers who attend the USAF Advanced Maintenance and Munitions Operations School (AMMOS) are trained in advanced operational, expeditionary and tactical maintenance management concepts stemming from the alumni's development and formalization of TTPs. MXG/CC's should identify their AMMOS graduates and utilize them as advisors and instructors to enhance mission capability. TTP 3-3, *Aircraft Maintenance*, can be found at: **https://intelshare.intelink.gov/sites/561jts/3-3/default.aspx.** For additional information on AMMOS and TTP development see AFI 21-111, *Advanced Maintenance and Munitions Education Program*.

1.5. 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, inspection, repair, overhaul, modification, preservation, refurbishment, troubleshooting, testing, analyzing condition and performance and maintenance documentation. All levels of supervision need to place emphasis on 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 each maintainer is 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. Exploiting repair network capability and maintaining visibility of repair cycle assets throughout the maintenance cycle are also critical elements of the equipment maintenance program.

1.5.1. Preventive Maintenance. AF units implement and manage the tasks specified in the scheduled recurring maintenance program for their assigned aircraft and associated support equipment (SE). Preventive maintenance is achieved through the inspection requirement concepts described in TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policy, and Procedures*, and applicable weapon system -6 TO.

1.6. 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 compliant, safe, timely, and effective manner. Supervisors are responsible for enforcing and establishing a climate that promotes maintenance and supply discipline.

1.6.1. Compliance Terminology. For the purposes of this instruction, the following definitions apply:

1.6.1.1. **Shall, Must, Will** - Indicates mandatory requirements. **Note:** "Will" is also used to express a declaration of purpose for a future event.

1.6.1.2. **Should** - Indicates a preferred method of accomplishment.

1.6.1.3. **May** - Indicates an acceptable or suggested means of accomplishment.

1.6.2. Use of Technical Orders (TO) and TO Supplements. Use of the prescribed technical data to maintain aircraft and equipment is mandatory and will be conducted and managed IAW TO 00-5-1, *Air Force Technical Order System*. **(T-1).** All personnel will enforce compliance with technical data. **(T-1).**

1.7. Communications Security (COMSEC)/Controlled Cryptographic Item (CCI) Accountability. The Air Force COMSEC/Central CCI Authority is the Cryptologic and Cyber Systems Division, Joint Base San Antonio-Lackland, Texas.

1.7.1. COMSEC/CCI accountability will be accomplished IAW AFMAN 33-283, *Communications Security (COMSEC) Operations* and AFI 23-101, *Air Force Materiel Management*. **(T-1).** Questions concerning COMSEC/CCI accountability can be directed to the Cryptologic and Cyber Systems Division's COMSEC Policy Office (AFLCMC/HNCLS) at DSN 969-3886.

1.8. Environmental Compliance. It is the responsibility of all maintenance personnel to comply with all written guidance to ensure compliance with hazardous material, hazardous waste management and air emissions record keeping as required for environmental compliance IAW AFI 90- 803, Environmental, Safety, and Occupational Health Compliance Assessment and Management Program, installation ESOHMS/EMS policy/guidance and applicable environmental requirements and guidance. (T-0).

1.9. Publications. Units may tailor procedures to the unique aspects of their own maintenance operation and publish directives, instructions, supplements, addendums, and, for functional areas, Operating Instructions (OI) IAW AFI 33-360.

1.9.1. Develop, control, and maintain functional checklists, at a minimum, each functional checklist is titled and dated. Functional checklists are not be used in place of or to circumvent technical data for operation, servicing, inspection or maintenance of aircraft, aircraft systems, munitions, and all other equipment supporting aircraft and munitions maintenance.

1.10. Maintenance Training. Maintenance training provides initial, recurring and advanced proficiency, qualification, or certification skills needed by a technician to perform duties in their primary AF Specialty Code (AFSC)/Civilian Job Series. Maintenance training includes combat and sortie generation skills not normally integrated into peacetime operations (e.g., munitions handling, and external fuel tank build-up, hot refueling). Maintenance training carries an equal priority with the operational training mission. For maintenance training policy and guidance, refer to AFI 36-2650, *Maintenance Training* and MAJCOM supplements.

1.11. Modification Management. A modification proposal is a recommendation to change the operation, use, or appearance of AF equipment. Modifications (temporary, permanent, or safety) to AF aircraft or equipment are expressly prohibited without PM approval. **Note:** PM is used in this publication as defined in DODD 5000.01. Refer to AFI 63-131, *Modification Management*, for modification management procedures.

1.11.1. Modifications to Munitions. All proposed modifications to aircraft-carried munitions include SEEK EAGLE certification IAW AFI 63-104, *The SEEK EAGLE Program*. All modifications to AF nuclear munitions or their associated support/training equipment are nuclear certified IAW AFI 91-103, *Air Force Nuclear Safety Design Certification Program* and AFI 63-125, *Nuclear Certification Program*. All modifications to AF conventional munitions or their associated support/training equipment are certified IAW AFI 91-205, *Non-Nuclear Munitions Safety Board*.

1.12. Maintenance Information Systems (MIS). MIS refers to automated maintenance information systems that support and enable maintenance business processes. MIS is used to document maintenance actions and track fleet health. The information entered into the MIS is accomplished IAW TO 00-20-2, *Maintenance Data Documentation* and match the content of the aircraft forms. MIS data entries do not have to be accomplished by the same individual who documented the aircraft forms, but employee numbers/man numbers/USERIDs of individuals accomplishing the actual work are entered into the MIS. Red Ball maintenance is documented IAW **Chapter 11** of this instruction.

1.12.1. Units use the approved MIS for their assigned weapon system.

1.13. 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 approved procedures, asking for help when needed, and using personal protective equipment (PPE).

1.13.1. Safety "Knock It Off" and Risk Management. Due to the inherent danger to life, limb, and property associated with maintenance operations, personnel are empowered to terminate an operation or situation which they perceive is unsafe or too dangerous. When supervisors/crew leaders become task-focused, junior personnel are often better able to assess the danger; however, deferring to the experience and judgment of the crew leader, they may choose to remain silent, missing an opportunity to break the mishap sequence chain. Maintenance commanders and supervisors are responsible to foster a culture in their units so that a simple, but recognizable "audible" from anyone can prevent a potential mishap. **Note:** See AFI 90-802, *Risk Management*, and AFPAM 90-803, *Risk Management (RM) Guidelines and Tools* for additional information.

1.13.2. Visitors. Units will not permit visitors to operate any AF equipment unless they are qualified to operate such equipment and are doing so in the performance of their assigned official duties. **(T-1).** Visitors will not be allowed in the flightline area if munitions operations are present IAW AFMAN 91-201, *Explosive Safety Standards*. **(T-1).**

1.14. Duty Shifts and Rest Periods. Maintenance personnel duty hours are aligned to provide optimal mission support.

1.14.1. Supervision at all levels will be equitably distributed to cover all duty periods. **(T-2).**

1.14.2. Personnel will not be scheduled for more than 12 hours of continuous duty time. **(T-1).** Duty time begins when personnel report for duty and ends when their supervisor releases them. Time spent in exercise/contingency deployment processing lines and in-transit counts toward the total duty day. **Exception:** MXG/CCs are final approval authority for duty time extensions exceeding 12-hour limit up to a maximum of 16 hours. Aircraft/Detachment CCs assume this responsibility in deployed/travel status.

1.14.3. Commanders and supervisors will provide a rest period after each shift. **(T-1).** A rest period is a block of time that gives a person the opportunity for 8 hours of uninterrupted sleep in a 24-hour period. **Note:** This rest period also applies during exercises or inspections.

1.14.4. Personnel will not handle, load or perform maintenance on nuclear weapons, conventional munitions and/or egress explosives beyond a 12-hour continuous duty period. **(T-1).** This requirement may not be waived for exercises or inspections; however, the 12-hour continuous duty period may be exceeded for shift turnover/administrative actions only and will be avoided to the maximum extent possible. The MXG/CC or equivalent may waive this requirement during advance defense readiness conditions, actual emergencies as defined in DOD Directive 3150.02, *DOD Nuclear Weapons Surety Program*, or to resolve an unexpected event (e.g. disabled vehicle, WS3 fault, hoist failure, etc…).

1.14.5. In alert force or standby duty situations where facilities are available for resting, established norms may be exceeded. Adjust rest periods to allow for 8 hours of uninterrupted sleep.

1.14.6. Commanders and supervisors will ensure individuals are afforded adequate duty rest periods and breaks to prevent fatigue or thermal injury. **(T-1).** Stop anyone if fatigue may jeopardize safety. In all cases, Aircraft Commanders (AC)/supervisors ensure aircraft maintenance personnel are not required to perform duty when they have reached the point of physical or mental fatigue rendering them incapable of performing their assigned duties safely and reliably.

1.15. Communications. Effective maintenance accomplishment requires the ability to efficiently and effectively communicate across all facets of the maintenance operation. Communication technology (radios, cell phones, wireless internet, etc.) must be available to expedite personnel, equipment, material, and maintenance data throughout the maintenance complex. **(T-2).** Commanders shall develop communication plans according to mission requirements. **(T-2).** See **Chapter 11** for detailed communication requirements.

1.15.1. MAJCOMs will develop guidance on the use and control of personal electronic and communication devices on the flightline, in munitions areas, hangars, and/or other industrial work areas.

1.15.1.1. **(Added-AFMC)** Cell Phones/Cameras in Industrial Areas. Cell phones/cameras are prohibited when directed by safety/classified/special access requirements or TOs. Note these areas will be clearly marked with signs so it is obvious to all that it is an electronic device/cell phone restricted area. **(T-2).**

1.15.1.2. **(Added-AFMC)** Use of a privately owned cell phone or communication devices are authorized in the industrial/production areas except while performing hands-on maintenance activities. Employees will remove themselves from any maintenance activity, aircraft, or high traffic areas prior to using a communication device. **(T-2).**

1.15.1.3. **(Added-AFMC)** Use of portable music/video players, electronic games or other personal electronic hearing impairing devices are authorized in industrial production areas except where audio warning cues are used. Prohibited items do not include boom boxes, stereos and other sizable devices. **(T-2).**

1.16. Maintenance Repair Priorities. Maintenance repair priorities are listed in **Table 1.1** This does not prohibit the Production Superintendent (Pro Super), in coordination with the Maintenance Operations Center (MOC), from changing the maintenance repair priority when warranted. During tasked Operational Plan (OPLAN) or operational exercise, the preplanned maintenance flow determines job sequence. The maintenance repair priority and the Logistics Readiness Squadron (LRS) delivery priorities (listed in AFI 23-123V1, *Materiel Management Reference Information*) are normally identical. Raising or lowering maintenance repair priorities does not necessarily require a corresponding change in the LRS delivery priority. However, the Pro Super may authorize the use of a less responsive LRS delivery priority.

Table 1.1. Maintenance Repair Priority Designators.

PRIORITY	APPLICATION
1	Aircraft on alert status, war plan or national emergency missions, including related Aerospace Ground Equipment (AGE), munitions and munitions support equipment (MSE).
2	- Primary mission aircraft, related AGE, munitions, and munitions support equipment, for the first 8 work hours after landing or start of recovery or within 6 work hours of a scheduled launch, alert or test flight and during simulated generation/Operational Readiness Exercises (ORE). - Air evacuation, rescue, Weather (WX) mission aircraft, related AGE, munitions, and munitions support equipment. - All transient support, and FAA aircraft. Flight or missile crew training simulator, other training equipment or related AGE required repair, which is impacting the mission by preventing or delaying student training.
3	- Primary mission aircraft, engines, air launched missiles and related AGE, munitions and munitions equipment, and equipment undergoing scheduled or unscheduled maintenance, if not performed or repaired will prevent or delay mission accomplishment. Transient air vehicles not otherwise listed. - Administrative aircraft within 8 hours of scheduled flight or on alert status with standby crews. - Time change requirements for nuclear weapons. - Repair cycle assets to satisfy a Mission Capable (MICAP) condition. - Spares not available in supply. - Critical end items and spares not available in supply. - Routine maintenance of aircrew or missile-training simulator, or other training devices or related AGE or sites and aircraft or equipment used for maintenance training. - Avionics shop electronic AGE and automated test stations.

PRIORITY	APPLICATION
4	- Routine or extensive repair of primary air mission and related AGE and repair cycle assets. - Administrative aircraft undergoing scheduled or unscheduled maintenance. - Routine maintenance of AGE, not otherwise listed above. - War Reserve Materiel (WRM) items due maintenance or inspection. - Inspection, maintenance, and Time Compliance Technical Order (TCTO) compliance of Mission Support Kit (MSK) or Mobility Readiness Spares Package (MRSP) materiel. - Extensive repair of aircrew or missile training simulators, other training devices, or related AGE. - Inspection, maintenance, and TCTO compliance of munitions and munitions equipment, excluding spares excess to base requirements not listed above. - Scheduled calibration and unscheduled repairs on Precision Measurement Equipment (PME) not listed above. - Scheduled maintenance to include periodic inspections, routine TCTO, Master Configuration Lists (MCL) Grounding, and Time Change Items (TCIs). - Primary mission Comprehensive Engine Management System (CEMS) or equipment including associated AGE undergoing extensive repair or modification.

PRIORITY	APPLICATION
5	- Non-tactical or non-primary-mission aircraft undergoing extensive repair. - Fabrication and repair of aeronautical items not carrying a higher priority. - Bench stock requirements. - Extensive repair of aircrew training devices. - Time change requirements not listed above. - Routine repair of AGE and repair cycle assets. - Alternate and other CEMS or equipment, including associated AGE undergoing extensive repair or modification. - Clearing routine delayed discrepancies on training equipment or AGE, and routine maintenance which will not impair or affect mission accomplishment. - Equipment requirements.
6	- Fabrication and repair of non-aeronautical items. - Repair cycle asset shortages required to fill a peacetime operating stock authorization
7	- Spares/repair cycle assets excess to base requirements.

1.17. Associate Unit Program/Total Force Integration (TFI). The USAF employs the Associate Unit/TFI program in some locations where active and/or Air Reserve Component (ARC) units are collocated and share aircraft, equipment, facilities, and other resources IAW AFI 90-1001, *Responsibilities for Total Force Integration*, and MAJCOM supplements. For the purpose of this instruction, in an Active Association, the ANG/AFRC owns the aircraft, and Regular AF (RegAF) personnel will follow ANG/AFRC maintenance policy. **(T-1).** In an ARC association, AFRC owns the aircraft, and ANG personnel will follow AFRC guidance, or vice versa. **(T-1).** In a classic association, RegAF owns the aircraft, and ANG/AFRC personnel will follow RegAF maintenance policy. **(T-1).** Type of association is determined by the Program of Record for the associated unit.

1.18. Performance-Based Activities. MAJCOMs may publish the basic responsibilities for managing performance-based activities. Additional guidance may be found in AFI 38-203, *Commercial Activities Program.* **Note:** A contractor, Most Efficient Organization (MEO), or High Performance Organization (HPO) are referred to as a service provider.

1.18.1. MAJCOMs will:

1.18.1. **(AFMC)** Performance-based activities (A1MR) are coordinated/collaborated with the appropriate A4 MFM/FAM.

1.18.1.1. Designate focal points for organizational, functional, and technical questions pertaining to each performance-based activity program.

1.18.1.2. Specify measurement areas and performance levels required for aircraft, systems, and equipment operated or maintained by performance-based activities.

1.18.1.3. Specify the forms, methods of documentation, and frequency of reporting used to assess performance-based activities and ensures these requirements are included in the Quality Assurance Surveillance Plan (QASP).

1.18.1.4. Approve base-level requests that would permit a single Federal Aviation Administration (FAA) certified Airframe/Powerplant (A/P) contractor technician maintaining contracted logistics support (CLS) aircraft to repair and sign off their own Red X's when sent to recover aircraft off-station.

1.18.1.5. Ensure units with assigned Contracting Officer Representative (COR) personnel meet requirements in **Chapter 14** of this instruction and applicable 63-series AFI requirements.

1.18.1.6. Ensure aircraft depot maintenance contracts, Statements of Work (SOW), and Performance Work Statements (PWS) are coordinated with the MAJCOM Munitions Functional to ensure munitions handling, accountability and disposition requirements are adhered to.

1.18.2. Units will:

1.18.2.1. Designate a focal point for all functional, technical, and COR matters pertaining to performance-based activities. **(T-1).**

1.18.2.2. In coordination with the contracting officer and the MXG/CC (or equivalent), provide specific guidance to the performance-based activity to ensure proper maintenance discipline and flight worthiness of aircraft and subsystems. **(T-2).**

1.18.2.3. Develop and publish contingency procedures for support of continuing operations in the event of disruption, termination, or default of contracts. **(T-1).**

Chapter 2

GENERAL RESPONSIBILITIES FOR COMMANDERS AND KEY LEADERS

2.1. General. This chapter outlines responsibilities for commanders and key leaders involved in maintenance activities. For the purpose of this instruction, in units where there is not a military commander responsible for maintenance, the applicable civilian Director of Maintenance (DOM) will ensure compliance with all responsibilities in this instruction. **(T-1).** For organizations without all commanders and key leaders assigned, MAJCOMs will identify equivalent positions of authority commensurate with the responsibilities of the leadership positions identified in this chapter in a MAJCOM supplement to this instruction. **Note:** For the purpose of this instruction, contractor equivalents are as follows: A1C—aircraft servicer or apprentice/journeyman; SrA (1 year time-in-grade)—aircraft worker or field maintenance worker or higher; SSgt—aircraft mechanic or field maintenance mechanic or higher; TSgt—senior mechanic or craftsman; MSgt—lead mechanic; SMSgt/CMSgt/maintenance officer—foreman, branch chief or higher. MAJCOMs may determine grade/skill level equivalents for civilians.

2.1. (AFMC)The civilian equivalent (unless no civilian may hold the position) may be: Applied to any reference to a military rank, grade or position.

2.2. Wing Commander (WG/CC) Responsibilities. The WG/CC allocates resources to meet all mission requirements. The WG/CC will:

2.2.1. Ensure that maintenance organizations are not overtasked with augmentation duties outside maintenance functional areas. **(T-1).**

2.2.2. Conduct a daily "Wing Standup" meeting. **(T-1).** The meeting will include, at a minimum, a review of previous, current, and future activities, focused on identifying and resolving issues with executing the established flying and maintenance schedule. **(T-2).**

2.2.2. **(AFMC)** [DEV] Daily “Wing Standup” meeting may be delegated to the MXG/CC or OG/CC. At a minimum, the WG/CC will chair this meeting once a week. **(T-2)**

2.2.3. Ensure a coordinated wing/base instruction is developed to control tools, equipment, and electronic devices applicable to all wing/base agencies dispatching to aircraft runway/taxi/parking and maintenance areas. **(T-1).**

2.2.4. Ensure maintenance and operations develop a joint annual maintenance and Flying Hour Program (FHP) that establishes a balance between the requirement for sorties and maintenance capability. **(T-1).** The WG/CC will:

2.2.4.1. Establish a joint MXG and OG planning and scheduling cycle to ensure the best use of aircraft, equipment, and personnel to accomplish short-term sortie production and long-term fleet health. **(T-1).**

2.2.4.2. Approve the weekly; monthly, quarterly, and annual flying/test schedules **Chapter 15** of this instruction. **(T-1).**

2.2.4.3. Direct the use of the Maintenance Capability and Capacity (MxCAP2) model, if available, for the assigned MDS. **(T-1).** The MxCAP2 model provides the ability to forecast/evaluate the impact of changing requirements (e.g. deployments, changes in

aircraft availability, maintenance AFSC shortages, or locally developed scenarios) on a maintenance unit's sortie generation capacity.

2.2.4.3. **(AFMC)** [DEV] Due to the non-standard nature of the test mission, the use of the MxCAP2 model is not conducive in projecting annual flying capabilities. Use of local tools is authorized.

2.2.5. Sustain a Crash Damaged or Disabled Aircraft Recovery (CDDAR) capability for assigned active airfields/runways IAW **Chapter 11** of this instruction and develop a wing publication IAW AFI 33-360 containing specific responsibilities for all applicable base support agencies. **(T-1).**

2.3. Wing Vice Commander (WG/CV) Responsibilities. The WG/CV (or equivalent) will:

2.3.1. Manage the Foreign Object Damage (FOD) and Dropped Object Prevention (DOP) Programs. **(T-1).** The WG/CV is the FOD/DOP Prevention Program Manager and will appoint a qualified technical sergeant (or above), civilian equivalent, or contractor, if designated by performance work statement, as the FOD/DOP Prevention Monitor(s) IAW **Chapter 11** of this instruction. **(T-1).**

2.4. Maintenance Group Commander (MXG/CC) Responsibilities. In addition to the responsibilities listed below, the MXG/CC or equivalent must ensure compliance with the maintenance requirements and programs in **Chapter 11** of this instruction. **(T-1).** The MXG/CC (or equivalent) will:

2.4.1. Establish a radiation protection program IAW AFI 48-109, *Electromagnetic Field Radiation (EMFR) Occupational & Environmental Health Program*, when applicable. **(T-1).**

2.4.2. Appoint an MXG Environmental Coordinator IAW AFI 32-7001, *Environmental Management* . **(T-1).** Refer to AFI 90-803, *Environmental, Safety, and Occupational Health Compliance Assessment and Management Program*, *AFI 91-203, Air Force Consolidated Occupational Safety Instruction*, AFI 32-7086, *Hazardous Materials Management*, and AFI 32-7042, *Waste Management*, for additional guidance.

2.4.3. Ensure maintenance is only performed by personnel who are trained, qualified, and certified, unless under the direct supervision of a trainer or certifier. **(T-1).**

2.4.4. Ensure standardization of maintenance discipline, procedures, organizational structures, compliance, and management philosophy. **(T-1).**

2.4.5. Coordinate with Fire Emergency Services, Wing Safety, and the Airfield Operations Flight in developing adverse weather procedures for protecting aircraft and equipment IAW AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*, AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*, and MDS-specific technical data. **(T-1).**

2.4.6. Establish and support a Data Integrity Team (DIT), refer to **Chapter 5** of this instruction. **(T-1). Note:** DIT is not required for contractors unless specified in the PWS/SOW.

2.4.7. Approve and publish In Process Inspection (IPI) listings every two years IAW **Chapter 6** of this instruction. **(T-1).**

2.4.8. Ensure the Maintenance Standardization and Evaluation Program (MSEP) requirements are implemented IAW **Chapter 6** of this instruction. **(T-1).**

2.4.9. Ensure effective management of the MXG's total maintenance training program IAW AFI 36-2201, *Air Force Training Program* and AFI 36-2650. **(T-1). Note:** The MXG/CC may authorize the Munitions Squadron/Flight Commander/Chief to chair the munitions scheduling and training meetings and publish schedules. The MXG/CC will:

2.4.9.1. Ensure Master Training Plans (MTPs) are developed IAW AFI 36-2201 and training is accomplished according AFI 36-2650. **(T-1).**

2.4.9.2. Ensure Special Experience Identifier (SEI) management IAW the *Air Force Enlisted Classification Directory*. **(T-1).**

2.4.9.3. Support the maintenance training program by allocating aircraft, personnel, facilities and equipment. **(T-1).**

2.4.10. Approve RFAs IAW **Chapter 1** of this instruction after they are coordinated with Plans, Scheduling, and Documentation (PS&D), Quality Assurance (QA), and all applicable maintenance organizations. **(T-1).**

2.4.11. Designate a focal point for all functional, technical, and COR matters pertaining to performance-based activities. **(T-1).** Refer to **Chapter 1** of this instruction.

2.4.12. Review the weekly, monthly, quarterly, and annual flying/test schedules IAW **Chapter 5** and **Chapter 15** of this instruction. **(T-1).**

2.4.13. Ensure munitions are accounted for IAW AFI 21-201, *Munitions Management*, AFI 21-103 for Nuclear Weapon Procedures, and/or AFI 20-110, *Nuclear Weapons-Related Materiel*. **(T-1).**

2.4.14. Ensure all personnel assigned to maintenance are used to accomplish critical maintenance tasks before releasing them for non-maintenance duties. **(T-1).**

2.4.15. Establish Minimum Equipment Levels (MELs) for essential maintenance assets to include engines, pods, AGE, vehicles, etc. **(T-1).**

2.4.16. Implement an effective Corrosion Prevention and Control Program IAW TO 1-1-8, *Application and Removal of Organic Coatings, Aerospace and Non-Aerospace Equipment*; TO 35-1-3, *Corrosion Prevention and Control, Cleaning, Painting, and Marking of USAF Support Equipment*; TO 1-1-691 *Cleaning and Corrosion Prevention and Control, Aerospace and Non-Aerospace Equipment*. **(T-1).**

2.4.17. 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*, AFI 21-203, *Nuclear Accountability Procedures*, TO 1-1-700, *Corrosion Prevention and Control, Ground Communications-Electronics Equipment* and TO 31Z-10-37, *General Engineering Technical Manual Corrosion Prevention and Protection*. **(T-1).**

2.4.17.1. For units possessing Nuclear Certified Equipment (NCE), the MXG/CC will ensure personnel are trained in the proper use of nuclear flagwords, mishap and deficiency reporting instructions IAW AFMAN 91-221, *Weapons Safety Investigations and Reports* and AFI 91-204, *Safety Investigations and Reports*. **(T-1).**

2.4.18. Ensure effective management of the Engine Trending and Diagnostic (ET&D) program IAW AFI 20-115, *Propulsion Management for Aerial Vehicles*. **(T-1).**

2.4.19. Establish CDDAR capability IAW **Chapter 11** of this instruction and applicable MDS technical data. **(T-1).**

2.4.19.1. The MXG/CC will ensure resources and trained personnel are available to perform responsibilities of the CDDAR Program. **(T-1).**

2.4.20. Develop a 10-year facility plan specifying maintenance, upgrade, and replacement projections for the group's facilities. **(T-1).** The MXG/CC will:

2.4.20.1. Update and coordinate this plan with the installation Civil Engineer (CE) annually. **(T-1).**

2.4.20.2. Coordinate and prioritize group maintenance facility work orders monthly (quarterly for the ARC). **(T-1).**

2.4.21. Ensure adequate Personal Wireless Communications Systems (PWCS) are available to support mission requirements. **(T-1).** Refer to **Chapter 11** of this instruction for further information on PWCS requirements.

2.4.22. Ensure repair cost evaluations are performed and appropriate levels of review and repair authorization are established in squadrons, flights, and repair sections IAW TO 00-20-3, *Maintenance Processing of Repairable Property and The Repair Cycle Asset Control System*, TO 00-25-240, *Uniform Repair/Replacement Criteria for Selected USAF Support Equipment (SE)* and TO 35-1-24, *Air Force Economic Repair/Replacement Criteria For Selected Warner Robins Logistics Complex (ALC) Managed Support Equipment (SE)*. **(T-1).**

2.4.23. Ensure effective use of the assigned AF Engineering and Technical Services/Contracting Engineering Team Specialists (AFETS/CETS) IAW AFI 21-110, *Engineering and Technical Services*, and other contracted Field Service Representatives (FSRs) henceforth referred to as assigned AFETS and contractors. **(T-1).**

2.4.24. Establish the group maintenance awards and recognition program to meet AF and MAJCOM requirements IAW AFI 36-2818, *The USAF Logistics Awards Program*. **(T-1).**

2.4.25. Ensure procedures are followed to properly turn in recoverable and consumable items IAW AFI 23-101. **(T-1).**

2.4.26. Ensure the applicable section "safes" all static display aircraft/systems according to TO 00-80-series and system specific TOs. **(T-1).**

2.4.27. Approve MXG Key Task List (KTL) and Routine Inspection Lists (RIL). **(T-1).**

2.4.28. Ensure an orientation program is developed and conducted for all personnel newly assigned to MXG maintenance/activities IAW AFI 36-2650. **(T-1).**

2.4.29. Establish the MXG Lead the Fleet (Pacer) Program for engine type IAW AFI 20-115, and AFMAN 20-116, *Propulsion Life Cycle Management for Aerial Vehicles*. **(T-1).**

2.4.30. Establish and document MXG local manufacture procedures and controls in a supplement to this instruction. **(T-1).**

2.4.31. Ensure the MXG Oil Analysis Program (OAP) complies with AFI 21-124, *Oil Analysis Program*. **(T-1).**

2.4.32. Appoint a Stock Record Account Number (SRAN) Engine Manager (EM) or a Unit Engine Manager (UEM) to accomplish duties outlined in AFI 20-115. **(T-1).**

2.4.33. Appoint a qualified 2A6X1, minimum 7-skill level (or civilian equivalent) technician, to perform Engine Health Management Plus (EHM+) duties IAW AFI 20-115. **(T-1). Exception:** ANG may appoint a qualified 2A6X1 or 2R1X1with a minimum 7-skill level.

2.4.34. Designate the Installation Maintenance Advisor to the Aero Club according to AFI 34-117, *AF Aero Club Program*, when applicable. **(T-1).**

2.4.35. Appoint hot refueling/hot defueling OPRs for the WG, and designate an OPR for hot refuel training (if applicable) IAW **Chapter 11** of this instruction. **(T-1).**

2.4.36. Ensure maintenance requirements (e.g., aircraft turnaround, alternate fuel cell, hot refueling, end-of-runway (EOR) check area, engine run spots, explosive load (cargo) areas) are included in the base parking plan. **(T-1).**

2.4.37. Ensure unit personnel collect and report Aircraft Structural Integrity Program (ASIP) data IAW AFI 63-140, *Aircraft Structural Integrity Program* and **Chapter 11** of this instruction. **(T-1).**

2.4.38. Ensure aircraft shelters at bases with permanently assigned aircraft are maintained, unless otherwise stipulated in contracting arrangements, IAW **Chapter 11** of this instruction. **(T-1). Note:** If an aircraft shelter is used for other than its designed purpose, the using activity will maintain it. **(T-1).**

2.4.38.1. Ensure aircraft and equipment sun shades are maintained IAW AFI 21-136, *Aircraft Sunshade Management*. **(T-1).**

2.4.39. Ensure management of the Weight and Balance (W&B) program IAW **Chapter 6** of this instruction. **(T-1).**

2.4.40. Coordinate with the Operations Group (OG) and establish Functional Check Flight (FCF), Operational Check Flight (OCF), and High Speed Taxi Check programs. **(T-1).**

2.4.41. Implement the Hangar Queen Program IAW **Chapter 11** of this instruction. **(T-1).**

2.4.42. Develop a MXG Impoundment Program and ensure compliance with the procedures IAW **Chapter 7** of this instruction. **(T-1).**

2.4.43. Establish written procedures to review and clear “repeat”, “recur”, and “cannot duplicate” (CND) discrepancies. **(T-1).**

2.4.44. Appoint a Radar Warning Receiver (RWR)/Radar Threat Warning (RTHW) or equivalent system manager IAW **Chapter 11** of this instruction (if equipped). **(T-1).**

2.4.44. **(AFMC)** [DEV] The 412th Electronic Warfare Group (412 EWG) will appoint the RWR/RTHW managers for the 412 TW.

2.4.45. Ensure compliance with Identification Friend or Foe (IFF) Program or equivalent IAW **Chapter 11** of this instruction (if equipped). **(T-1).**

2.4.46. Provide Subject Matter Expertise (SME) support for the development of the wing/installation instruction to control tools, equipment, and electronic devices from all wing agencies dispatching to aircraft parking/runway/taxi areas and aircraft maintenance areas IAW **paragraph 2.2.2** and **Chapter 8** of this instruction. **(T-1).**

2.4.47. Establish written guidance on individual responsibilities and specific procedures for Cannibalization (CANN) actions IAW **Chapter 11** of this instruction. **(T-1).**

2.4.47.1. Ensure aircraft possessed by AFMC for depot maintenance are not cannibalized without approval from the applicable ALC Maintenance Group Commander/Director and coordinated with the MAJCOM functional manager. **(T-1).**

2.4.48. Establish local procedures for management and maintenance of assigned Ground Instructional Training Aircraft (GITA) and Training Aircraft Aids (TAA) to ensure they remain useful and safe within guidelines stated in **Chapter 11** of this instruction, AFI 84-103, *U.S. Air Force Heritage Program*, AFI 21-103, and 23-series publications. **(T-1).**

2.4.49. Sustain a Transient Alert (TA) function (if required). **(T-1).** The MXG/CC will establish procedures and furnish necessary personnel and facilities for handling transient aerospace vehicles to ensure that servicing, inspection, and maintenance are consistent with the mission of each transient aerospace vehicle. **(T-1).** Special consideration should be given to medical or air evacuation aerospace vehicle, emergency missions, and special missions.

2.4.49.1. **(Added-AFMC)** When issuing or renewing a TA contract, owning/requiring activity will use the Standardized TA Services Performance Work Statement authored by AFICA 771 ESS and the ACC Strategic Sourcing Cell.

2.4.50. Ensure AFREP is managed IAW AFI 21-123, *The Air Force Repair Enhancement Program*. **(T-1).**

2.4.51. Ensure unit Flying Crew Chief (FCC) program(s) are established IAW **Chapter 11** of this instruction, if applicable. **(T-1).**

2.4.52. Establish procedures to ensure assigned units have sufficient Electronic Tools (eTools) availability for technical order viewing. **(T-1).**

2.4.53. Develop written procedures and assign responsibilities to ensure aircraft/system forms, equipment forms, and MIS documentation are complete, accurate, and a thorough review is accomplished for each shift. **(T-1).** Documented procedures as a minimum will include:

2.4.53.1. The process to ensure aircraft/systems and equipment status is correctly reflected in maintenance forms and the MIS IAW TO 00-20-1, TO 00-20-2, AFI 21-103 and **Chapter 1** of this instruction. **(T-1).**

2.4.53.2. The process for recovering aircraft/systems from extensive maintenance events/down time (CANN, local depot MX, etc.) include independent screening and validation that all maintenance actions (IPIs, operational checks, configuration management, W&B, serial number (S/N) tracking, Air Force Technical Order (AFTO) Form 95, *Significant Historical Data*) have been accurately documented in the forms and/or MIS before being scheduled for a sortie/mission. **(T-1).**

2.4.53.3. The process for determining if an OCF or FCF is required. **(T-1).**

2.4.54. Ensure that when no 2W1X1 weapons AFSCs are assigned and units are required to install/remove chaff/flare on unique mission aircraft, train and qualify personnel to perform these tasks IAW procedures outlined in AFI 21-201 and **Chapter 11** of this instruction. **(T-1)**. As a minimum, the program will include academic, explosive safety, and load/unload training. **(T-1).**

2.4.55. **(Added-AFMC)** Coordinate with the applicable Safety Staff to determine reporting requirement IAW 91-204, when property damage to aircraft, equipment, commodities, or resources exceeds the Class D threshold ($20,000).

2.5. Deputy Maintenance Group Commander (MXG/CD) will:

2.5.1. Chair and designate mandatory attendees for the daily maintenance production/scheduling meeting. **(T-1).** The purpose of this meeting is to verify aircraft and equipment utilization and scheduled maintenance requirements for the next day, establish work priorities, and coordinate schedule changes.

2.5.1.1. Topics reviewed will include as a minimum: aircraft/system status, MICAP and repair cycle status, AF Form 2407s, *Weekly/Daily Flying Schedule Coordination*, current-day flying and maintenance schedule execution, remaining portion of the current day's schedule, previous day's flying and maintenance schedule deviations to the published schedule, prioritizing aircraft requiring/competing for shared resources, and review special inspections (SIs), TCIs, TCTOs, Depot Field Team (DFT)/Contract Field Team (CFT) schedules. **(T-1).**

2.5.1.2. As a minimum, the MXG/CD will perform the following reviews weekly:

2.5.1.2.1. Review next week's flying and maintenance schedule to de-conflict and prioritize aircraft/systems requiring/competing for shared resources. **(T-1).**

2.5.1.2.2. Review any overdue special inspections and TCIs and planned corrective action. **(T-1).**

2.5.1.2.3. Review status of TCTOs that will ground within 30 days and completion plan. **(T-1).**

2.5.1.2.4. Review DFT/CFT schedule requirements. **(T-1).**

2.5.1.2.5. Review the previous week's deviations to flying and maintenance schedules. **(T-1).**

2.5.1.2.6. Review overdue Due In From Maintenance (DIFMs). **(T-1).**

2.6. MXG Superintendent Responsibilities. In addition to the Group Superintendent responsibilities outlined in AFI 36-2618, *The Enlisted Force Structure*, the MXG Superintendent is responsible to the MXG/CC and shall advise and assist the MXG/CC on their responsibilities as outlined in this chapter. The MXG Superintendent will:

2.6.1. Conduct a quarterly manning meeting with Squadron Superintendents/Wing Weapons Manager (WWM) to review MXG manning status and ensure manning resources are strategically distributed to provide the greatest possibility for mission success **(T-1). Exception:** Not Applicable (N/A) to ANG.

2.6.1.1. Meeting will consist of a review and evaluation of the impact on the MXG of personnel actions such as: work center/organizational manpower Authorization Change Requests (ACR), AFSC changes, re-training, special duty requests, special assignment actions (SWAP, Palace Chase, etc.), Special Experience Identifier (SEI) balance, overseas Date Eligible for Return from Overseas (DEROS) extensions/In Place Concurrent Overseas Tour (IPCOT) requests, physical profile changes and personnel rotation plans to enhance mission effectiveness. **(T-1).**

2.6.1.2. MXG Superintendent will provide the MXG/CC coordinated manning recommendations that develop enlisted individual experience and knowledge for consideration. **(T-1).**

2.7. Wing Weapons Manager (WWM). The WWM is the wing's focal point for all weapons loading and armament systems related matters. The WWM's primary efforts focus on compliance, continuity, and standardization. The WWM will be a 2W100 CMSgt assigned directly to the MXG/CC. **(T-1).** In units where 2W1 personnel are assigned but no 2W100 authorization exists, the MXG/CC will appoint the most qualified 2W1 to fulfill WWM responsibilities outlined in this chapter **(T-1). Note:** For ARC, the Senior Weapons Loading Supervisor serves as the WWM and does not require assignment to the MXG/CC staff. Weapons activities required to support the generation of peacetime training sorties generally do not reinforce primary combat skills. Therefore, the WWM plays a key role in ensuring that the unit is able to produce combat loaded aircraft. The WWM is charged with providing technical and managerial advice to senior leaders in matters of weapons loading and armament systems. The WWM coordinates with the Weapons Sections, Armament Flight, Wing Safety, Wing Weapons and Tactics Officer, the Munitions Squadron/Flight, and other unit agencies on weapons related matters. The WWM is a certifying official and evaluator for weapons loading task certifications and qualifications. The WWM is the functional manager for all 2W1X1 personnel. WWM will coordinate on support agreements and provide support for geographically separated units. **(T-1). Exception:** Unless outlined under additional TFI guidance. The WWM is the wing Point of Contact (POC) for all 2W1XX manpower issues to include coordination on all manning (e.g. AFSC, grade, and skill-level) changes, work center and organizational changes. The WWM will:

2.7.1. Review and coordinate on the Unit Manning Document(s) (UMD). **(T-1).** The WWM will ensure assignment of position numbers to new arrivals, and existing 2W1 personnel are properly assigned on the UMD to balance 2W1XX grades, experience and skill-levels between all 2W1XX work centers across the wing. **(T-1).** The WWM will coordinate on all 2W1 personnel position change requests. **(T-1).**

2.7.2. Ensure sufficient quantities of serviceable load crew training munitions are available to support both load crew and Dual Loading Operations (DLO) training programs. **(T-1).**

2.7.3. Ensure all wing 2W1X1 personnel regardless of duty position receive initial and recurring weapons academics. **(T-1).** The WWM will ensure introductory training is provided to newly assigned personnel on aircraft familiarization, safe for maintenance, explosive safety, weapons release and gun system safety prior to performing duties (as applicable to work center). **(T-1).**

2.7.4. Designate the Weapons Standardization (WS) SUPT, Loading Standardization Crew (LSC), lead crews as WS certifying officials and the primary weapons academic instructor.

(T-1). The WWM may designate the weapons section Non-Commissioned Officer in Charge (NCOIC) to perform WS functions of academics and weapons task qualification in HH-60 units.

2.7.5. Determine the number of load crews (based on unit taskings), other than the LSC and lead crews, to be certified on support or limited use munitions. **(T-1).** In nuclear-tasked units, the WWM will determine the number of load crews required to be certified on applicable nuclear weapons in support of OPLANs when the OPLAN's Designed Operational Capability (DOC) statement does not dictate load crew requirements. **(T-1). Note*:*** The WWM coordinates with the MXG/CC in determining the number of load crews to be certified on support or limited use munitions.

2.7.6. Use the Weapons Load Crew Management Tool (WLCMT) or MAJCOM-equivalent automated database to track load crew certification and qualification status. **(T-1).**

2.7.7. Monitor overall load crew status and advise the MXG/CC when the number of fully certified load crews fall below the Unit Committed Munitions List (UCML) or Test/Training Munitions List (TTML) minimum requirements. **(T-2).** If this occurs and cannot be corrected within 30 days, a secure message will be sent via Secret Internet Protocol Router (SIPR), through the MXG/CC, to the appropriate MAJCOM 2W1XX functional manager. **(T-1). Note:** All 2W1X1s working outside their respective work center or Duty Air Force Specialty Code (DAFSC) will be qualified/certified if possible to fill load crew shortfalls before sending a message to the MAJCOM. **(T-2).** The MAJCOM will send the message via SIPR to AF/A4LW at **usaf.pentagon.af-a4.mbx.a4lw-workflow@mail.mil.** The message will include:

2.7.7. **(AFMC)** When TTML minimum load crew certification numbers are not met for 30 consecutive days, updates and projected resolution date will be sent to HQ AFMC/A4MW every 30 days until TTML minimums are met. **(T-2).**

2.7.7.1. Number of 2W1X1 personnel authorized and assigned by work center, skill level (primary AFSC) and grade for the entire wing. Include all work centers to which 2W1X1 personnel are assigned.

2.7.7.2. Number of 2W1X1 personnel working outside the AFSC/work center.

2.7.7.3. Number of 2W1X1s not able to perform primary duties and the reason.

2.7.7.4. Number of fully certified crews. Include corrective action, get well date, and 30/60-day load crew status projection. If the standard cannot be reached in 60 days, provide the reason.

2.7.7.5. Number of load crews formed but not fully certified. List crews and specific items for which they are not certified and qualified.

2.7.7.6. Remarks: List limiting factors, equipment shortages, availability of training aircraft, etc.

2.7.8. Annually review DOC Statements, OPLANs, UCML/TTMLs, unit-tasked Unit Type Code (UTC) requirements (for equipment and personnel) and UMD to identify any disconnects or problems for weapons. **(T-2).** The WWM will coordinate changes and appendices with the Wing Weapons and Tactics Officer and the Munitions Squadron/Flight and report any findings to the MAJCOM. **(T-1).**

2.7.8.1. The WWM will validate and document wing 2W1XX UTC Aerospace Expeditionary Force (AEF) taskings against existing/squadron DOC statements quarterly. **(T-2).** Specifically, the WWM ensures no shortfalls exist by aligning required skill level, grade, line remarks and CFETP qualifications against tasked UTCs to include AEF taskings for all assigned 2W1XX personnel. The WWM will start a training program to eliminate any identified shortfalls. **(T-1).**

2.7.9. Resolve scheduling conflicts affecting weapons loading and DLO training programs. **(T-3).**

2.7.10. Provide input during development of local exercises involving weapons loading/armament functions, and serve as an advisor/evaluator to the Wing Inspection Team (WIT). **(T-3).**

2.7.11. Ensure a recognition program for weapons and armament personnel is established. **(T-2).**

2.7.12. Ensure standardization of load crew Composite Tool Kit (CTK) by aircraft MDS to the maximum extent possible to provide interoperability of load crews; and, in coordination with the Weapons Section NCOIC and WS Superintendent, determine the number of CTKs required. **(T-2).**

2.7.12.1. Load crew CTK contents will be approved by the WWM. **(T-2).**

2.7.13. In coordination with Wing Safety, Airfield Operations Flight, and Quality Assurance, develop an installation publication or supplement to this AFI for parking, launch and recovery of explosives-loaded aircraft, end-of-runway procedures, and to outline situations warranting impoundment of aircraft with hung ordnance, delayed release or jammed gun systems. **(T-1).**

2.7.14. The WWM will ensure arm/de-arm of munitions loaded aircraft is accomplished in approved areas. **(T-1).** Immediately-prior-to-launch and "safing" procedures may be performed in the aircraft parking area for contingencies, unit exercises, and daily training missions as quantity distance clearance allows with the approval of Wing Safety, Airfield Operations Flight, and the MXG/CC.

2.7.15. Establish procedures for inspecting and "safing" hung munitions or external stores before aircraft return to parking areas; and controlling access to aircraft until munitions are made safe and cause of hung stores is identified. **(T-1).** Aircraft guns and rockets are to be "safed" in the de-arm area before aircraft return to open ramp parking areas.

2.7.16. Inform the MAJCOM, within 24 hours, of any significant weapons or armament related issues such as dropped/hung munitions, equipment and aircraft release reliability or deficiency problems, and weapons safety or mishap issues. **(T-2). Note:** Units follow MAJCOM and local reporting instructions.

2.7.16.1. If a unit has an incident, it is important to preserve the evidence to the maximum extent allowable by operational requirements and safety. An example would be segregating an aircraft gun versus destroying it if it poses no immediate danger. This allows for evaluation of all the evidence and the ability to recreate the mishap conditions.

2.7.17. Monitor weapons release/gun fire-out rates, malfunctions and corrective actions to assess weapons and armament systems reliability. **(T-1).**

2.7.17.1. Weapons release reliability rates are calculated by dividing the number of successful releases by the number of attempts (Goal: 99%).

2.7.17.2. The gun fire-out rate is calculated by dividing the number of successful bursts by the number attempted (Goal: 98%). Once a malfunction occurs, any further attempts for the purpose of clearing the malfunction should not be counted as attempts.

2.7.18. Ensure compliance with local accountability procedures IAW AFI 11-212, *Munitions Requirements for Aircrew Training*, and AFI 21-201. **(T-1).** In conjunction with the Weapons Section(s) and Munitions Flight, the WWM will develop a standard local format for the AF Form 2434, *Munitions Configuration and Expenditure Document*. **(T-2).** A computer-generated product may be used if it contains all required information.

2.7.19. Coordinate with Maintenance Supervision, Munitions Squadron/Flight, OSS's Operations Plans, and Wing Safety in developing nuclear weapons operations procedures (e.g., convoy, custody transfer, no-lone-zone), if applicable. **(T-3).**

2.7.20. Conduct a quarterly meeting with representatives from WS, Wing Safety, Quality Assurance, Munitions Squadron/Flight, Armament Flight, and Weapons Section(s) to discuss and resolve any weapons-related issues, concerns or problems. **(T-1).** Weapons AFETS are encouraged to attend.

2.7.21. Ensure en route training requirements for inbound 2W1X1 personnel are identified and requested through the MAJCOM, as applicable. **(T-2).**

2.7.22. Monitor WRM Rack, Adapter, Pylons (RAP) and guns/components status to ensure required assets are available to support OPLAN taskings. **(T-1).**

2.7.23. Provide monthly (quarterly for ANG) manning, weapons release and gun reliability rates, equipment, and tester status (9405 report, or equivalent) to MAJCOM No Later Than (NLT) the 5th of each month. **(T-2).** The WWM will monitor the status of critical armament and weapons systems support equipment and testers for serviceability, accountability and status of TCTO modifications. **(T-2).**

2.7.23. **(AFMC)** 9405 report accuracy will be verified on the HAF Armament SharePoint site no later than the 5th of each month. **(T-2).**

2.7.23.1. The WWM will provide a valid document number and off-base requisition number for all items listed in Awaiting Parts (AWP) status in the remarks column of the report if the item is procured through USAF supply channels. **(T-2).** If parts are obtained from commercial sources, and purchased using Government Purchase Card (GPC), provide source, date ordered, and status in the remarks column.

2.7.23.2. **(Added-AFMC)** 9405 report will include all suspension equipment currently T-2 modified, to include original modification date, modification number and anticipated de-modification date. **(T-2).**

2.7.24. Utilize and involve assigned AFETS and/or contractors in weapons and armament related issues and meetings IAW AFI 21-110. **(T-2).**

2.7.25. Ensure at least two certified WS personnel are included on temporary duties (TDYs) where live munitions will be expended and on deployments exceeding 30 days to provide

Minimum Required Proficiency Load (MRPL) and recertification capability. **(T-3).** Exceptions must be approved by the WWM.

2.7.26. Develop an annual assessment program to evaluate technical proficiency of personnel assigned to WS, Weapons Sections, Armament Flights, and AFSC 2W1 personnel assigned to QA. **(T-1).** The WWM will ensure the program incorporates a process to document findings, track corrective actions and store data. **(T-2).**

2.7.27. Determine when Armament Flight personnel are required to perform load crew duties or related certifiable tasks and gain concurrence from MXG/CC. **(T-3).**

2.7.28. Determine need for a formal supervisory postload program. **(T-3).** If negative performance metrics, special missions, etc., warrant a supervisory postload program, WWM will establish procedures and a training program to ensure standardization between units. **(T-3).** Supervisors (7-skill level minimum, expediters, shift supervisors, section NCOICs, etc.) performing such inspections require initial and recurring (not exceeding 15 months interval) qualification training by WS. Training will be documented in either the WLCMT (or equivalent) or MIS, not on SCR. **(T-1).** Supervisory Postload will be documented on AF Form 2430, *Specialist Dispatch Control Log* (or equivalent). **(T-3).**

2.7.29. Ensure requirements for submitting AFTO Form 375, *Selected Support Equipment Repair Cost Estimate*, on all weapons support equipment identified in TO 35-1-24, are accomplished. **(T-1).** This process provides vital information and source documentation for ALCs to adequately reflect equipment sustainment costs, attrition rates, and to enable timely forecasting for replacement funding.

2.8. Squadron Commander (SQ/CC) Responsibilities. The SQ/CC will:

2.8.1. Ensure compliance with AFI 90-803, AFI 91-202, *The US Air Force Mishap Prevention Program*, AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*, and applicable 32-70XX and 48-XXX series AFIs necessary to perform the functions assigned to the squadron. **(T-1).**

2.8.2. Establish and administer squadron training programs IAW AFI 36-2201 and AFI 36-2650; monitor upgrade training, Personnel Reliability Program (PRP) status, and qualifications of assigned work center personnel; and, ensure MAJCOM Mandatory Course List (MMCL) requirements are met (if applicable). **(T-1).**

2.8.3. Ensure upgrade training and maintenance qualification programs emphasize quality and are not primarily focused on meeting minimum upgrade time frames. **(T-1).**

2.8.4. Monitor all personnel working outside of their primary AFSC to ensure that it does not degrade mission accomplishment. **(T-3).**

2.8.5. Establish a squadron Vehicle Control Program IAW AFI 24-302, *Vehicle Management*. **(T-1).**

2.8.6. Establish and manage squadron FCC program IAW **Chapter 11** of this instruction (if applicable). **(T-1).**

2.8.7. Protect and secure munitions as outlined in AFI 31-101, *Integrated Defense*. **(T-1).** The SQ/CC will ensure Intrusion Detection Systems (IDS) requirements are identified when required to store munitions. **(T-1).**

2.8.8. Appoint custodians to manage the *Custodian Authorization/Custody Receipt Listing* (CA/ CRL) (R14) of assigned equipement IAW AFI 23-101. **(T-1).**

2.8.9. Ensure personnel and equipment are identified and prepared to deploy for taskings IAW AFI 23-101, AFI 10-403, *Deployment Planning and Execution*, AFI 36-3802, *Personnel Readiness Operations*, and AFMAN 10-401 V2, *Planning Formats and Guidance*. **(T-1).**

2.8.10. Recommend personnel for QA duty positions. **(T-1).**

2.8.11. Designate Flight CC/Chiefs. **(T-1).**

2.8.12. Ensure the UMD is consistent with the approved organizational structure. **(T-1).**

2.8.13. Ensure proper eTools configuration (operating system, virus checkers, etc.) is maintained. **(T-1).** The SQ/CC will coordinate with lead TODO/Functional System Admistrator (FSA) to resolve TO/eTools requirements that are not being satisfied.

2.8.13.1. Ensure licenses, certification, maintenance and security of eTools (hardware and software) is conducted IAW 33-series AFIs. **(T-1).**

2.8.14. Ensure members assigned to the DIT are qualified and provided sufficient time to accurately assess the data. **(T-1).**

2.9. Maintenance Supervision Responsibilities. Maintenance Supervision consists of the Operations Officer and Maintenance Superintendent (MX SUPT). As applicable, Maintenance Supervision advises the SQ/CC on technical matters, leads a mission-focused maintenance effort, and manages resources necessary to accomplish the mission. They provide necessary administration to manage assigned responsibilities and control maintenance through Pro Supers, Flight CC/Chiefs, Section NCOICs/Chiefs. The MX SUPT is responsible to the Operations Officer. Maintenance Supervision will:

2.9.1. Ensure adequate levels of supervision and manning are balanced across all shifts to safely and efficiently accomplish the mission. **(T-1).**

2.9.2. Ensure timely and accurate engine data is provided to the EM element for all applicable engines IAW **Chapter 15** of this instruction. **(T-1).**

2.9.3. Enforce procedures to prevent FOD and dropped objects IAW **Chapter 11** of this instruction. **(T-1).**

2.9.4. Monitor and recommend updates to local IPI requirements and forward IPI recommendations to QA IAW **Chapter 6** of this instruction. **(T-1).**

2.9.5. Ensure a sufficient number of personnel are qualified to perform mission critical tasks listed on the Special Certification Roster (SCR) **Table 11.1** in **Chapter 11** of this instruction. **(T-1).** Maintenance Supervision will review and approve individuals for addition to the SCR. **(T-1).**

2.9.6. Ensure aircraft systems and equipment are available to support unit training objectives. **(T-1).**

2.9.7. Ensure distribution of maintenance cross-tell messages, QA newsletters, policy announcements, technical notifications, and other important maintenance information to all members of the organization. **(T-1).**

2.9.8. Review and evaluate management and production effectiveness. **(T-1).** Maintenance Supervision will analyze personnel and equipment performance history. **(T-1).** Initiate management actions to meet new workloads or correct reported/perceived deficiencies. **(T-1).**

2.9.9. Ensure an annual maintenance plan is developed and reconciled with the flying schedule and flying requirements to ensure maintenance can support the annual flying hour/test program. **(T-1).** Maintenance Supervision will:

2.9.9.1. Participate in the maintenance planning cycle. **(T-1).**

2.9.9.2. Utilize the MxCAP2 model for the assigned MDS (if available). **(T-1).**

2.9.9.2. **(AFMC)** See deviation at paragraph 2.2.4.3.

2.9.10. Ensure a squadron SERENE BYTE or PACER WARE response capability is available to support reprogramming requirements IAW AFI 10-703, *Electronic Warfare Integrated Reprogramming* (if applicable). **(T-1).**

2.9.11. Ensure a squadron Corrosion Control Program is implemented and managed IAW TO 1-1-8, TO 35-1-3, TO 1-1-691, MDS-specific TOs and MAJCOM instructions. **(T-1).**

2.9.12. Ensure squadron ASIP responsibilities are accomplished IAW **Chapter 11** of this instruction and AFI 63-140. **(T-1).**

2.9.13. Review and support the monthly (quarterly for ANG) Weapons Load Training (WLT) schedule. **(T-1).**

2.9.14. Ensure deferred maintenance, Pilot Reported Discrepancy (PRD), and back-ordered parts are properly managed. **(T-1).**

2.9.15. Review supply products to monitor supply discipline. **(T-1).**

2.9.15.1. Maintenance Supervison will manage DIFMs IAW AFI 23-101. **(T-1).**

2.9.15.1.1. MAJCOMs will establish maintenance turn-in times for non-DIFM assets in their supplements to AFI 23-101.

2.9.16. Ensure Reports of Survey are completed for lost assets IAW AFMAN 23-220, *Reports of Survey for Air Force Property*, and AFI 23-101. **(T-1).**

2.9.17. Ensure Special Purpose Recoverables Authorized Maintenance (SPRAM) accounts are established IAW AFI 21-103, **Chapter 9** of this instruction, and AFI 23-101. **(T-1).**

2.9.18. Ensure reporting of materiel deficiencies IAW TO 00-35D-54, *USAF Deficiency Reporting, Investigating, and Resolution.* **(T-1).**

2.9.19. Monitor requirements for CTK, special tools, and SE and take necessary action to ensure availability, as required IAW **Chapter 8** of this instruction. **(T-1).**

2.10. Flight Commander/Flight Chief (Flight CC/Chief) or Aircraft Maintenance Unit (AMU) Officer in Charge (OIC)/Chief. The Flight CC/Chief or AMU OIC/Chief will:

2.10.1. Provide management and oversight and ensure each section is adequately resourced to efficiently execute their mission. **(T-1).**

2.10.2. Manage, distribute and adjust the flight's manpower to support the maintenance plan across all shifts. **(T-1).** The Flight CC/Chief or AMU OIC/Chief will:

2.10.2.1. Equitably distribute all levels of supervision based on manning and workload to supervise all duty periods. **(T-1).**

2.10.2.2. Identify imbalances between authorizations and the number of personnel assigned, or between authorized and assigned skill levels or grades to SQ/CC and Maintenance Supervision. **(T-1).**

2.10.2.3. Manage additional duties, leaves, ancillary training, and rotate/assign personnel across shifts to balance the workload and minimize negative impacts on the work force. **(T-1).**

2.10.3. Execute the squadron's Mishap Prevention Program for the flight/work center IAW AFI 91-202 and **Chapter 1** of this instruction. **(T-1).**

2.10.3.1. Ensure all personnel obtain the required safety training, and document on the AF Form 55, *Employee Safety and Health Record,* or equivalent IAW AFI 91-202. **(T-1).**

2.10.4. Coordinate occupational and environmental health risk assessmentswith Bioenvironmental Engineering (BE) IAW AFI 91-203 to identify proper PPE and facility requirements. **(T-1).**

2.10.4.1. Monitor and ensure environmental and applicable health requirements, physicals and respirator training, initial and recurring requirements, etc., are accomplished when required for assigned personnel IAW AFI 91-203; AFI 48-137, *Respiratory Protection Program;* and AFOSH Standard 48-20, *Occupational Noise and Hearing Conservation Program*. **(T-1).**

2.10.5. Ensure organizational compliance IAW the installation ESOHMS/EMS Program. **(T-1).**

2.10.6. Advocate use of the TO improvement program, and ensure work center TO files are maintained IAW TO 00-5-1. **(T-1).**

2.10.7. Ensure Material Potentially Presenting an Explosive Hazard (MPPEH) requirements in AFI 21-201 and TO 11A-1-60, *General Instructions Inspection of Reusable Munitions Containers and Scrap Material Generated from Items Exposed to or Containing Explosives*, are complied with when certifying items associated with explosives such as: Multiple Ejection Rack (MER), Triple Ejection Rack (TER), pylons, launchers, rafts, bomb racks, ejection seats, fire suppression bottles, and gun systems and components. **(T-1).**

2.10.7.1. Flight CC/Chief or AMU OIC/Chief will ensure associated items are explosive free prior to being turned in to LRS or the Defense Logistics Agency Disposition Services (DLADS). **(T-1).**

2.10.8. Perform a weekly review of deferred maintenance in the MIS and coordinate with the Pro Super to schedule and/or validate task accomplishment. **(T-1).**

2.10.9. Ensure operator inspections and user servicing requirements are accomplished on all assigned support equipment IAW TO 00-20-1. **(T-1).**

2.10.10. Ensure records of inspection, lubrication, and maintenance of industrial equipment are maintained IAW TO 00-20-1, TO 34-1-3, *Machinery and Shop Equipment*, to include documentation of records maintained in a MIS. **(T-1).**

2.10.10. **(AFMC)** File paper records (e.g., AFTO244s), scanned copies of paper records, or electronic records (other than those in the MIS) in the file plan per the records disposition schedule (RDS). **(T-2).**

2.10.11. Ensure compliance with TO 33K-1-100-2-CD-1, *TMDE Calibration, Interval Technical Order, and Work Unit Code Reference Guide*, applicable Calibration Measurement Summaries (CMS), and TO 00-20-14, in the use, care, handling, transportation and calibration of TMDE owned by the flight. **(T-1).**

2.10.12. Evaluate maintenance quality, personnel qualifications, and training of assigned personnel. **(T-1).**

2.10.13. Review/update flight IPI requirements listing every two years and route through Maintenance Supervision. **(T-1).**

2.10.14. Ensure only designated personnel identified in the MIS verify MICAPs/Urgency of Need (UND) 1A and JA requirements. **(T-1).**

2.10.15. Select personnel to perform special certification tasks IAW **Chapter 11** and **Table 11.1** of this instruction and forward names to Maintenance Supervision for approval and addition to the SCR. **(T-1).**

2.10.16. Ensure training requirements are executed to support established training plan and individual AFSC Career Field Education and Training Plans (CFETP) IAW AFI 36-2201 and AFI 36-2650. **(T-1).**

2.10.17. Ensure Cross Utilization Training (CUT) requirements are identified as required by the unit mission IAW AFI 36-2650. **(T-1).**

2.10.17.1. Flight CC/Chief or AMU OIC/Chief will ensure CUT does not interfere with upgrade/qualification training. **(T-1).**

2.10.18. Review Maintenance Management Analysis (MMA), QA, and other management reports to determine appropriate management actions to meet new workloads, target deficiencies, and identify and correct root causes. **(T-1).**

2.10.18. **(AFMC)** Develops and implements a corrective/preventive action process. (e.g., AFCPI Practical Problem Solving Method (PPSM), 5 Whys, etc.) **(T-2).**

2.10.19. Provide inputs to maintenance and flying schedules, and execute scheduled maintenance plans. **(T-1).**

2.10.20. Establish flight/AMU-specific emergency action procedures to respond to disaster control and severe weather and forward to MOC. **(T-1).**

2.10.20.1. Review unit responsibilities pertaining to aircraft/SE movement and personnel evacuation IAW AFI 10-2501, *AF Emergency Management (EM) Program Planning and Operations.* **(T-1).**

2.10.21. Manage the flight/AMU's participation in the FOD and DOP program IAW **Chapter 11** of this instruction. **(T-1).**

2.10.22. Oversee the flight/AMU's FCC/Dedicated Crew Chief (DCC) Program (if applicable). **(T-1).**

2.10.23. Establish and enforce a flight/AMU Precious Metals Recovery Program, as applicable, IAW AFI 23-101 and TO 00-25-113, *Conservation and Segregation of Critical Alloy and Precious Metal Bearing Parts and Scrap.* **(T-1).**

2.10.24. Assign section supervisors. **(T-1).**

2.10.25. Ensure proper asset management by reviewing MIS data records, the D23, *Repair Cycle Asset Management Listing*, and other pertinent products to minimize shortfalls. **(T-1).**

2.10.25.1. When applicable, ensure warranty items are loaded in MIS according to applicable directives. **(T-1).**

2.10.25.2. Ensure Deficiency Reports (DR) are accomplished IAW TO 00-35D-54. **(T-1).**

2.10.26. Ensure repairable/non-repairable parts are promptly processed through repair channels within the required time frame IAW AFI 23-101. **(T-1).**

2.10.26.1. Team with Decentralized Materiel Support (DMS)/Flight Service Center (FSC) to conduct a quarterly reconciliation of all DIFM assets and follow up on delinquent DIFMs and document action taken to correct identified discrepancies. **(T-1).**

2.10.26.2. Flight CC/Chief or AMU OIC/Chief will identify lost assets that require Reports of Survey (ROS) and accomplish IAW AFMAN 23-220 and AFI 23-101 and forward to Maintenance Supervision for review and processing. **(T-1).**

2.10.27. Approve requirements for bench stocks IAW qualification criteria in AFMAN 23-122, *Materiel Management Procedures*. **(T-1).**

2.10.28. Consolidate flight/AMU lists of items received in supply requiring functional check, operational programming, calibration or corrosion control/painting. **(T-1).**

2.10.28.1. Flight CC/Chief or AMU OIC/Chief will submit listing to the LRS Materiel Management Flight IAW TO 00-20-3. **(T-1). Note:** Does not include TMDE IAW TO 00-20-14.

2.10.29. Coordinate all AGE requirements through the AGE Flight Chief to ensure support capability and eliminate unnecessary duplication of equipment. **(T-1).**

2.10.30. Ensure Nuclear Weapons-Related Materiel (NWRM) is controlled IAW AFI 20-110. **(T-1).**

2.11. Production Superintendent (Pro Super). Senior NCO responsible for squadron maintenance production. The Pro Super directs the overall maintenance effort of their unit. The Pro Super will be a SNCO or civilian equivalent. Squadron specific Pro Super responsibles are outlined in the applicable chapter of this instruction.

2.12. /Chief. The Section NCOIC/Chief is responsible to the Flight CC/Chief or AMU OIC/Chief for the leadership, supervision, and training of assigned personnel. The Section NCOIC/Chief is a first-line manager and supervisor of maintenance production and is the technical authority and advisor in that area. When sections are subdivided, element leaders perform the appropriate functional responsibilities. The Section NCOIC/Chief will:

2.12.1. Establish a Work Center Safety Program IAW AFI 91-202, AFI 91-203 and include any locally prescribed safety requirements (if applicable). **(T-1).**

2.12.2. Monitor, track, and ensure occupational safety, fire prevention, occupational and environmental health requirements are accomplished for assigned personnel. **(T-1).**

2.12.2.1. Section NCOIC/Chief will ensure Job Safety Training Outline is documented IAW AFI 91-202 (AF Form 55 or equivalent) for each assigned individual. **(T-1).**

2.12.3. Ensure maintenance is performed by personnel who are trained, qualified, and certified, unless under the direct supervision of a trainer or certifier. **(T-1).**

2.12.4. Advocate use of the TO improvement program, and ensure work center TO files are maintained according to TO 00-5-1. **(T-1).**

2.12.5. Establish procedures and ensure configuration control for all applicable software required for the sections assigned systems. **(T-1).** Section NCOIC/Chief will:

2.12.5.1. Establish a software sub-account to allow the shop/section access to the Automated Computer Program Identification Number System (ACPINS) or equivalent system. **(T-1).**

2.12.5.2. Ensure technicians check ACPINS/equivalent system for software updates for assigned systems. **(T-1).**

2.12.5.3. Ensure software configuration control is maintained IAW TO 00-5-16, *Software Managers and User's Manual for the USAF Automated Computer Program Identification Number System* (ACPINS) and equivalent systems are maintained by use of AF approved and authorized publications. **(T-1).**

2.12.6. Perform production and supervisory inspections. **(T-1).**

2.12.7. Handle classified parts/materiel in accordance with AFI 23-101. **(T-0).**

2.12.8. On a daily basis, review, monitor and correct, as needed, the work center's scheduled and deferred events in the MIS. **(T-1).**

2.12.8.1. Section NCOIC/Chief will close, reschedule, or defer all events beyond their scheduled start date and time (e.g., IMDS-CDB screen #100/380 and G081 screen #8069/9129A/67033). **(T-1).**

2.12.9. Review transcribed AFTO Form 781-series forms, work center MIS data entries for the previous day, and all preceding non-duty days, for job accuracy and completeness (IMDS-CDB Screen #100 and G081 Screen #67137). **(T-1).**

2.12.10. Ensure all personnel assigned to nuclear equipped units annotate the Work Center Event (WCE) with the statement "Two-Person Concept Applies" IAW AFI 21-204 and applicable 91-series AFIs. **(T-1).**

2.12.11. Validate scheduled aircraft document reviews using applicable MIS/records check package and automated aircraft forms IAW **Chapter 15** of this instruction. **(T-1).**

2.12.12. Develop and manage the Work Center Training Program. **(T-1).** The Section NCOIC/Chief will:

2.12.12.1. Evaluate the quality of maintenance, training, and personnel qualifications, track training requirements and ensure training documentation is complete and accurate. **(T-1).**

2.12.12.2. Conduct On the Job (OJT) training/certifying as required. **(T-1).**

2.12.13. Review and recommend changes for maintenance tasks requiring IPIs to the Flight CC/Chief or AMU OIC/Chief. **(T-1).**

2.12.14. Review, evaluate, and take corrective action based on QA and other inspection reports. **(T-1).**

2.12.15. Ensure all required work center publications necessary for the work center to meet its functional requirements are current and available for use. **(T-1).**

2.12.16. Ensure section personnel coordinate all flightline maintenance with the Flightline Expediter. **(T-1).**

2.12.17. Manage CTK and supply programs (e.g., bench stocks, and operating stocks) IAW **Chapter 8** and **Chapter 9** of this instruction. **(T-1).** Section NCOIC/Chief will:

2.12.17.1. Ensure sections are organized with tools, equipment and materiel as close to the Point of Maintenance (POMX) as possible, as approved by the Flight CC/Chief or AMU OIC/Chief, without jeopardizing accountability and control procedures. **(T-1).**

2.12.17.2. Ensure the *Bench Stock Review Listing* (M04) is reviewed monthly and all recommendations are adjudicated to most efficiently meet mission needs. **(T-1).**

2.12.18. Ensure custodial responsibilities are accomplished on all assigned equipment IAW AFI 23-101, AFI 23-111, and AFMAN 23-122. **(T-1).**

2.12.19. Manage the section's Repair Cycle Program. **(T-1).** The Section NCOIC/Chief will review the *Repair Cycle Asset Management Listing* (D23) and other pertinent supply products to ensure proper supply discipline daily. **(T-1).**

2.12.20. Establish procedures to control, store, and manage Alternate Mission Equipment (AME); Maintenance, Safety, and Protective Equipment (MSPE); and -21 equipment IAW AFI 21-103. **(T-1).**

2.12.21. Identify items requiring calibration (does not include TMDE) or operational check before installation and provide a list of these items to the Flight CC/Chief or AMU OIC/Chief. **(T-1).**

2.12.22. Recommend individuals for addition to the SCR to the Flight CC/Chief or AMU OIC/Chief. **(T-1).**

2.12.23. Participate in and enforce the Bad Actor Program IAW TO 00-35D-54. **(T-1).**

2.12.24. Manage Hazardous Material (HAZMAT) and ESOH items IAW AFI 32-70XX-series instructions, and AFI 90-803. **(T-1).**

2.12.24.1. The Section NCOIC/Chief will ensure HAZMATs are used IAW TOs and conform to indicated Military Specifications (MIL-Spec) and monitor the Qualified Products List (QPL)/Qualified Product Database (QPD) for changes to specified HAZMAT. **(T-1).**

2.12.24.1. **(AFMC)** Most, but not all, specs for chemicals have QPLs. The QPL/QPD for military specs can be found at **http://quicksearch.dla.mil**. The QPL for SAE/AMS specs can be found at: **https://www.eauditnet.com**.

2.12.25. Ensure assigned Nuclear Certified Equipment (NCE) (applies to both nuclear and non-nuclear tasked units) comply with requirements outlined in AFI 63-125, *Nuclear Certification Program*, and associated MAJCOM supplements. **(T-1).**

2.12.26. Ensure Dull Sword reports are submitted for nuclear deficiencies IAW AFMAN 91-221, AFI 91-204. **(T-1).**

2.12.27. Ensure aircraft -6 TO system, inspections, TCTOs and aircraft functional checks (except Phase (PH)/ Hourly Post-flight (HPO)) are accomplished as required to prevent overdue or over flight of equipment. **(T-1).**

2.12.28. Comply with TCTO performing work center requirements below:

2.12.28.1. Report all deficiencies in technical instructions and applicability to the TCTO managing agency and QA. **(T-1)**.

2.12.28.2. Attend TCTO planning meetings. **(T-1)**. Review the TCTO prior to the meeting and request clarification of any requirements from QA and the appropriate TCTO managing agency during the meeting.

2.12.28.3. Inventory TCTO kits for completeness prior to starting work. **(T-3)**. If a discrepancy exists, contact the TCTO managing agency to resolve shortages.

2.12.28.4. Perform the inspection or modification procedures outlined in the TCTO and document results or findings in the MIS. **(T-1)**.

2.12.28.5. If an inspection TCTO generates a requirement for parts, the performing work center will create a new Job Control Number (JCN) and enter the discrepancy in the AFTO Form 781A, *Maintenance Discrepancy and Work Document*, or applicable equipment record and order the required parts. **(T-3).** Inspection TCTOs are complete when the inspection is finished.

2.12.28.6. Order and maintain all HAZMAT required to comply with TCTOs and provide document numbers to the TCTO managing agency and supply TCTO monitor. **(T-3)**.

2.12.28.7. Validate technical instructions and data on AFTO Form 82, *TCTO Verification Certificate*, when performing TCTO kit proofing IAW TO 00-5-15, *Air Force Time Compliance Technical Order Process*. **(T-1)**.

Chapter 3

AIRCRAFT MAINTENANCE SQUADRON (AMXS)

3.1. General. The AMXS provides direct MGN support by consolidating and executing on-equipment activities necessary to produce properly configured, mission ready weapon systems to meet contingency or training mission requirements. AMXS personnel service, inspect, maintain, launch, and recover assigned/transient aircraft (if applicable).

3.2. Maintenance Supervision Responsibilities. In addition to common responsibilities outlined in **Chapter 2** of this instruction, Maintenance Supervision will:

3.2.1. Ensure standardized procedures and organizations among AMUs. **(T-1).**

3.2.2. Establish hot brake response procedures in coordination with base support agencies (i.e. Fire Emergency Services and CDDAR Team). **(T-1).**

3.2.3. Monitor the squadron FCC program, if applicable. **(T-1).**

3.2.4. Ensure personnel use and understand the purpose of the AF Form 2408, *Generation Maintenance Plan*, and the AF Form 2409, *Generation Sequence Action Schedule*, or electronic equivalent. **(T-3).**

3.2.5. Ensure an explosive safety and chaff/flare academics and loading program is established for units without a 2W1 AFSC assigned (when applicable). **(T-1).**

3.2.6. Publish procedures covering the storage, control, and handling of starter cartridges (if applicable). **(T-1).**

3.2.7. Provide input to MMA for the monthly metrics report to MAJCOM. **(T-2).**

3.2.8. Provide input for development of the annual maintenance plan IAW **Chapter 15** of this instruction. **(T-1).**

3.2.9. **(Added-AFMC)** Ensure all personnel who are dispatched for any task requiring landing gear handle movement are authorized and qualified to perform landing gear handle movement and are listed on the special certification roster (SCR), by aircraft type and personnel duties; gear retraction supervisor, 7-level team supervisor, gear handle operator (B-1, B-2, B-52, 135 Series, C-17, C-5, 747, CV-22). **(T-2).**

3.2.9.1. **(Added-AFMC)** Specific duties of the gear retraction supervisor are as follows:

3.2.9.1.1. **(Added-AFMC)** During aircraft and equipment maintenance, ensure no movement of the gear handle from the full down position without 7-level or civilian equivalent authorization and verification that the handle needs to be moved for the task being performed. **(T-2).**

3.3. Aircraft Maintenance Unit (AMU). AMUs may include the following sections: Aircraft, Specialist, Weapons, Debrief, Supply, and Support. MAJCOMs may approve additional sections and AFSC make up within existing sections to efficiently meet unique weapon system maintenance support requirements. **Note:** Organization modifications must be approved IAW AFI 38-101.

3.4. AMU OIC/Chief Responsibilities. Allocates personnel and resources to the production effort. In addition to the common responsibilities in **Chapter 2** of this instruction, the AMU OIC/Chief will:

3.4.1. Review PRDs daily and ensure proper maintenance actions are taken. **(T-1).**

3.4.2. Review all aborts and ensure proper maintenance actions are taken. **(T-1).**

3.4.3. Monitor aircraft PH/Isochronal (ISO)/Periodic/Home Station Check (HSC) flow. **(T-1).**

3.4.4. Ensure a sufficient number of personnel are engine run qualified to meet maintenance requirements IAW **Chapter 11** of this instruction. **(T-1).**

3.5. Production Superintendent (Pro Super). In squadrons with eight or fewer assigned aircraft, Pro Super and Flightline Expediter duties may be combined. The Pro Super will:

3.5.1. Make the final determination on aircraft status. **(T-1).**

3.5.2. Sign the Exceptional Release (ER) IAW TO 00-20-1 when authorized by the MXG/CC IAW **Chapter 11** and **Table 11.1** of this instruction. **(T-1).**

3.5.3. Participate in developing and executing the monthly and weekly flying and maintenance schedules/plans. **(T-1).**

3.5.4. Manage the maintenance production effort by assigning priorities to meet the flying and maintenance schedules. **(T-1).**

3.5.5. Fully understand actions required by the squadron under OPLAN 8010 or contingency plans. **(T-1).**

3.5.5.1. Develop, ensure currency of, and direct the aircraft generation sequence. **(T-1).**

3.5.6. Fully understand and be prepared to implement specific disaster control duties and squadron responsibilities pertaining to aircraft/SE movement and personnel evacuation procedures developed IAW AFI 10-2501. **(T-1).**

3.5.6.1. Pro Super will maintain a current copy of the on-base disaster map with cordon overlay and appropriate functional checklists outlining duties during disaster scenarios. **(T-1).**

3.5.7. Determine, track, and report aircraft/systems status IAW AFI 21-103. **(T-1).**

3.5.8. Establish and track Estimated Time In Commission (ETIC). **(T-1).**

3.5.9. Monitor unit CDDAR Program activities and local procedures designed to protect personnel and prevent further damage to aircraft, equipment, and other resources. **(T-1).**

3.5.10. Inform MOC of the maintenance effort and coordinate with MOC, Flightline Expediter, and other squadrons for support. **(T-1).**

3.5.10.1. Pro Super will provide MOC with aircraft/systems status updates as required. **(T-1).**

3.5.11. Verify aircraft/system is in an authorized status IAW MDS-specific Minimum Essential Subsystem List (MESL) and AFI 21-103 prior to verifying MICAP conditions. **(T-1).**

3.5.12. Verify aircraft weapons/load configurations are authorized IAW AFI 63-104. **(T-1).**

3.6. Flightline Expediter. The Flightline Expediter ensures maintenance is accomplished, coordinates on all aircraft maintenance actions, and is assigned for each AMU Aircraft Section. Flightline Expediters work for the Pro Super and manage, control and direct resources to accomplish maintenance. Flightline Expediters will:

3.6.1. Remain on the flightline, to the fullest extent possible, when maintenance personnel are performing flightline maintenance and launching/recovering aircraft. **(T-1).** Flightline Expediters will not perform production inspections (e.g., sign off "Red Xs" and perform IPIs). **(T-2).**

3.6.2. In conjunction with the Weapons Expediter, ensure requirements in AFI 21-201 for flightline munitions accountability are strictly followed. **(T-1).**

3.6.3. Develop and implement disaster control duties and squadron responsibilities pertaining to aircraft/SE movement and personnel evacuation IAW AFI 10-250. **(T-1).**

3.6.4. Maintain and have available for immediate use copies of the following as a minimum: flying schedule, emergency action and functional checklists, base grid map with cordon overlay, IPI listings, Minimum Essential Subsystem List, Quick Reference List (QRL) (if developed), a Work Unit Code (WUC) manual, and tracking device for aircraft status. **(T-1).**

3.6.4.1. Track , as a minimum, the following aircraft status information: aircraft serial number, location, priority, status and ETIC, configuration, OAP condition codes, fuel load, munitions load, and remarks. Show all limitations against the Full Systems List (FSL) and Basic System List (BSL) column as itemized on the MESL. **(T-1).** Ensure devices depicting aircraft status comply with program security requirements. **(T-1).**

3.6.5. Follow established CANN procedures and ensure all CANNs are accurately documented in the aircraft/system forms and MIS as described in **Chapter 11** of this instruction. **(T-1).**

3.6.6. Ensure aircraft OAP sampling is completed IAW AFI 21-124 and applicable technical data. **(T-1).**

3.6.7. Ensure parts are ordered with appropriate priorities and relay document numbers to the Pro Super, MOC, and appropriate technicians. **(T-1).**

3.6.8. Request support beyond AMU capability to the MOC. **(T-1).**

3.6.9. Direct AGE drivers to position AGE as required and notify the driver of AGE on the flightline or sub-pools that require maintenance. **(T-1).**

3.6.10. Ensure timely and accurate aircraft status (e.g., discrepancies, WUC/Logistics Control Number (LCN), ETIC, job completion) and configuration status is reported IAW AFI 21-103 to the Pro Super and MOC. **(T-1).**

3.6.11. Ensure completed aircraft forms are provided to the debrief function by the end of the flying day if debriefs have been suspended due to surges. **(T-1).**

3.7. Aircrew and Maintenance Debrief Section. Debrief is conducted at the termination of each sortie/mission or when a sortie/mission is aborted. Aircraft scheduled for turn-around sorties/missions need not be debriefed if returned in landing status Code 1 or 2. However,

debriefing is required, regardless of landing status, after the last flight of the day for each aircrew. MAJCOMs operating RPAs will develop and publish debrief procedures for Remote Split Operations in their supplements or addendum for both aircraft and ground control stations to adequately capture all maintenance discrepancies. The Debrief Section will:

3.7.1. Use aircraft fault reporting manuals and include fault codes when documenting discrepancies in the aircraft forms. **(T-1).** Debrief Section will use automated debrief tools such as the Computerized Fault Reporting System. **(T-2).**

3.7.1.1. Debrief Section will develop aircrew debriefing guides. **(T-1).** QA will review and approve debriefing guides every two years. **(T-1).**

3.7.1.1. **(AFMC)** Include FO/FOD reporting in debriefing guide. **(T-2)**

3.7.2. Implement procedures for reporting dropped objects, aborts, In-Flight Emergencies (IFEs), flight control impoundment actions, and engine malfunctions. **(T-1).**

3.7.3. Use operational utilization update screens in MIS to enter flying time information. **(T-1).** Debrief Section will ensure flying times and installed engine Event History Recorder (EHR) readings, for both home station and deployed sorties/missions, are updated no later than the next duty day after occurrence. **(T-1).**

3.7.4. Check AFTO Form 781H, *Aerospace Vehicle Flight Status and Maintenance Document* to ensure updates to airframe time and applicable servicing data (e.g. in-flight/hot pit refueling) are entered on the AFTO Form 781H or equivalent and/or applicable debrief system during the pilot/aircrew debrief. **(T-1).**

3.7.5. Input discrepancy and deviation information, utilization, and applicable flight data (to include landing status, system capability IAW AFI 21-103 and other applicable cause codes) into the MIS. **(T-1).** Unless using an automated 781 process, do not send AFTO Form 781-series forms to Operations Squadron(s) or to Aviation Resource Management before MIS updates. Use local backup procedures for recording data when the MIS is unavailable.

3.7.6. Utilize MIS to identify and research discrepancies for repeat/recur trends and document them accordingly on the AFTO Form 781A. **(T-1).** Debrief Section will ensure previously documented discrepancies are reviewed and identified as repeat/recurs. **(T-1).**

3.7.6.1. Debrief Section will identify repeat/recurs on automated debriefing sortie recaps and on the AFTO Form 781A. **(T-1).**

3.7.7. Use the appropriate landing status code (**Table 3.1**) and the appropriate system capability code (**Table 3.2**) for the completion of a sortie/mission. **(T-1).**

3.7.8. Provide the MOC with aircraft identification numbers and system WUCs for each aircraft debriefed with a landing status Code-3 IAW **Table 3.1** using the approved MDS MESL IAWAFI 21-103. **(T-1).**

3.7.9. Enter one of the deviation cause codes (**Table 3.3**) into the MIS to indicate the reason for the deviation and the agency that caused a deviation IAW AFCSM 21-574, *Automated Debriefing* (**https://ceds.gunter.af.mil/Publications.aspx?AIS=35**). **(T-1).**

3.7.10. Collect and submit ASIP aircraft usage data IAW the MDS specific TOs, AFI 63-140, and **Chapter 11** of this instruction. **(T-1).**

3.7.11. If MIS is not available, use blank printouts as manual documentation method. **(T-2).** If deployed, send documents to home station for data transcribing by the most expeditious means available. Debrief Section will turn in, validate and reconcile all documents with the MIS when it becomes available. **(T-1).**

Table 3.1. Landing Status Codes.

CODE	STATUS
Code 0	Ground Abort
Code 1	Aircraft Mission Capable (MC) with no additional discrepancies
Code 2	Aircraft or system has minor discrepancies but is capable of further mission assignment.
Code 3	Aircraft or system has major discrepancies in mission essential equipment that may require extensive repair or replacement prior to further mission assignment. The discrepancy may not affect safety-of-flight and the aircraft may be Not Mission Capable (NMC) flyable.
Code 4	Aircraft or system has suspected or known radiological, chemical, or biological contamination.
Code 5	Aircraft or system has suspected or known battle damage.
Note: Debrief will enter code “8” in MIS for aircraft debriefed as code “4” or “5”. MESL requirements determine if aircraft status is NMC or PMC.	

Table 3.2. System Capability Codes.

CODE	STATUS
Code 0	System flown with a known discrepancy, no additional discrepancies noted. System can be used.
Code 1	System used and performed satisfactorily. No maintenance required.
Code 2	System used and performed satisfactorily. A minor malfunction exists, but system is capable of further mission assignment.
Code 3	System performance was unsatisfactory. This system did not cause an abort.
Code 4	System performance was unsatisfactory. This system caused or contributed to an abort.
Code 5	System out-of-commission prior to takeoff.
Code 6	System installed but not used.
Code 7	System not installed.
Code 8	Aircraft or system has suspected or known radiological/biological contamination.

Table 3.3. Deviation Cause Codes.

CODE	DEVIATION REASON
ATx	Air Traffic
GAA	Ground Abort, before engine start, maintenance
GAB	Ground Abort, after engine start, before taxi, maintenance
GAC	Ground Abort, after taxi, maintenance
HQT	Higher Headquarters
HQN	Higher Headquarters, NAF
HQP	Higher Headquarters, other
MTx	Maintenance
OPx	Operations
SUx	Supply
SYx	Sympathy
WXx	Weather
OTx	Other
Xxx	MAJCOM/local use
Note: Use x for any character for MAJCOM/local use.	

3.8. Aircraft Section. The Aircraft Section is the primary work center responsible for maintaining assigned aircraft. This section performs tasks to include servicing, scheduled and unscheduled maintenance, pre-flights, thru-flights, basic post-flights, home station checks, special inspections, corrosion control, cleaning, ground handling, launch/recovery of aircraft, troubleshooting and adjustment, on-equipment repairs and component removal/replacement, documenting maintenance actions, and managing aircraft forms. AMUs with 18 or more Primary Aerospace Vehicle (Aircraft) Inventory (PAI) aircraft may have two Aircraft Sections. The Aircraft Section consists of Aircraft Technicians. Refer to **Chapter 11** of this instruction for FCC responsibilities.

3.8.1. Aircraft Technician Responsibilities. Aircraft Technicians manage and maintain assigned aircraft. Aircraft Technicians will:

3.8.1.1. Perform ground handling, servicing, -6 inspections, alert duties, maintenance ground tests, corrosion control, lubrication and maintenance and modification preparations, as applicable, on the assigned aircraft/system. **(T-1).**

3.8.1.2. Inventory on-aircraft -21 equipment when this responsibility is not assigned to another function. **(T-1).**

3.8.1.3. Perform engine operation when qualified and certified. **(T-1).**

3.8.2. Dedicated Crew Chief (DCC) Program. The DCC program is optional with MXG/CC approval. The objective of a DCC program is to directly assign a maintenance person to each aircraft to provide continuity/accuracy of aircraft forms, aircraft status, scheduled maintenance, and improve aircraft appearance. DCCs manage and supervise maintenance on their aircraft. DCCs are selected on the basis of initiative, management and leadership ability, and technical knowledge. When authorized, ensure the DCC's and Assistant Dedicated Crew Chief (ADCC) name and rank is stenciled or painted on their assigned aircraft. Use only authorized wing paint scheme and marking procedures in TO 1-1-8. In addition to Aircraft Technician responsibilities, DCCs, if assigned, should:

3.8.2.1. Accompany their aircraft through scheduled inspections and assist the Inspection Section NCOIC/Chief as needed.

3.8.2.1.1. Attend pre- and post-dock meetings.

3.8.2.1.2. Assist the Inspection Section NCOIC/Chief with completing the required document review and validation at the end of the inspection.

3.8.2.2. Coordinate with Pro Supers and expediters for downtime to accomplish scheduled and unscheduled maintenance.

3.8.2.3. Manage deferred discrepancies.

3.9. Specialist Section. The Specialist Section is responsible for aircraft systems troubleshooting, on-equipment repairs, component removal and replacement, aircraft avionics systems, classified item management, aircraft ground handling, servicing, and cleaning. The section may include avionics, propulsion, hydraulic, and electro/environmental technicians and other specialties approved through higher headquarters. When used, the Specialist Section Expediter coordinates maintenance priorities with the Pro Supers and Flightline Expediters.

3.9.1. In addition to the common responsibilities in **Chapter 2** of this instruction, the Specialist Section Chief will ensure accurate and timely pod and SE status is updated or verified daily in Reliability, Availability, Maintainability, for Pods (RAMPOD) IAW AFI 21-103 for pods under the control of the AMXS. **(T-1).**

3.9.2. Avionics Specialists will:

3.9.2.1. Perform PACER WARE, SERENE BYTE message, or TCTO reprogramming of avionics systems. **(T-1).**

3.9.3. Electronic Warfare (EW) specialist functions may be combined with the avionics specialists. EW Specialists will:

3.9.3.1. Maintain inventory control of all installed Electronic Counter Measure (ECM) AME and ECM pods. **(T-1).**

3.9.3.2. Perform reprogramming of avionics/electronic warfare systems (to include electronic attack pods) IAW applicable mission directives, PACER WARE/SERENE BYTE messages, or TCTO requirements. **(T-1).**

3.9.3.3. Load contingency and training configuration settings in ECM pods, infrared countermeasures systems, and RWR/RTHW systems, unless the equipment is assigned to another section. **(T-1).**

3.9.4. Propulsion Specialists will:

3.9.4.1. Troubleshoot, repair, and replace aircraft propulsion systems and components. **(T-1).**

3.9.4.2. Perform engine flightline blade blending. **(T-1).**

3.9.4.3. Perform flightline engine borescope inspections. **(T-1).**

3.9.5. Electro/Environmental (E&E) Specialists will:

3.9.5.1. Troubleshoot, repair and replace aircraft E&E system components including aircraft environmental control, bleed air, vacuum, pneumatic, installed fire extinguishing and suppressant systems, Liquid Oxygen (LOX) and Gaseous Oxygen (GOX) systems, and On-Board Oxygen Generating Systems (OBOGS) and components. **(T-1).**

3.9.5.2. Remove and install In Flight Refueling (IFR) carts and fire bottle squibs. **(T-1). Note:** Ensure only approved temporary storage locations are used for these components.

3.9.6. Hydraulic Specialists will maintain authorized on-equipment/off-equipment pneumatic and hydraulic systems and components. **(T-1).**

3.10. Weapons Section. The Weapons Section is responsible for supporting flightline munitions loading/unloading and weapon maintenance operations. The Weapons Section may consist of two elements: Weapons Loading and Weapons Maintenance. Weapons Section personnel are trained and utilized in both functions as needed to maximize both mission capability and develop individual functional expertise. The Weapons Section may be comprised of a Weapons Section NCOIC/Chief, Weapons Expediters, a NCOIC for Weapons Loading, Load Crew personnel and a NCOIC for Weapons Maintenance and Weapons Maintenance personnel. Assistant NCOICs are authorized per applicable manpower standards. When units are TDY/deployed where no AFSC 2W100 is assigned, the senior ranking 2W1 is the WWM. MAJCOMs will determine applicable portions of the Weapons Section responsibilities for contract organizations. Contract units are organized according to their respective contract. **Exception:** See ANG supplement for details on the Weapons Section organizational structure within ANG.

3.10. (AFMC)Weapons Section. Weapons Section responsibilities for contract organizations will be determined by the contracting office through the multifunctional team process. See AFI 63-138.

3.10.1. Weapons Section NCOIC/Chief. In addition to the common section NCOIC responsibilities in **Chapter 2** of this instruction**,** the Weapons Section NCOIC/Chief will:

3.10.1. **(AFMC)** Civilian equivalent will be synonymous with Weapons section NCOIC.

3.10.1.1. Assist the WWM in recommending distribution of wing 2W1X1 personnel. **(T-3).**

3.10.1.2. Review status of weapons section 2W1's positions on Unit Manpower Personnel Roster (UMPR) and advise WWM and AMU leadership on personnel concerns. **(T-3).**

3.10.1.3. Monitor load crew and PRP status (if applicable) and equipment and tester availability. **(T-2).** The Weapons Section NCOIC/Chief will advise the AMU OIC/Chief and WWM regarding factors which affect training, weapons loading or maintenance capabilities, personnel actions affecting manning levels (special duty, reassignment, etc.) or other key weapons related issues. **(T-2).**

3.10.1.4. In coordination with the WS Superintendent, identify and select the best qualified personnel to be loading standardization and lead crew members. **(T-2).**

3.10.1.5. Ensure the minimum UCML/TTML number of load crews are formed, trained and certified to perform the mission. **(T-1).** Maintain load crew integrity during training and evaluations to the maximum extent possible.

3.10.1.6. Ensure personnel receive a documented supervisory review and complete required prerequisite training before entering initial load crew certification or performing flightline operations (e.g., cockpit familiarization, firefighting, AGE). **(T-2).**

3.10.1.7. Annually review UCML/TTMLs and the unit tasked UTCs (for equipment and personnel) and UMD to identify any disconnects or problems. **(T-1).**

3.10.1.8. Maintain a visual aid or automated product depicting the current status of assigned load crews and members. **(T-1).** Printed products are not required if computer systems are networked or modem-interfaced with the WS load crew management system for on-line updates.

3.10.1.9. Ensure weapons load training aircraft requirements and load crew proficiency evaluation schedules, in coordination with the WS Superintendent, are developed and included in the weekly and monthly maintenance plans. **(T-2).**

3.10.1.10. Review and apply the Weapons Standardization Program, integrated loading procedures, dual loading procedures (if applicable), and be familiar with local munition loading/maintenance areas. **(T-1).** Utilize the Weapons Load Crew Management Tool (WLCMT). **(T-2).**

3.10.1.11. Review all AF Form 2419 load crew training, certifications, and decertification documentation. **(T-2).**

3.10.1.12. Ensure overall quantity of load crew CTKs are no less than the minimum number of required load crews, including lead crews, listed on the UCML. **(T-1)**. For bomber units and those that support operational test and evaluations, RPA units, or training operations, coordinate with the WWM in determining the number of required load crew CTKs.

3.10.1.13. Ensure a checklist for each UCML/TTML munition is on hand for each assigned load crew CTK. **(T-1). Exception:** Not applicable in units using electronic media devices (e.g. F-22 PMA, F-35); test units are authorized reduced quantities.

3.10.1.14. Review all AFTO Form 22, *Technical Manual (TM) Change Recommendation and Reply*, or Technical Order Data Change Requests (TODCR) prior to submission. **(T-1).** The Weapons Section NCOIC/Chief will route all weapons loading related requests (i.e. -16, -33 TOs, and F-22A TOD) to WS and WWM for review. **(T-2).**

3.10.1.15. Ensure Locally Manufactured Equipment (LME) and Munitions Materiel Handling Equipment (MMHE) meet requirements outlined in **Chapter 8** of this instruction. **(T-1).**

3.10.1.16. Ensure Tamper Detection Indicators for nuclear applications are controlled IAW AFI 91-104, *Nuclear Surety Tamper Control and Detection Programs*. **(T-1).**

3.10.1.17. Track all assigned AME and Normally Installed Equipment (NIE). **(T-1).** If installed, track in MIS by aircraft tail number and position. Track uninstalled equipment in either the MIS or another equivalent means approved by the WWM.

3.10.1.18. Ensure positive control/accountability/serviceability for suspension equipment accessories (cables, fittings, adapters, etc.). **(T-1).**

3.10.1.19. Coordinate with WS Superintendent to ensure MPRL and recertification capability exists on TDYs where live munitions will be expended and on deployments exceeding 30 days. **(T-1).** Exceptions must be approved by the WWM. **(T-3). Exception:** Not applicable to helicopter/CV-22 units.

3.10.1.20. Establish a munitions custody account for dummy test rounds (as applicable, if not tracked by Armament Flight). **(T-3).**

3.10.1.21. Ensure prior to loading live and inert munitions that all requirements in **Chapter 10** of this instruction have been met and the WWM is aware of any changes that affect the munitions policy requirements. **(T-1).**

3.10.1.22. Notify the WWM within 24 hours of any significant issues such as dropped/hung munitions, aircraft armament system or equipment malfunctions and mishaps. **(T-3).** Take appropriate follow up actions and provide updates until all corrective actions have been taken. Monitor actions taken by supporting agencies on dispensers, suspension equipment, training munitions, etc., which were involved with specific system malfunctions.

3.10.1.23. Report weapons release reliability and gun fire-out rates; along with corrective actions, if required, to the WWM by the first of each month for the previous month. **(T-3).**

3.10.1.23. **(AFMC)** Report weapons release reliability and gun fire-out rates; along with any corrective actions required, daily using the 9405 report on the HAF Armament SharePoint site. **(T-2).**

3.10.1.24. Provide WWM status on authorized/on-hand quantities and serviceability of AME/NIE/WRM, armament testers, support equipment, and personnel assigned (to include physical profiles/security status, and mal-assigned if applicable) by the first of each month. **(T-3).**

3.10.1.24. **(AFMC)** For AME/NIE/WRM, armament testers and support equipment, units will provide daily updates using the 9405 report on the HAF Armament SharePoint site. **(T-2).**

3.10.1.25. Ensure requirements for submitting AFTO Form 375 on all weapons support equipment identified in TO 35-1-24, are accomplished. **(T-3).**

3.10.1.26. Establish, monitor, and verify supervisory inspections on elements assigned with equipment and CTK's are completed. **(T-3).**

3.10.1.27. **(Added-AFMC)** Maintain current copy of task assignment listing (TAL) for assigned aircraft. Ensure individuals review TAL and applicable -16/-33 series TOs prior to reporting for initial and recurring weapons load training. **(T-2).**

3.10.1.28. **(Added-AFMC)** Establish a SPRAM account to track encoder/decoders and power supplies (as applicable, if not tracked by Armament Systems Flight). **(T-2).**

3.10.1.29. **(Added-AFMC)** Establish a SPRAM account to track ruggedized nuclear remote interface units (as applicable, if not tracked by Armament Systems Flight). **(T-2).**

3.10.2. **Weapons Expediter.** The Weapons Expediter reports to the Weapons Section NCOIC/Chief and is responsible for managing all munitions loading and armament systems maintenance operations. The Weapons Expediter must be, as a minimum, a 2W171 and knowledgeable of the assigned MDS maintenance and loading tasks. **(T-1).** The Weapons Expediter coordinates maintenance priorities with the Pro Super and Flightline Expediters. The Weapons Expediter will:

3.10.2.1. Remain on the flightline during all munitions loading/unloading. **(T-3).**

3.10.2.2. Remain on the flightline to the maximum extent possible, when maintenance operations are being performed and during launch and recovery of aircraft. **(T-3).** The Weapons Expediter will:

3.10.2.2.1. Monitor the safety of flightline weapons operations. **(T-0).**

3.10.2.2.2. Supervise and provide technical guidance to individuals during weapons release system fault isolation, troubleshooting, and maintenance actions as needed. **(T-3).**

3.10.2.2.3. Conduct weapons production and supervisory inspections. **(T-2).**

3.10.2.3. Maintain copies of the following items in the Weapons Expediter's vehicle (if assigned): flying schedule, emergency action checklists, base grid map with cordon overlay identifying flightline Live Ordnance Loading Area (LOLA), IPI listings, MESL, QRL (if developed) and/or WUC manual. **(T-3).**

3.10.2.4. Track status and configuration of aircraft, suspension equipment, and weapons. **(T-1).** Ensure 100 percent documented accountability of in use AME/NIE by location and status, whether installed or stored. **Note:** ARC Weapons Expediters need not track accountability of stored AME if being tracked by the Weapons Section or Armament Flight.

3.10.2.5. Maintain a separate daily AF Form 2430, or locally produced standardized form with WWM approval, for each shift. **(T-1).** The Weapons Expediter will ensure all

required documentation is complete and accurate. **(T-1).** As a minimum, the following fields of the AF Form 2430 will be completed: "AS OF" (date), "JOB CONTROL" (filled out for maintenance actions that have a JCN, e.g., 18-month inspections, PRDs), not required for weapons loading tasks)), Aircraft "(ACFT)/TRAINER"(MDS), "SERIAL" (tail number/serial number of component), "TIME" (("Required" = start time, "Dispatched" = time completed, "Completed" = status code, (e.g., C/W, C/F, CANX)), "SPECIALIST(S) DISPATCHED" (load/maintenance crew number/ name), "DISCREPANCY & REMARKS" (discrepancy/task performed). **(T-1).** Transcribe any actions not complied with or cancelled to the next shift's AF Form 2430.

3.10.2.5.1. Units may maintain one single AF Form 2430 (or equivalent) for weekly scheduled maintenance, in addition to the daily shift AF Form 2430 (or equivalent). Transcribe any actions not complied with or cancelled to the next week's scheduled maintenance AF Form 2430 (or equivalent).

3.10.2.5.2. **(Added-AFMC)** Retain copies of completed AF Form 2430s (or equivalent) on file for six months. **(T-2).**

3.10.2.6. Manage munitions assets expenditures as follows:

3.10.2.6.1. Fill out an AF Form 2434, *Munitions Configuration and Expenditure Document*, or locally produced form, on all aircraft configured with munitions (includes impulse cartridges and chaff/flare). **(T-1).** Record by serial number and location or position all armament related AME, NIE, or support equipment from which munitions items are expended. **Note:** Record NIE serial numbers only when munitions are loaded directly on the NIE versus the AME.

3.10.2.6.2. Comply with flightline munitions accountability requirements outlined in AFI 21-201. **(T-1).** The Weapons Expediter will provide copies of final expenditure documents to PS&D, the Munitions Flight and Armament Flight. **(T-1)**.

3.10.2.7. Coordinate with the MOC or Munitions Control for the delivery and pick-up of munitions items. **(T-3).**

3.10.2.8. Inspect at least 25 percent of conventional loaded aircraft to meet scheduled front-lines (and spares) to validate safety/security of aircraft prior to flight; document inspection on AF Form 2430 (or equivalent). **(T-1).** If negative trends are apparent, identify the trend and inspect remaining flyers prior to flight. Inform Weapons Section NCOIC/Chief on the negative trend that is identified during inspection.

3.10.2.9. Ensure inspection requirements are carried forward/documented for all items that have specific periodic inspections (e.g., Electronic Control Units, Gun System Control Panel). **(T-1).** Inform PS&D when actions affect the aircraft inspection schedule.

3.10.2.10. Ensure aircraft and equipment forms and MIS documentation is complete, accurate and accomplished. **(T-1).**

3.10.2.11. Coordinate accomplishment of all scheduled and unscheduled maintenance and inspections with the Pro Super. **(T-3).** Inform the Pro Super of all start and stop times, status changes, delays and extensions.

3.10.2.12. Ensure all mission specific safing gear is controlled and accounted for to preclude loss and potential FOD. **(T-1).**

3.10.2.13. Ensure Captive Air Training Munitions (CATM) missile devices are managed IAW the munitions policy requirements outlined in **Chapter 10** of this instruction (if applicable). **(T-1).**

3.10.2.14. Track acceleration monitor assemblies by serial number, showing aircraft tail number and installed position. **(T-3).**

3.10.2.15. **(Added-AFMC)** Ensure AME and SPRAM accountability and control requirements are met IAW AFI 21-103. **(T-2).**

3.10.3. **Weapons Loading Element.** The Weapons Loading Element is responsible for munitions loading and unloading during daily aircraft training, operational test and evaluations, and contingency operations. If a Weapons Maintenance Element is not formed, the Weapons Loading Element is responsible to perform all on-equipment armament system maintenance. The Weapons Loading Element consists of an NCOIC and Weapons Load Crews, (Weapons Load Team Chief and load crew members).

3.10.3.1. Weapons Loading Element NCOIC. The Weapons Loading Element NCOIC is responsible to the Weapons Section NCOIC/Chief. If an NCOIC of loading is not designated, the requirements below will be the responsibility of the Weapons Section NCOIC/Chief. The Weapons Loading Element NCOIC will:

3.10.3.1.1. Advise Weapons Section NCOIC/Chief on load crew status and load crew member concerns and issues related, but not limited to training, certification, qualification, and load crew personnel issues. **(T-3).**

3.10.3.1.2. Review and become familiarized with the Weapons Standardization Program, integrated loading procedures, dual loading procedures (if applicable), and local munition loading and maintenance areas. **(T-3).**

3.10.3.1.3. Review AF Form 2419 on load crew training, certifications, and decertification documents. **(T-3).**

3.10.3.1.4. For nuclear tasked units,ensure all loading supervisors and load crew members are trained to perform weapon system fault isolations and troubleshooting IAW AFI 91-107, *Design, Evaluation, Troubleshooting , and Maintenance Criteria for Nuclear Weapon Systems*. **(T-1).**

3.10.3.2. Weapons Load Team Chief. The Weapons Load Team Chief is responsible to the Weapons Expediter for munitions loading and armament systems maintenance (if applicable). Weapons Load Team Chiefs are typically NCOs; however, Senior Airmen may perform conventional munition load team chief duties with concurrence of the WWM in writing. **(T-1).** The Weapons Load Team Chief will:

3.10.3.2.1. Supervise the loading and/or unloading of only one aircraft at a time. **(T-1).**

3.10.3.2.2. Control all actions during the munitions load/unload operations environment and ensure the number of personnel in the area during explosives handling operations are kept to a minimum. **(T-1).** The Weapons Load Team Chief may authorize other individuals to work on the aircraft provided they are briefed on emergency procedures, perform no maintenance or inspections which would jeopardize safety, hamper munition loading operations, or violate technical data.

Access to the cockpit and/or applying power to the aircraft by other than the load crew during loading operations is prohibited unless coordinated through and approved by the Weapons Load Team Chief. **Exception:** During simultaneous loading/unloading and refueling during Concurrent Servicing Operations (CSOs), the Concurrent Servicing Supervisor (CSS) is in charge and should still coordinate any aircraft activity with the Weapons Load Team Chief (See **Chapter 11** of this instruction for CSO guidance).

3.10.3.2.3. Ensure compliance with AFI 91-101 and AFI 91-107 when responding to maintenance actions on nuclear loaded aircraft. **(T-1).**

3.10.3.3. Certified weapons loading personnel will load and unload munitions in support of aircraft operations. **(T-1).**

3.10.3.3.1. Certified weapons loading personnel may be task qualified to perform on-equipment armament maintenance, per direction of Weapons Section Chief.

3.10.4. **Weapons Maintenance Element.** The Weapons Maintenance Element is responsible for all on-equipment weapons maintenance, to include fault isolation and troubleshooting. The Weapons Maintenance Element may be required to perform munition loading/unloading operations as determined by Weapons Section NCOIC/Chief. **Note:** If the Weapons Maintenance Element is not formed, these tasks are performed by loading personnel.

3.10.4.1. Weapons Maintenance Element NCOIC. The Weapons Maintenance Element NCOIC is responsible to the Weapons Section NCOIC/Chief. The Weapons Maintenance Element NCOIC will:

3.10.4.1.1. Advise Weapons Section NCOIC/Chief on all maintenance personnel issues (training, certification, qualification, and personal etc.). **(T-3).**

3.10.4.2. Weapons maintenance personnel are responsible to the Weapons Expediter for all armament systems maintenance and munition loading (if applicable). **Note:** Weapons maintenance personnel may be certified as load crew members, per direction of Weapons Section NCOIC/Chief. Weapons maintenance personnel will:

3.10.4.2.1. Install and remove armament related suspension equipment, launchers, adapters, etc., on assigned aircraft to support configuration requirements for daily and contingency operations. **(T-1).**

3.10.4.2.2. Install and remove all armament AME and NIE to Facilitate Other Maintenance (FOM) or for repair action. **(T-3).**

3.10.4.2.3. Maintain equipment historical records (AFTO Form 95) for AME, and weapons system NIE, if equipment is not assigned to Armament Flight. **(T-3).**

3.10.5. **Non-Standard Weapons** (e.g. F-35, CV-22/Helicopter/RPAs)**.** Non-standard units will organize into a consolidated Weapons Section, which will be a composite of both the Weapons Section and Armament Flight. **(T-3).** Contract units are organized according to their respective contract. The Weapons Section NCOIC/Chief must also comply with the applicable requirements of the section chief responsibilities of **Chapter 2** of this instruction, to include **paragraph 3.10** Weapons Section and **paragraph 4.6** Armament Flight responsibilities. **(T-3). Note:** When no WWM or WS Superintendent is assigned, the

Weapons Section NCOIC/Chief will perform the duties of the WWM and WS Superintendent.

3.10.5.1. Personnel will be formed into maintenance/load crews and will be qualified to perform on/off equipment maintenance. **(T-1).**

3.10.5.2. Coordinate with WWM to ensure sufficient quantities of qualified WS personnel are included on TDYs where live munitions will be expended and on deployments exceeding 30 days to provide qualification capability.

3.10.5.3. When Weapon Expediter manpower authorizations do not exist, the WWM will select and appoint a 2W171 individual(s) to perform weapons expediter duties within **paragraph 3.10.2** of this instruction. **(T-3).**

3.10.5.4. Weapons Section personnel will be qualified to perform on/off- equipment maintenance and munitions loading. **(T-3).**

3.10.5.4.1. Personnel may perform rescue/guillotine hoist arm and de-arm procedures.

3.10.5.5. Weapons Section will track and issue small arms for armory security, maintenance security and courier operations for assigned/qualified weapons personnel only when required by unit commander authorization. **(T-2).**

3.10.5.5.1. Weapons Section NCOIC/Chief will ensure personnel are trained to perform required security of high risk weapons at home station and deployed locations. **(T-3).** Training will as a minimum include armory, anti-robbery, theft/recovery and resource protection procedures IAW AFI 31-101, *Integrated Defense*. **(T-3).**

3.10.5.6. Weapons Section does not repair, maintain, or issue aircrew/mobility small arms weapons (i.e., M9, M16, etc.).

3.10.5.7. Personnel will not load ammunition on weapons systems where the flight engineer or aerial gunner performs this task (e.g. CV-22/Helicopters). **(T-3).**

3.10.5.8. Geographically-Separated Weapons Sections. If a Weapons Section is geographically separated (determined locally) from the squadron support section, then items listed in **paragraph 5.7.5** of this instruction (Armament Support Section) must be available to support the geographically separated Weapons Section. **(T-3).**

3.11. Support Section. The Suppot Section may include the following elements/functions to support AMU flightline maintenance activities; support (CTKs/special tools, E-Tools, test equipment, TOs, bench stock), -21 equipment, AME, mobility equipment and DMS. Personnel will be assigned to the Support Section for a minimum of 12 months. **(T-3).** 2W1X1 personnel may be required to maintain task qualification/certification. Support Sections must standardize procedures across the AMXS for security, control, and accountability of equipment. **(T-1).** Materiel support procedures in this section do not apply to aircraft supported by Contractor Operated and Maintained Base Supply (COMBS). The Support Section will:

3.11.1. Maintain TOs IAW TO 00-5-1. **(T-1).**

3.11.2. Maintain bench, shop and operating stocks IAW AFI 23-101, and **Chapter 9** of this instruction. **(T-1).**

3.11.3. Ensure maintenance, control and storage of assigned AME, -21 equipment, and Maintenance, Safety, and Protective Equipment (MSPE) IAW AFI 21-103. **(T-1).**

3.11.3.1. Support Section will develop local procedures to control and store other equipment not identified as -21 equipment (e.g., aircraft galley items, U-2 pod panels, aircraft pylon attachment cover panels, aircraft covers/plugs) using AFI 21-103 guidelines. **(T-1).**

3.11.4. Control and maintain TMDE IAW TO 33-1-27, *Logistic Support of Precision Measurement Equipment*. **(T-1).**

3.11.4.1. Support Section will comply with TO 33K-1-100-2-CD-1 and TO 00-20-14, requirements for the use, care, handling, transportation, and calibration of TMDE owned by the section. **(T-1).**

3.11.5. Maintain and manage squadron Land Mobile Radio (LMR) IAW **Chapter 11** of this instruction (as applicable). **(T-1).**

3.11.6. Monitor the status of critical support equipment and testers for serviceability, accountability and status of TCTO modifications. **(T-1).** Support Section will provide monthly critical support equipment status update to Maintenance Supervision. **(T-3).**

3.11.7. Maintain tools/CTKs IAW **Chapter 8** of this instruction. **(T-1).**

3.12. AMU Decentralized Materiel Support (DMS). In addition to the responsibilities in **Chapter 9** of this instruction for DMS procedures, AMU DMS personnel will:

3.12.1. Requisition parts and use supply management products. Initiate follow-up action when necessary. **(T-1).**

3.12.2. Notify the Flightline Expediter of all back-ordered parts. **(T-1).**

3.12.3. Develop and maintain a QRL as needed and provide it to technicians. **(T-2).**

3.12.4. Track and process DIFM assets, to include warranty parts IAW AFI 23-101. **(T-1).**

3.12.4.1. AMU DMS personnel will notify AMU leadership when DIFM asset turn-in times exceed requirements outlined in AFI 23-101. **(T-1).**

3.12.5. Manage reusable containers IAW AFI 24-203, *Preparation and Movement of Air Force Cargo*, and TO 00-20-3. **(T-1).**

3.12.6. Control and manage aircraft Tail Number Bins (TNBs) if stored within the Support Section. **(T-1). Note:** When FOM assets are collocated with TNB, they must be similarly controlled and managed.

3.12.7. Coordinate with the Pro Super and Flightline Expediter(s) for "mark for" changes. **(T-1).**

3.12.8. Manage the AMU's CANN program supply transactions and the associated documentation. **(T-1).**

3.13. (Added-AFMC) Logistics Test Squadron (MXLS). Performs Logistics Test and Evaluation (LT&E) activities. Provides continued emphasis and awareness of LT&E activities and the necessity for early LT&E involvement in Developmental Testing. Establishes standards and procedures for accomplishment of LT&E. Ensures compliance with statutory directives; Air

Force environmental management, safety, security instructions; and TOs. Develops and provides training and tools to improve the LT&E process within the acquisition community. Assists in developing logistics test plans, data analysis plans, and technical reports. Assists local management in test execution during LT&E program involvement. Acts as a focal point with Engineering and Program Management for LT&E activities. Technical and Safety reviews independent of test program are required IAW AFI 99-103. Plans, directs, and manages the development and acquisition of technical data in support of System Groups. Manages the Operating Locations' Central Technical Order Control Units. Provides staff assistance in the development and implementation of Technical Order Development policies and procedures. **(T-2).**

3.13.1. **(Added-AFMC)** Logistics Test and Evaluation. The test methodology, criteria, and tools for evaluating and analyzing the product support elements as they apply to a system under test. The objective is to influence system design as early as possible in the acquisition cycle, and verify that the logistics support being developed is capable of meeting peacetime and wartime employment objectives. **(T-2).**

3.13.1.1. **(Added-AFMC)** Test Support Manager responsibilities include, but are not limited to:

3.13.1.1.1. **(Added-AFMC)** Identify opportunities for LT&E, initiate the test process, and assign management responsibilities.

3.13.1.1.2. **(Added-AFMC)** Manage the LT&E plan and report writing process.

3.13.1.1.3. **(Added-AFMC)** Manage the creation, modification, and usage of data collection tools.

3.13.1.1.4. **(Added-AFMC)** Manage test data software development, installation and training.

3.13.1.1.5. **(Added-AFMC)** Identifies test support needed in training, facilities, special equipment, funding, and other logistics areas as required.

3.13.1.1.6. **(Added-AFMC)** Provide long range and intermediate logistical planning and support for tests and programs.

3.13.1.1.7. **(Added-AFMC)** Work with program engineers, test designers, developmental engineers, and program managers regarding plans for the test and evaluation workload.

3.13.2. **(Added-AFMC)** Technical Order Development. Plan, direct and manage the development and acquisition of technical data in support of system group requirements.

3.13.2.1. **(Added-AFMC)** Technical Order Control Unit Manager responsibilities include, but are not limited to:

3.13.2.1.1. **(Added-AFMC)** Assist Systems Technical Order Manager in development of technical manual contractual requirements.

3.13.2.1.2. **(Added-AFMC)** Assist in establishing and supporting technical order control units.

3.13.2.1.3. **(Added-AFMC)** Schedule/witness technical order certification/verification events.

3.13.2.1.4. **(Added-AFMC)** Participates in contractor quality assurance (QA) processes.

3.13.2.1.5. **(Added-AFMC)** Schedules/attends guidance conferences.

3.13.2.1.6. **(Added-AFMC)** Chairs technical interchange meetings.

3.13.2.1.7. **(Added-AFMC)** Supervises/performs in-process reviews.

3.14. (Added-AFMC) Global Hawk (GH) In-Flight Maintenance Procedures and Documentation.

3.14.1. **(Added-AFMC)** GH Remotely Piloted Vehicle (RPV) Documentation. GH RPV reporting will use standard Air Force landing status codes. Mission Crew Element (MCE) and Launch and Recovery Element (LRE) status will be reported separately from aircraft status (i.e., Aircraft Code 1, MCE Code 1, LRE Code 1). Aircraft, MCE and LRE will retain separate 781 forms binders. Mission capable status will also be tracked separately. Discrepancies discovered during flight will not be documented on the AF Form 781As or entered into IMDS for any asset directly involved with the mission while the aircraft is airborne. Units will develop a manual debrief data sheet which is maintained and controlled by the debrief section by mission number. This debrief data sheet will be used to annotate in-flight maintenance and pilot reported discrepancies. Continuation sheets will be annotated as #2, #3, etc., of XX pages. Once the mission ends and the post-mission debrief is completed, the 781 forms, IMDS and mission capable status will be annotated. **(T-2).**

3.14.2. **(Added-AFMC)** GH RPV Ground Station In-flight Maintenance procedures. The pilot in control of the system during the mission will always be the final authority as to what, when and for how long maintenance actions will be performed during flight. UAS Ground Station In-flight Maintenance is intended to provide repair of maintenance discrepancies while allowing the mission to continue. Discrepancies discovered during flight will not be documented on the AF Form 781As or entered into IMDS until after the mission is ended. Upon notification from the pilot, maintenance technicians will be dispatched to the MCE/LRE. Maintainers will respond with the debrief data sheet, provided by the debrief section. The pilot will document the discrepancy and provide written release for maintenance on the debrief data sheet. Maintenance will not be performed until the pilot releases the aircraft for maintenance. The maintainer will return the debrief data sheet (with maintenance actions annotated) to the debrief section for inclusion into the final mission debrief. If additional maintenance actions are responded to during the same mission, the same debrief data sheet will be used. Use continuation sheets as required. **(T-2).**

Chapter 4

MAINTENANCE SQUADRON (MXS)

4.1. General. The MXS supports MGN operations by providing centralized back shop support to perform on and off equipment maintenance tasks that are assigned to a specific back shop function. The MXS provides both organizational and intermediate level maintenance described in the "Maintenance Concept" section in **Chapter 1** of this AFI. Bases with permanently assigned Centralized Repair Facilities (CRF), which support enterprise RN functions, will develop and document the division of responsibilities between the MGN and RN, as outlined in **Chapter 13** of this AFI, to ensure both local and enterprise mission requirements are met. **(T-1).** IAW AFI 38-101, the MXS may consist of personnel from various AFSCs organized into flights: Propulsion Flight, Avionics Flight, TMDE Flight, Accessories Flight, AGE Flight, Fabrication Flight, Armament Flight, Maintenance Flight, and Munitions Flight. The MXS maintains AGE, munitions, off-equipment aircraft and support equipment components; performs on-equipment maintenance of aircraft and fabrication of parts; and provides repair and calibration of TMDE. **Note:** For purpose of this instruction, MXS represents MXS, Equipment Maintenance Squadron (EMS), and Component Maintenance Squadron (CMS).

4.1. (AFMC)[DEV] The 412 MXS is organized into seven flights versus nine.

4.1.1. **(Added-AFMC)** [DEV] The 412 MXS/MXMA, Component Repair Flight, consolidates Avionics Flight, Armament Flight, and the Electro- Environmental, Battery Shop and Egress functions of the Accessory Flight in addition to the Tow Targets Section.

4.1.2. **(Added-AFMC)** [DEV] The 412 MXS/MXMX, Maintenance Flight, consolidates the functions of the Maintenance Flight and the pneudraulic and fuels functions of the Accessories Flight.

4.1.3. **(Added-AFMC)** [DEV] The 412 MXS/MXMW, Munitions Flight is responsible for the Armament (MXMR) function for Bomber aircraft only due to the geographic location/separation at Edwards AFB, South Base.

4.2. Maintenance Supervision Responsibilities. Maintenance Supervision may consist of an Operations Officer and Superintendent and is responsible to the SQ/CC for maintenance production. Maintenance Supervision manages the resources to accomplish the workload. In addition to general responsibilities in **Chapter 2** of this instruction, Maintenance Supervision will:

4.2.1. Review and consolidate monthly maintenance plan inputs from flights/sections and forward to Maintenance Operations PS&D. **(T-1).**

4.2.2. Participate in the review of base level repair capability to ensure it meets the requirements of AFI 20-117, AFI 21-123, TO 00-20-3, and MAJCOM supplements. **(T-1).**

4.2.3. Ensure EOR procedures for transient aircraft are developed IAW TO 00-20-1 and MAJCOM supplements. **(T-1).**

4.2.4. Ensure procedures are developed by the MXS and WS for required weapons loading actions on transient aircraft, storage of transient aircraft impulse cartridges, and requisition and maintenance of weapons safing equipment for common transient types of aircraft. **(T-1).**

4.2.5. Ensure local manufacture capability and fabrication process is controlled IAW this instruction. **(T-1).**

4.2.6. Ensure MXS personnel utilize Engineering Technical Service (ETS) personnel and the Joint Engineering Data Management Information and Control System (JEDMICS) (**https://jedmics.af.mil/webjedmics/index.jsp**) to obtain information and specifications when the information in TOs does not provide enough detail. **(T-1). Note:** For drawings not available electronically, contact the appropriate JEDMICS help desk.

4.2.7. Appoint MXS Pro Super(s) (if applicable). **(T-1).**

4.3. MXS Production Superintendent (Pro Super). The MXS Pro Super will:

4.3.1. Monitor flightline operations and coordinate support and priority with other squadron Pro Supers and MOC. **(T-1).** MXS Pro Super will focus overall maintenance effort towards MXG maintenance priorities. **(T-1).**

4.3.2. Identify production requirements and shortfalls to Maintenance Supervision. **(T-1).**

4.4. Accessories Flight. Responsible for performing on/off-equipment maintenance of Electrical and Environmental (E&E), egress, fuel, and hydraulic systems and equipment.

4.4. (AFMC)[DEV] The 412 MXS does not have an accessories flight. The below responsibilities will be accomplished by the appropriate flight listed in section 4.1.

4.4.1. Accessories Flight CC/Chief Responsibilities. In addition to the common responsibilities in **Chapter 2** of this instruction, the Accessories Flight CC/Chief will:

4.4.1.1. Ensure an egress training program is established IAW this instruction. **(T-1).**

4.4.1.2. Ensure E&E and hydraulic personnel rotation plans are developed to comply with core task upgrade requirements. **(T-1).** Rotation plans are N/A to the ARC; however, all core tasks must be complied with. **(T-1).**

4.4.1.3. Ensure explosives are controlled and stored in approved storage areas/containers. **(T-1).**

4.4.2. Electrical and Environmental (E&E) Section. The E&E Section performs authorized local manufacture, repair, overhaul, testing, modification, and inspection of aircraft and SE electrical components, wiring harnesses, batteries, and charging units. The E&E Section will:

4.4.2.1. Ensure battery disposal procedures meet applicable environmental standards and batteries are controlled for accountability purposes. **(T-0).**

4.4.2.2. Perform on/off-equipment maintenance on aircraft electrical and environmental systems and components. **(T-1).**

4.4.2.3. Repair LOX/GOX/Liquid Nitrogen (LN2) servicing units/carts. **(T-1). Note:** AGE performs chassis, enclosure, and trailer maintenance on gaseous and cryogenic servicing units and all maintenance on Self-Generating Nitrogen Servicing Carts (SGNSC).

4.4.2.4. Perform off-equipment maintenance for aircraft and aircrew Carbon Dioxide (CO2) cylinders. **(T-1).**

4.4.2.5. Perform off-equipment maintenance on type MA-1 portable breathing oxygen cylinders (portable walk around bottles) and regulators, to include removing/replacing the regulator and purging the bottle. **(T-1).** Ownership and storage of these cylinders remain with the appropriate support section.

4.4.3. Egress Section. The Egress Section maintains aircraft egress systems, components, and trainers (e.g., aircraft ejection seats, extraction and escape systems, egress components of jettisonable canopies, explosive components of escape hatches/doors); and stores egress explosive components that are removed to FOM during egress systems maintenance. MAJCOMs will identify the base level organization responsible for locating inadvertent beacon activations and configuring survival kit personnel locator beacons (on-aircraft) and Aircrew Flight Equipment (AFE) (in-shop) in the correct mission configuration.

4.4.3. **(AFMC)** Egress, with the assistance of AFE, will locate inadvertent beacon activations. Egress will reset beacons when located On-Aircraft and AFE will reset when in-shop. Egress will also ensure proper mission configuration as directed by battle staff/special instructions (SPINS). **(T-2).**

4.4.3.1. The Egress Section will:

4.4.3.1.1. Perform all off-equipment ejection seat maintenance in the egress maintenance facility. **(T-1).**

4.4.3.1.2. Ensure all personnel use the Demand Response Team during any task requiring the removal/installation of explosive components, and during egress final inspections. **(T-1).** 4.4.3.1.2.1. Demand Response Teams will be comprised of individuals who are certified to perform egress maintenance. **(T-1).** At least one team member must be a certified egress journeyman. **(T-1).**

4.4.3.1.2.1. **(Added-AFMC)** Egress augmentees may be utilized as part of an egress maintenance team to perform on-equipment maintenance, such as ejection seat and canopy removals or installations and egress final inspections. Do not use augmentees to perform egress off-equipment maintenance actions. **(T-2). Note: Ejection seats undergoing periodic maintenance are exempt from the demand-response concept once explosive components have been removed.**

4.4.3.1.3. Coordinate with PS&D and monitor the weekly maintenance schedule to identify egress items requiring removal for scheduled time changes/maintenance. **(T-1).**

4.4.3.1.4. Utilize a facility that meets the requirements of AFMAN 32-1084, *Facility Requirements*. **(T-1).** Locations are established IAW AFMAN 91-201 to store explosive components and ensure they are properly licensed.

4.4.3.1.4. **(AFMC)** Egress facilities will have limited access to ensure system integrity. **(T-2).**

4.4.3.1.4.1. Egress Section will ensure licensed explosive area will not exceed the licensed Net Explosive Weight (NEW) capacity for each Hazard Class Division (HC/D) without approval from Wing Safety. **(T-1).** See AFMAN 91-201 for additional restrictions.

4.4.3.1.4.1. **(AFMC)** Only egress section personnel will be authorized

unescorted entrance to the egress licensed explosive location. **(T-2).**

4.4.3.2. The Egress Section NCOIC/Chief will:

4.4.3.2.1. Ensure ejection systems are safed IAW with 00-80G-series technical orders and AFMAN 91-201 prior to an aircraft being placed on static display. **(T-1).**

4.4.3.2.2. Ensure egress systems on training aircraft are de-armed/"safed" IAW MDS specific TOs when an aircraft is used for Fire Emergency Services and/or aircrew extraction training. **(T-1).**

4.4.3.2.3. Ensure aircraft (to include GITA) are "safed" IAW 00-80-series TOs. **(T-1).**

4.4.3.2.4. Ensure all permanently decommissioned static display aircraft explosive devices are removed and turned in to munitions inspections IAW AFI 21-201. **(T-1).** Egress Section will sign the appropriate block on the AF Form 3580, *USAF Museum Aerospace Vehicle Static Display Acceptance Condition and Safety Certificate*, which is retained by the Historical Property Custodian(s). **(T-1)**

4.4.3.2.5. Request assistance from Explosive Ordnance Disposal (EOD) when egress explosive devices are damaged or suspected to be unsafe. **(T-1).**

4.4.3.2.5.1. **(Added-AFMC)** When requesting changes or updates to the need-date of any cartridge actuated device/propellant actuated device (CAD/PAD) item, coordinate with PS&D and Munitions Accountable System Officer (MASO) in sufficient time to preclude emergency issue requests. Refer to AFI 21-201, *Munitions Management*, for emergency issue and contingency issue requests. **(T-2).**

4.4.3.2.6. Establish egress training program requirements and conduct reviews IAW AFI 36-2650. **(T-1).**

4.4.3.2.6. **(AFMC)** Classification training of Egress personnel will meet mandatory training requirements contained in AFI 36-2201 (or intra-service equivalent), AFI 91-202, this AFI, and the CFETP. **(T-2).**

4.4.3.2.6.1. As a minimum, the program will include: a master training plan, explosive safety certification requirements, and MIS time change documentation qualification minimums. **(T-1).**

4.4.3.2.6.1.1. **(Added-AFMC)** Civil service 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 of classification training requirements. Waiver requests will be submitted to the applicable 2A6X3 MAJCOM functional manager for review then forwarded to the 2A6X3 Career Field Manager for final approval/disapproval. If waiver is disapproved, individuals must complete classification training. **(T-2).**

4.4.3.2.6.2. Certification requirements:

4.4.3.2.6.2.1. Egress personnel must successfully complete an Air Education and Training Command (AETC) Egress Technician Course for the specific

aircraft to be maintained. **(T-1). Exception:** ACES II-trained and certified egress SSgt 5-levels and above being reassigned to another base or unit maintaining ACES II-equipped aircraft are not required to complete the Organizational Maintenance (O/M; on-equipment) egress technician course unless required by the Egress Section NCOIC/Chief.

4.4.3.2.6.2.1.1. **(Added-AFMC)** Personnel are certified to perform egress systems maintenance by demonstrating adequate proficiency to a designated certifying official in the egress systems work center. Certification pass/fail criteria will be established by the egress work center supervisor. Document certification in accordance with AFI 36-2201. Retrain any individual who fails the practical evaluation until the individual demonstrates adequate proficiency or withdraw the individual from training. If egress personnel are withdrawn from training, retrain in accordance with AFI 36-2201. **(T-2).**

4.4.3.2.6.2.1.2. **(Added-AFMC)** Initial Certification of Non-Egress who augment egress technicians or perform Quality Assurance Evaluations of Egress Systems: Non-egress personnel must successfully complete an AETC egress technician course for the specific aircraft to be maintained. EXCEPTION: AFE personnel do not have to complete the technician course unless they are to be employed as egress augmentees. **(T-2).**

4.4.3.2.6.2.1.3. **(Added-AFMC)** After completing the AETC technician course, non-egress personnel will be initially certified in accordance with paragraph 4.4.3.2.6. Non-egress personnel will also be recertified in accordance with paragraph 4.4.3.2.6.4.2.2. **(T-2).**

4.4.3.2.6.3. Decertification requirements:

4.4.3.2.6.3.1. Decertify egress personnel after not having performed egress maintenance for more than 18 months. **(T-1).** Instructing and inspecting egress maintenance is not considered performing maintenance.

4.4.3.2.6.3.2. Document decertification in accordance with AFI 36-2201. **(T-1).**

4.4.3.2.6.4. Recertification requirements:

4.4.3.2.6.4.1. Recertify egress personnel who have not performed egress maintenance for 18 months. **(T-1).**

4.4.3.2.6.4.2. Recertification must be accomplished by a 2A673 trainer/certifier. **(T-1).**

4.4.3.2.6.4.2.1. **(Added-AFMC)** The purpose of recertification is to ensure personnel still maintain the required knowledge and skills to safely maintain and/or inspect egress systems. **(T-2).**

4.4.3.2.6.4.2.2. **(Added-AFMC)** Recertify non-egress personnel at least every 180 days. **(T-2).**

4.4.3.2.6.4.2.3. **(Added-AFMC)** COR/QAE personnel exclusively performing contract surveillance do not have to be recertified. If these

personnel are performing egress maintenance, they must be recertified. **(T-2).**

4.4.3.2.6.4.2.4. **(Added-AFMC)** Recertification procedures are identical to initial certification procedures and will be accomplished in accordance with paragraph 4.4.3.2.6. Document recertification in accordance with AFI 36-2201. **(T-2).**

4.4.3.2.7. Review and validate all egress familiarization training documents at least every 24 months. **(T-1).**

4.4.3.2.8. Ensure the egress TCI data in the MIS is accurate. **(T-1).** Egress Section NCOIC/Chief will:

4.4.3.2.8.1. Ensure automated data products will be updated whenever an egress item is replaced to ensure the annual TCI forecast is correct. **(T-1).**

4.4.3.2.8.2. Ensure separate databases are not used to manage the egress TCI program. **(T-1).**

4.4.3.2.9. Ensure component background information is provided to PS&D to include a list of all components having multiple part numbers with a different service life. **(T-1).**

4.4.3.2.9.1. At least annually, Egress Section NCOIC/Chief will meet with PS&D to verify each aircraft's egress data. **(T-1).**

4.4.3.2.9.2. Document the annual verification on the AF Form 2411, *Inspection Document* maintained in the aircraft jacket file. **(T-1).**

4.4.3.2.10. Establish egress systems inspection and documentation requirements. **(T-1).**

4.4.3.2.10.1. A certified egress production inspector (i.e Red X, IPI certified and tracked on the SCR IAW **Table 11.1)** will inspect any integral part of the egress system when any maintenance other than a visual inspection is performed. **(T-1).**

4.4.3.2.10.1. **(AFMC)** Newly assigned uncertified egress personnel who have completed Classification Training may assist in performing egress systems maintenance. These personnel will never clear (sign off) AFTO Form 781-series entries, MIS or condition tags. **(T-2).**

4.4.3.2.10.1.1. The inspection must be an egress final inspection unless another inspection is prescribed by technical data. **(T-1).**

4.4.3.2.10.2. Egress personnel will conduct an egress final every 30 days on ejection seats that have integrated personnel/recovery parachutes and/or survival kits as part of the seat. **(T-1). Exception:** N/A to F-35.

4.4.4. Fuel Systems Section. The Fuel Systems Section repairs, functionally checks, and inspects aircraft fuel systems, fuel tanks, hydrazine systems, in-flight refueling receptacle systems, and related components.

4.4.4.1. The Fuels Systems Section will:

4.4.4.1.1. Perform maintenance on AME external fuel tanks, Conformal Fuel Tanks (CFT), and Weapons Bay Tanks (WBT) and provides temporary storage for CFTs/WBTs. The Fuels Systems Section will:

4.4.4.1.1.1. Maintain serial number inventory accountability for all removable external fuel tanks IAW AFI 21-103. **(T-1).**

4.4.4.1.1.2. Establish a local MOA/MOU (MXS with AMXS or equivelents) governing the storage, issue/receipt, and inventory control of in-use removable external fuel tanks. **(T-1).**

4.4.4.1.1.2. **(AFMC)** Within the MOA/MOU, local units with approval from MXG/CC (or equivalent) will designate which squadron(s) is responsible for management of external fuel tanks, CFTs, WBTs, SPRAM account(s)/assets per AFI 23-101. **(T-2).**

4.4.4.1.1.3. Purge and preserve external tanks that require shipment. **(T-1).**

4.4.4.1.2. Perform all maintenance and inspections on WRM fuel tanks. **(T-1).** The Fuels System Section will:

4.4.4.1.2.1. Purge and preserve fuel tanks for storage and shipment. **(T-1). Note:** LRS is responsible for the storage, delivery, and shipment of fuel tanks.

4.4.4.1.2.2. Meet quarterly with installation War Reserve Materiel Officer (WRMO)/WRM Non-Commissioned Officer (NCO) and LRS representatives to review inspection criteria for stored WRM tanks, schedule tank inspections and maintenance, and report discrepancies identified during WRM monthly walk-through inspections. **(T-1).**

4.4.4.1.2.3. **(Added-AFMC)** Establish notification procedures to inform the base fire department when open fuel tank maintenance is in progress and when maintenance is complete. **(T-2).**

4.4.4.2. In addition to the common responsibilities outlined in **Chapter 2** of this instruction, the Fuel Systems Section NCOIC/Chief will:

4.4.4.2.1. Establish controls to prevent unauthorized entry into fuel cell and hydrazine repair areas. **(T-1).**

4.4.4.2.2. Provide required qualification training to all personnel who enter aircraft fuel tanks and/or open fuel tank areas to perform maintenance or to provide assistance. **(T-1).**

4.4.4.2.3. When required, ensure Hydrazine Response Teams are formed with only team members/supervisors possessing AFSC 2A6X4. **(T-1).** Refer to TO 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*, TO 42B1-1-18, *General Procedures for Handling of H-70,and* review MDS-specific TOs and MAJCOM/Lead Command directives for additional information on hydrazine hazards and management. **Note:** In the ARC and US Air Force Air Demonstration Squadron (Thunderbirds) only the Hydrazine Response Team Supervisor must possess AFSC 2A6X4. The Fuel Systems Section NCOIC/Chief will:

4.4.4.2.3.1. Ensure initial and refresher (annual) hydrazine safety training is

completed for all hydrazine response team members IAW TO 42B1-1-18. **(T-1).**

4.4.4.2.3.2. Integrate Hydrazine Response Team responsibilities into the CDDAR Program and local IFE functional checklists (as applicable). **(T-1).**

4.4.4.2.4. Perform safety inspections on facilities to ensure open tank repair areas, and equipment used for open fuel tank or hydrazine maintenance meet MDS-specific TOs, TO 42B1-1-18 and TO 1-1-3, *Inspection and Repair of Aircraft Integral Tanks and Fuel Cells* requirements. **(T-1).**

4.4.4.2.5. Manage and document non-grounding fuel leaks according to TO 1-1-3, and MDS-specific TOs. **(T-1).**

4.4.4.2.6. Establish a Confined Space Entry Program IAW TO 1-1-3 and AFI 91-203. **(T-1).**

4.4.4.2.7. Establish a Respiratory Protection Program IAW AFI 48-137. **(T-1).**

4.4.4.2.7.1. All respiratory training requirements are documented on AF Form 55 or equivalent IAW AFI 91-202.

4.4.4.2.8. **(Added-AFMC)** Meet monthly with PS&D to schedule external fuel tanks for inspection or TCTOs. **(T-3).**

4.4.4.2.9. **(Added-AFMC)** Coordinate with PS&D to schedule aircraft with non-grounding fuel leaks through the fuel systems repair facility to prevent further deterioration. **(T-3).**

4.4.4.3. **(Added-AFMC)** Nestable Fuel Tank Build Up (NFTBU) Team Members and Training. The fuel systems section NCOIC identifies 2A6X4 personnel as NFTBU cadre members and establishes a training program. **(T-2)** The NFTBU team will be augmented by non-2A6X4 personnel in the wing during build up operations. **(T-3)** NFTBU Cadre team members will:

4.4.4.3.1. **(Added-AFMC)** Attend initial NFTBU training at an Air Education and Training Command (AETC) Training Detachment (TD). **(T-2).**

4.4.4.3.2. **(Added-AFMC)** Conduct annual refresher NFTBU training for all fuel systems section personnel tasked for any UTC and document completed training in the MIS. 5.5.4.4.3. **(T-2).** Conduct "just in time" training for augmentees immediately prior to performing NFTBU operations (refer to Chapter 141 of this instruction). **(T-2).**

4.4.4.3.3. **(Added-AFMC)** Reviews UTC MISCAP statement as it applies to the unit's tasking and ensures availability of trained fuel systems personnel and serviceable equipment/tools to support requirements. **(T-2).** (Units are no longer required to maintain ready-trained augmentees. Commanders must provide NFTBU augmentees to fill UTC requirements at the time of tasking). **(T-2).**

4.4.5. Hydraulic Section. The Hydraulic Section performs on- and off-equipment maintnenance on pneumatic and hydraulic systems, components (except environmental and egress systems) and provides maintenance support for SE and test equipment. The Hydraulic Section also maintains hydraulic test stands, pumping units, and associated components.

4.4.5.1. The Hydraulic Section will:

4.4.5.1.1. Perform maintenance on munitions loading and handling equipment with discrepancies that exceed the munitions flight repair capabilities. **(T-1).**

4.4.5.1.2. Maintain and inspect refueling drogues, booms, and refueling receptacle systems for large aircraft. **(T-1).**

4.4.5.1.2. **(AFMC)** [DEV] AMUs will inspect refueling drogues, booms, and refueling receptacle systems for 412 TW aircraft.

4.5. Aerospace Ground Equipment (AGE) Flight. The AGE Flight provides powered and Non-Powered AGE (NPA) as defined in TO 00-20-1 to support both aircraft and non-aircraft weapon systems. The AGE Flight should be organized as a consolidated maintenance unit (repair, inspection, and servicing sections) or, at MAJCOM discretion, may be organized into teams for concentrated support efforts.

4.5.1. The AGE Flight will:

4.5.1.1. Maintain and inspect AGE, IAW TO 00-20-1, and equipment specific TOs in support of sortie production and back shop maintenance activities. **(T-1).**

4.5.1.2. Pick up, service, deliver, repair, and perform approved modifications, TCTOs, inspect assigned AGE and perform corrosion control tasks. **(T-1).**

4.5.1.3. Utilize AF Form 864, *Daily Requirement and Dispatch Record*, or MAJCOM-approved electronic product to record all equipment pickup and delivery. **(T-1).**

4.5.1.4. Perform chassis, enclosure, and trailer maintenance on gaseous and cryogenic servicing units. **(T-1).**

4.5.1.5. Manage maintenance/inspection scheduling activities for flight maintained equipment. **(T-1).**

4.5.1.6. Safeguard any Item Unique Identification (IUID) marks during maintenance activities to the extent possible. **(T-1).** In the event the UII is damaged during maintenance activities, the AGE Flight will notify the responsible Equipment Custodian and/or Equipment Accountability Element (EAE) to replace the mark with the same UII. **(T-1).**

4.5.1.7. **(Added-AFMC)** Manage AGE readyline to provide serviceable equipment to users. **(T-2).**

4.5.2. AGE Flight Chief Responsibilities. In addition to the applicable Flight CC/Chief responsibilities in **Chapter 2** of this instruction, the AGE Flight Chief will:

4.5.2.1. Review and coordinate the AGE MEL annually with applicable Maintenance Supervision. **(T-1).** The MXG/CC approves the identified types and quantities of AGE for the MEL.

4.5.2.1.1. AGE Flight Chief will provide copies of the approved MEL to the MOC.

4.5.2.2. Ensure AGE status/scheduling is tracked daily using the MIS. **(T-1).**

4.5.2.2.1. Status and ETIC information needs to be provided to the MOC when it falls below MEL.

4.5.2.3. Ensure newly assigned AGE receives acceptance inspections IAW TO 00-20-1. **(T-1).**

4.5.2.4. Control fuel dispensed from issue tanks IAW AFI 23-204, *Organizational Fuel Tanks*. **(T-1).**

4.5.2.5. Ensure the Uniform Repair and Replacement Criteria Program is implemented IAW TO 00-25-240 and TO 35-1-24. **(T-1).**

4.5.2.6. Coordinate welding requirements with the Fabrication Flight Chief. **(T-1).**

4.5.2.7. Manage AGE CANN actions IAW **Chapter 9** and **Chapter 11** of this instruction. **(T-1).**

4.5.2.8. Establish and monitor the AGE Operator Training Program and assist in the development of course control documents in conjunction with Maintenance Training (MT). **(T-1).**

4.5.2.9. Ensure an AGE Corrosion Control and Prevention Program is maintained and a field number system is established IAW TO 35-1-3, TO 1-1-8, TO 1-1-691, MAJCOM instructions, and equipment specific TOs. **(T-1).**

4.5.2.10. Develop and implement a tracking system to prioritize complete repainting for AGE equipment based on a "worst is first" principle. **(T-1).**

4.5.2.10.1. AGE Flight Chief will coordinate with Fabrication Flight Chief for work beyond the AGE work center capability. **(T-1).**

4.5.2.11. Ensure equipment is prepared for storage or shipment IAW TO 35-1-4, *Processing and Inspection of Support Equipment for Storage and Shipment,* and applicable end item TOs. **(T-1).**

4.5.2.12. Ensure annual transient aircraft landing data is submitted to the respective MAJCOM AGE functional manager by 1 February. **(T-1).** Data will reflect previous year's transient aircraft landings by aircraft MDS and is obtained from local Transient Alert managing office. **(T-1).**

4.5.2.13. Establish AGE sub-pools, as needed, in coordination with OSS's Airfield Operations Flight. **(T-1).**

4.5.2.14. Ensure AGE tow vehicles are two-way radio equipped, permanent or hand-held, to expedite AGE deliveries. **(T-1).** AGE Flight Chief will ensure any permanent installation of radios are accomplished IAW AFI 24-302. **(T-1).**

4.5.2.15. **(Added-AFMC)** Ensure annual inventory of all AGE maintained is submitted on HQ AFMC/A4MM template in **Attachment 9** to HQ AFMC/A4MM AGE Manager at **AFMC.A4M.Workflow@us.af.mil** by the 15th of April each year. Electronic version of template can be obtained from the HQ AFMC/A4MM AGE Manager. **(T-2).**

4.5.3. AGE Pro Super Responsibilities (if not assigned, the AGE Flight Chief will fulfill these responsibilities). The AGE Pro Super will:

4.5.3.1. Monitor the production of AGE Flight and recommend equipment/personnel adjustments to the AGE Flight Chief as required. **(T-1).**

4.5.3.2. Monitor adherence to AGE Flight's safety, training, and CTK programs. **(T-1).**

4.5.3.3. Monitor serviceability status of equipment parked in sub-pools. **(T-1).**

4.5.3.4. Monitor distribution, control, and condition of AGE Flight's assigned vehicles. **(T-1).**

4.5.3.5. Monitor shop equipment for condition and documentation. **(T-1).**

4.5.4. AGE Production Support Section. The AGE Production Support Section provides administration and ancillary services for TO file maintenance, supply support, and fuels management. A full-time Materiel Management Journeyman/craftsman (AFSC 2S0X1) will be assigned to the AGE Production Support Section when the workload warrants. **(T-1).** In addition to the applicable Section NCOIC/Chief responsibilities outlined in **Chapter 2** of this instruction, the AGE Production Support Section NCOIC/Chief will:

4.5.4.1. Manage the AGE Flight's TO libraries IAW TO 00-5-1. **(T-1).**

4.5.4.2. Manage the AGE Flight's tool storage and issue areas IAW **Chapter 8** of this instruction. **(T-1).**

4.5.4.3. Manage the AGE Flight's TMDE program IAW TO 00-20-14 and TO 33-1-27. **(T-1).**

4.5.4.4. Manage the AGE Flight's materiel management function IAW **Chapter 9** of this instruction and AFI 23-101.

4.5.4.4.1. Pre-assembled part kits are authorized; if required, assemble from bench stock in minimum quantities necessary to support workload requirements.

4.5.4.5. Coordinate the AGE Flight's scheduling function with PS&D. **(T-1).** The AGE Production Support Section NCOIC/Chief will:

4.5.4.5.1. Maintain AGE historical records. **(T-1).**

4.5.4.5.2. Prepare an AGE scheduled maintenance plan and maintain a current equipment scheduling report for all assigned equipment. **(T-1).**

4.5.4.5.3. **(Added-AFMC)** In coordination with PS&D, ensure all inspections, TCTOs, time changes, maintenance and repair actions are scheduled and performed.

4.5.4.6. Manage the AGE Flight's organizational fuel tank(s) IAW AFI 23-204. **(T-1).**

4.5.4.7. Manage the AGE Flight's HAZMAT/ESOH programs IAW AFI 90-8XX series ESOH instructions and the AFI 32-70XX series environmental instructions. **(T-0).**

4.6. Armament Flight. The Armament Flight, when formed, will be part of either MXS, EMS or MUNS, and performs off-equipment maintenance for assigned aircraft armament systems, guns, pylons, racks, launchers and adapters. An AFSC 2S0X1 Materiel Management journeyman/craftsman may be assigned to the flight if mission dictates and respective wing 2S Functional Manager concurs. The Armament Flight normally consists of three sections: Armament Maintenance Section, AME Section, and Support Section. The WWM, with MXG/CC concurrence, determines when armament systems personnel are required to perform load crew duties or related certifiable tasks.

4.6. (AFMC)[DEV] Armament Flight. Within the 412 MXS, Armament flight duties are performed in the Component Repair Flight for fighter and trainer aircraft. Armament functions for bomber aircraft are aligned under the Munitions Flight due to geographic location and system complexity. These flights will provide oversight to all responsibilities and duties called out for these sections in AFI 21-101.

4.6.1. Armament Flight Chief Responsibilities. In addition to common Flight Chief responsibilities outlined in **Chapter 2** of this instruction, the Armament Flight Chief will:

4.6.1.1. Assist the WWM in recommending distribution of AFSC 2W1X1 personnel to satisfy on-and off-equipment weapons release and gun system maintenance. **(T-1).**

4.6.1.2. Advise the Operations Officer/MX SUPT and the WWM regarding factors which affect training, loading or maintenance capabilities, personnel actions affecting manning levels (cross-training, special duty, reassignment, etc.), equipment shortfalls and other key weapons related issues. **(T-1).**

4.6.1.3. Establish and monitor gun room security IAW AFI 31-101. **(T-1).**

4.6.1.4. Ensure AME and SPRAM accountability and control requirements are met IAW AFI 21-103. **(T-1).**

4.6.1.5. If applicable, support WRM rack, adapter, pylon, launcher and gun maintenance requirements IAW AFI 25-101, *War Reserve Materiel (WRM) Program Guidance and Procedures*. **(T-1).**

4.6.1.6. Provide the WWM monthly status on authorized/on-hand quantities and serviceability of AME/NIE/WRM, critical armament testers, and support equipment by the first of each month, for the previous month. **(T-3).**

4.6.1.7. Ensure requirements for submitting AFTO Form 375 on all weapons support equipment identified in TO 35-1-24, are accomplished. **(T-1).** This process provides vital information and source documentation for the Product Group Manager to adequately reflect equipment sustainment costs, attrition rates, and to enable timely forecasting for replacement funding.

4.6.1.8. Establish procedures to ensure items requiring explosive-free certification IAW TO 11A-1-60 are properly inspected, marked and certified prior to shipment. **(T-1).**

4.6.2. Armament Maintenance Section. The Armanment Maintenance Section performs TCTOs, inspections and maintenance on assigned armament systems, guns, pylons, racks, launchers, and adapters. In addition to the applicable Section NCOIC/Chief responsibilities outlined in **Chapter 2** of this instruction, the Armament Maintenance Section NCOIC/Chief will:

4.6.2.1. In coordination with PS&D, ensure all inspections, TCTOs, time changes, maintenance and repair actions for aircraft armament systems suspension and release components and AME, including AME items preloaded with munitions for contingencies are scheduled and performed. **(T-3).**

4.6.2.2. Ensure the off-equipment portion of major inspections is performed. **(T-1).** In bomber and special mission aircraft units, the AME Section NCOIC/Chief will facilitate

assistance with the on-equipment portion of major aircraft inspections that pertain to the armament system. **(T-1).**

4.6.2.3. Ensure WRM assets are maintained (if applicable). **(T-1).**

4.6.2.4. Ensure equipment historical records (AFTO Form 95) for AME, aircraft guns and weapons system NIE are maintained. **(T-1).**

4.6.2.5. Ensure ammunition loading assemblies and systems are maintained and inspected. **(T-1). Note:** The Munitions Flight maintains the chassis portion.

4.6.3. Alternate Mission Equipment (AME) Section. The AME Section accounts for, stores and controls AME. If not formed, the responsibilities detailed in this section will be accomplished by the Armament Maintenance Section. **(T-2).** In addition to the applicable Section NCOIC/Chief responsibilities outlined in **Chapter 2** of this instruction, the AME Section NCOIC/Chief will:

4.6.3.1. Develop procedures governing accountability and control of AME, in coordination with Weapons Section NCOIC/Chief and WWM. **(T-1).**

4.6.3.2. Ensure all weapons assigned, non-load box/tester-configured (bomber aircraft), F-2/utility type trailers are maintained. **(T-1).**

4.6.3.3. Ensure SPRAM accounts are maintained IAW AFI 21-103 and AFI 23-101. **(T-1).**

4.6.4. Support Section. The Support Section stores and maintains tools/equipment and manages the supply and bench stock functions for Armament Flight. The Support Section will:

4.6.4.1. Ensure tools and equipment are managed IAW **Chapter 8** of this instruction. **(T-1).**

4.6.4.2. Ensure maintenance materiel management support is managed IAW **Chapter 9** of this instruction. **(T-1).**

4.7. Avionics Flight. Avionics Flight is responsible for maintaining avionics systems, components and performs authorized equipment repairs, TCTOs, component programming, troubleshooting, CND/Bench Check Serviceable (BCS) screening, line replaceable units (LRUs), sub-component removal and replacement, management, programming and status reporting for assigned pods and SE, and in-work classified avionics systems component management. MAJCOMs will identify any additional mission support requirements in their supplements and addendums.

4.7. (AFMC)[DEV] Avionics Flight. Within the 412 MXS, the Component Repair Flight will perform this function and will provide oversight to all responsibilities and duties called out for these sections in AFI 21-101. There are no additional mission support requirements for AFMC.

4.7.1. The Avionics Flight is authorized to perform the following maintenance actions if the required support equipment is authorized and on-hand. Repairs above and beyond those listed require approval from the appropriate approval authority (e.g., Lead Command, depot). If authorized, Avionics Flight will be limited to the following repairs:

4.7.1.1. CND or BCS screening. **(T-2).**

4.7.1.2. TCTOs performed at wing level. **(T-2).**

4.7.1.3. LRU Operational Flight Program (OFP) loads. **(T-2).**

4.7.1.4. Shop-Replaceable Units (SRU) cross-CANNs. **(T-2).**

4.7.1.5. Replacement of minor bits and pieces. **(T-2).**

4.7.2. High priority TCTOs or other circumstances may result in more workload than can be accommodated. In the event the section cannot accomplish the special workload as well as normal CND/BCS screening, the following formula may be used to identify those LRUs that could be temporarily "direct Not Repairable This Station (NRTS)" without screening. The formula may also help determine LRU priorities in order to adjust workload to meet production. Index formula: Index Number = Percent of Base Repair (PBR) * EXCHG PRICE * Daily Demand Rate (DDR).

4.7.2.1. LRUs with higher index numbers have a higher priority for repair compared to those with lower numbers. In the example below, the Programmable Signal Processor (PSP) would have the highest priority, followed by Dual Mode Transmitter (DMT). Digital Flight Control Computer (DFLCC) may be a candidate to temporarily "Direct NRTS" until workload permits CND/BCS screening.

Figure 4.1. Example Index Numbers.

NOUN	PBR*	EXCHG PRICE*	DDR	= INDEX
PSP	63	$33352.00	214412	450517348512
DMT	13	$16521.00	21451	4607095623
DFLCC	82	$6000.00	03148	1548816000

4.7.3. Historical Records. Section NCOICs will maintain AFTO Form 95, *Significant Historical Data* or equivalent on selected, significantly repairable, serialized components for which historical failure data would enhance repair. **(T-1).** Historical records are mandatory for SPRAM LRUs, and items asterisked in weapons system -6 TOs. Historical records will be maintained IAW TO 00-20-1. **(T-1).**

4.7.3.1. The record will remain with the component anytime it is undergoing maintenance. **(T-1).**

4.7.3.2. Data is provided from these records, upon request, to the analysis function to aid in defining avionics maintenance problems and recommended solutions.

4.7.4. Avionics Flights supporting multiple MDS, or those organized under the combat support team structure are authorized to form functional sections below flight level to achieve efficiency and maintain effective span of control. **Note:** Do not authorize additional manpower positions to form sections resulting from local management decisions.

4.7.5. Avionics Flight CC/Chief Responsibilities. In addition to the applicable Flight CC/Chief responsibilities listed in **Chapter 2** of this instruction, the Avionics Flight CC/Chief will:

4.7.5.1. Support Wing EW system programming. **(T-1).**

4.7.5.2. Ensure control and storage of assigned AME IAW AFI 21-103. Develop local procedures for control and storage of items not specified in -21 TOs. **(T-1).**

4.7.5.3. Ensure accurate and timely pod and SE status is updated or verified daily in RAMPOD IAW AFI 21-103. **(T-1).**

4.7.5.4. Ensure personnel do not make unauthorized or false transmissions on international distress frequencies IAW TO 31R2-1-251, *General Instructions-Transmission of False Distress Signals on Emergency Frequencies*. **(T-1).**

4.7.5.5. Ensure cryptography components are controlled and maintained IAW National Security Agency directives and AF/XOI directives. **(T-1).**

4.7.5.6. When applicable, determine maintenance responsibility for aircraft adapter group equipment. **(T-1).**

4.7.5.7. Implement the "Bad Actor" program IAW TO 00-35D-54. **(T-1).** The purpose of the Air Force Bad Actor Program is to identify serial-numbered items that enter the repair cycle at an abnormally high rate when compared to the total population of like assets and to repair them or remove them from the exhibit holding activity.

4.7.6. Repair Monitor Responsibilities. Monitors the status of items processed into the section for repair. Each shift may have a repair monitor assigned. Maintain records used by the repair monitor according to AFMAN 33-363. Each Repair Monitor will:

4.7.6.1. Process items into and out of the section, ensuring all documentation is accurate and complete. **(T-1).**

4.7.6.2. Advise the section NCOICs and Pro Supers of item status. **(T-1).**

4.7.6.3. Assist the section NCOICs in managing the DIFM program by complying with MAJCOM instructions to ensure ordered and received parts are documented; and uses, maintains and files, management and computer records. **(T-1).** Repair Monitors will maintain and update a working copy of the D-23, *Repair Cycle Asset Management Listing*, sorted by location and detail number. **(T-1).**

4.7.6.4. Designate and maintain an AWP area, ensure accurate documentation, and submit supply assistance requests, as required. **(T-1).**

4.7.6.5. Track and monitor MICAP status for all assigned DIFM and parts affecting section repair capabilities using automated Integrated Logistics System -Supply (ILS-S) reports. **(T-1).**

4.7.6.6. Ensure the MIS is updated with current supply data, location changes and DIFM status changes. **(T-1).**

4.7.7. MAJCOMs will establish avionics sections and responsibilities to match their mission requirements. Sections may include:

4.7.7.1. Communication-Navigation Section.

4.7.7.2. Radio Frequency (RF) Multiplexing Section.

4.7.7.3. Instrument and Flight Control Systems (IFCS).

4.7.7.4. Weapons Control System Section.

4.7.7.5. Sensors Section.

4.7.7.6. Electronic Warfare System (EWS) Section.

4.7.7.7. Avionics Intermediate Section.

4.7.7.8. Computer Section.

4.7.7.9. Surveillance Radar Section.

4.7.7.10. Combat Systems Section.

4.7.7.11. Cryptographic Section.

4.7.7.12. Offensive Avionics Section.

4.7.7.13. **(Added-AFMC)** Sections are formally established through base manpower, AFTC, and AFMC/A1.

4.8. Fabrication Flight. Responsible for aircraft structural maintenance, low observable aircraft structural maintenance, metals technology, and Nondestructive Inspection (NDI).

4.8.1. Fabrication Flight CC/Chief Responsibilities. In addition to the applicable Flight CC/Chief responsibilities outlined in **Chapter 2** of this instruction, the Fabrication Flight CC/Chief will:

4.8.1.1. Provide local manufacture capability to meet mission requirements and monitor all local manufacture work order requests. **(T-1).**

4.8.1.2. Coordinate AGE welding requirements with the AGE Flight Chief**. (T-1).**

4.8.1.3. Ensure corrosion prevention and control requirements, wash rack procedures, and established paint schemes are accomplished IAW TO 1-1-691, TO 1-1-8, TO 35-1-3, MAJCOM/Lead Command instructions, and MDS-specific TOs. **(T-1).**

4.8.2. Aircraft Structural Maintenance (ASM) Section. Manages structural repair, corrosion control, inspection, damage evaluation, repair, manufacture, and/or modification of metallic, composite, fiberglass, plastic components, and related hardware associated with aircraft and SE. In addition to applicable Section NCOIC/Chief responsibilities in **Chapter 2** of this instruction, the ASM Section NCOIC/Chief will:

4.8.2.1. Ensure appropriate resources are available to all personnel to chemically or mechanically inspect, remove, and treat corrosion on aircraft, engines, AGE, and components. **(T-1).**

4.8.2.2. Monitor the aircraft wash and corrosion inspection schedule in the weekly and monthly maintenance plans. **(T-1).**

4.8.2.3. Provide training and assistance to sections managing their own corrosion programs to include cleaning operations, corrosion prevention, inspection, removal and treatment techniques. **(T-1).**

4.8.2.4. Develop maintenance procedures IAW **Chapter 11** of this instruction, AFI 91-203, and ensure assigned ASM personnel are trained and qualified on aircraft intake maintenance. **(T-1).**

4.8.2.5. Review the QPL/QPD for changes to cleaners that must conform to a MIL-Spec as specified in applicable TOs for aircraft wash rack. **(T-1).**

4.8.2.6. Stock supplies and equipment necessary to support aircraft and equipment washing, inspection, and treatment. **(T-1).**

4.8.3. Metals Technology Section. Manages structural repair, corrosion control, inspection, damage evaluation, inspects, repairs, services, manufactures, fabricates or modifies metallic, composite, fiberglass, plastic components, performs heat treating, cleans, welds, and related hardware associated with aircraft and SE. In addition to the applicable Section NCOIC/Chief responsibilities in **Chapter 2** of this instruction, the Metals Technology Section NCOIC/Chief will:

4.8.3.1. Ensure assigned welders are certified in all base metal groups prescribed by the MAJCOM Fabrication functional manager (or equivalent) IAW TO 00-25-252, *Aeronautical Equipment Welding*, Work Package 005 02. **(T-1).**

4.8.3.1.1. Ensure assigned welders conducting Gas Tungsten Arc Welding (GTAW), Gas Metal Arc Welding (GMAW), or Shielded Metal Arc Welding (SMAW) repairs on support equipment are certified IAW TO 00-25-252. **(T-1).**

4.8.3.1.2. Welding proficiency is documented IAW TO 00-25-252, Work Package 005 02.

4.8.3.2. Provide safety briefings stressing arc radiation hazards. **(T-1).**

4.8.3.3. Ensure special tools, jigs, and fixtures are designed, fabricated, protected and properly stored. **(T-1).**

4.8.4. Nondestructive Inspection (NDI) Section. Performs NDI of aircraft, engines, AGE, other equipment and manages the Oil Analysis Program (OAP). Inspection findings are limited to a description of the size, location, and type of any defect discovered. NDI personnel do not make serviceability determinations except for "inspect only" TCTOs and if NDI actions constitute a completed maintenance action. In addition to the applicable Section NCOIC/Chief responsibilities in **Chapter 2** of this instruction, the NDI Section NCOIC/Chief will:

4.8.4.1. Ensure OAP requirements are accomplished (if applicable to assigned MDS) IAW AFI 21-124 and AFI 21-131, *Joint Oil Analysis Program*. **(T-1).**

4.8.4.1.1. If the NDI laboratory providing OAP support is not located on the same base as the supported unit, or the supported unit does not have NDI/OAP personnel assigned, assign the OAP responsibilities to the owning organization IAW TO 33-1-37-1, *Joint Oil Analysis Program Laboratory Manual, Volume I*, TO 33-1-37-2, *Joint Oil Analysis Program Laboratory Manual, Volume II* and TO 33-1-37-3, *Joint Oil Analysis Program Laboratory Manual, Volume III*. The owning organization provides samples in an expeditious manner to the supporting OAP laboratory.

4.8.4.1.1.1. The owning organization will establish collection points and procedures to receive and forward OAP samples to the supporting laboratory, monitor sample collection, assign control numbers, and provide blocks of sample control numbers for use in other squadrons. **(T-1).**

4.8.4.2. Advise Maintenance Supervision, MOC and the owning work center of abnormal OAP trends. **(T-1).**

4.8.4.3. Ensure capability exists to perform optical, dye-penetrant, magnetic particle, ultrasonic, eddy current, radiographic and special inspections as required. **(T-1).**

4.8.4.4. Ensure process control procedures IAW TO 33B-1-2, *Nondestructive Inspection General Procedures and Process Controls* are completed at the required or established frequency. **(T-1).**

4.8.4.5. Establish technique files using AFTO Form 242, *Nondestructive Inspection Data*, and TO 33B-1-1, *Nondestructive Inspection Methods Basic Theory*. **(T-1). Note:** Locally developed inspection techniques for use on aircraft and their components will be approved by the responsible ALC NDI manager prior to use. **(T-1).** All other non-aircraft related AFTO Form 242 established techniques may be approved by the lab chief.

4.8.4.6. Maintain coordination with the base medical service that provides occupational physicals, emergency treatments, film badge services, and acts as radiographic advisors IAW AFMAN 48-125, *Personnel Ionizing Radiation Dosimetry*, and TO 33B-1-1. **(T-1).**

4.8.4.7. Ensure a Radiation Safety Program is established IAW TO 33B-1-1. **(T-1).**

4.8.4.8. Control and dispose of radiographic silver-bearing materiel IAW AFI 23-101. **(T-1).**

4.8.4.9. Ensure radiographic film files and computed radiography files contain, as a minimum:

4.8.4.9.1. The last complete set of radiographs taken by owning organization, for each assigned aircraft and engine by serial number or identification number. **(T-1).**

4.8.4.9.2. The name of the person who interpreted the radiography. **(T-1). Note:** Radiography identification procedures will be followed IAW TO 33B-1-1.

4.8.4.9.2.1. Ensure the person interpreting the film also initials the set of radiographs or a locally developed interpretation worksheet, as applicable. **(T-1).**

4.8.4.9.3. All NDI radiographic film exposures, to include paper, will be filed and maintained for all One Time Inspection (OTI), TCTO, -6 TO, -9 TO, and -36 TO inspection requirements. **(T-1).** The NDI Section NCOIC/Chief will ensure disposition of radiographic film IAW AFRDS located at **https://www.my.af.mil/gcss-af61a/afrims/afrims/rims.cfm**. **(T-1).**

4.8.4.10. Ensure all NDI technicians are certified IAW TO 33B-1-1. **(T-1).**

4.8.5. Low Observable (LO) Aircraft Structural Maintenance Section. LO ASM Section manages structural repair, corrosion control, composite repair, LO coatings. **Note:** The Fabrication Flight CC/Chief will determine which tasks listed in **paragraph 4.8.2** in this instruction (ASM Section) will be applicable to this section based on flight configuration. In addition to applicable Section NCOIC/Chief responsibilities in **Chapter 2** of this instruction, the LO ASM Section NCOIC/Chief will:

4.8.5.1. Provide inspection, damage evaluation, repair, manufacture, and/or modification of LO components, and related hardware associated with aircraft. **(T-1).**

4.8.5.2. Ensure appropriate resources are available to perform all LO related tasks. **(T-1).**

4.8.5.3. Stock supplies and equipment necessary to support aircraft inspection, and treatment. **(T-1).**

4.8.5.4. Monitor the inspection schedule in the weekly and monthly maintenance plans. **(T-1).**

4.8.5.5. Ensure protective/LO coatings are applied to aircraft, AGE, applicable munitions, and components IAW applicable TOs. **(T-1).** Ensure protective/LO coatings are applied IAW local, state and federal environmental directives. **(T-0).**

4.8.5.6. Provide training and assistance to sections managing their own LO programs. **(T-1).**

4.9. Maintenance Flight. May consist of Repair and Reclamation (R&R), Wheel and Tire (W&T), Inspection, and Transient Alert (TA) Sections.

4.9. (AFMC)[DEV] Maintenance Flight. Within the 412 MXS, the Maintenance Flight will include Hydraulic and Aircraft Fuels System Sections and will provide oversight to all responsibilities and duties called out for these sections in AFI 21-101.

4.9.1. The Maintenance Flight CC/Chief will comply with the common Flight CC/Chief responsibilities in **Chapter 2** of this instruction and locally established management requirements. **(T-1).**

4.9.2. R&R Section. Removes, replaces, and rigs flight control surfaces/systems on assigned aircraft. Troubleshoots, rigs, and replaces landing gears, actuated doors, canopies and associated equipment requiring component maintenance beyond the capability of other activities.

4.9.2.1. R&R Section, when established, will remove, install, and repair towed-targets and airborne reel pods. **(T-1).**

4.9.2.1. **(AFMC)** [DEV] The 412th MXS Component Repair Flight/AIS will remove, install, and repair towed-targets and airborne reel pods.

4.9.3. Wheel and Tire (W&T) Section. Manages the build-up, repair, test, and storage of wheel and tire assemblies and components. W&T Section will:

4.9.3.1. Degrease and disassemble wheel components for NDI inspection IAW TO 4W-1-61, *Maintenance and Overhaul Instruction - All Types Aircraft Wheels*, prior to processing through the ASM and NDI Sections. **(T-1).**

4.9.3.2. Clean, inspect, and properly store (do not co-mingle) wheel bearings. **(T-1).**

4.9.4. Aircraft Inspection Section. Performs aircraft Phase (PH), Periodic, Isochronal (ISO) or letter check inspections. **Note:** Section may be divided into separate elements for each type aircraft maintained. In addition to the applicable Section NCOIC/Chief responsibilities in **Chapter 2** of this instruction, the Inspection Section NCOIC/Chief will:

4.9.4.1. Ensure assigned non-powered SE (e.g., dock stands) is maintained. **(T-1).**

4.9.4.2. Review inspection schedules and ensure dock teams are available to meet inspection needs. **(T-1).**

4.9.4.3. Develop standardized inspection flow plan to aid in managing the inspection progress and to control dock personnel and support specialists. **(T-1).**

4.9.4.3.1. Units may use an Automated Data System (ADS) instead of the inspection flow plan to request specialist support.

4.9.4.3.2. Inspection Section NCOIC/Chief will ensure flow plan data remains current with -6 TO requirements. **(T-1).**

4.9.4.4. Inform the MOC and owning agency of all MICAP parts. **(T-1).**

4.9.4.5. Provide PS&D with an inspection document record upon completion of the inspection. **(T-1).**

4.9.4.6. Ensure components are tagged with an AFTO Form 350, *Reparable Item Processing Tag*, IAW TO 00-20-2. **(T-1).**

4.9.4.6.1. Ensure serially-controlled components are reinstalled on the same aircraft and position from which they were removed. **(T-1). Exception:** If it is absolutely necessary to install serially-controlled components in a different position, the Inspection Section NCOIC/Chief will notify PS&D to update the records. **(T-2).**

4.9.5. Transient Aircraft (TA) Section (N/A to the ANG). Recovers, services, inspects, maintains, and launches transient aircraft. Transient aircraft are those aircraft not assigned to a base that are en route from one location to another that may require routine servicing. Aircraft are not considered transient aircraft when deploying to or staging from a base for the purpose of flying sorties or conducting training with a squadron assigned to the base, with or without the necessary maintenance support from the home base. MOC coordinates specialist support for transient aircraft through appropriate squadrons. For off-station recovery procedures refer to owning MAJCOM instructions and command-to-command agreements. In addition to the applicable Section NCOIC/Chief responsibilities outlined in **Chapter 2** of this instruction, the TA Section NCOIC/Chief will:

4.9.5.1. Recover and deliver all deceleration chutes for assigned, transient, and tenant aircraft to the AFE. **(T-1).**

4.9.5.2. Complete reimbursement documentation. **(T-1).**

4.9.5.2.1. AF Form 726, *Transient Aircraft Service Record*, may be used for documenting maintenance servicing requirements and necessary billing information.

4.9.5.3. Record arrivals and departures of transient aircraft on AF Form 861, *Base/Transient Job Control Number Register* or locally-approved form if it captures all AF Form 861 fields. **(T-1).** TA Section NCOIC/Chief (or equivalent) will:

4.9.5.3.1. Assign each aircraft a single Event Identification Description (EID) for all support general work performed by TA. **(T-3).**

4.9.5.3.2. Enter, as a minimum, “P” for park, “I” for inspect, “S” for service, “L” for launch, and “E” for EOR in the job description/remarks block. **(T-1).**

4.9.5.3.3. Forward completed AF Form 861 for contracted transient alert activities to the COR monthly. **(T-2).** The COR forwards completed forms to the applicable contracting officer managing the TA contract for inclusion in the contract file.

4.9.5.3.4. Route the AF Form 861 for non-contracted transient alert activities to the Maintenance Flight CC/Chief for review. **(T-1).**

4.9.5.3.4.1. After review, the TA Section NCOIC/Chief will file AF Form 861 for a minimum of 1 year. **(T-2).**

4.9.5.3.4.2. AF Form 861 may be used to validate manpower and equipment requirements against current AF standards.

4.9.5.4. Close out support general EIDs daily. **(T-1).**

4.9.5.4.1. Use the same last four digits on subsequent days for the same aircraft.

4.9.5.4.2. Use a separate EID for each discrepancy that is not support general.

4.9.5.5. Ensure that when a FCF is required on transient aircraft, QA at the transient base serves as the focal point and ensures all FCF requirements are completed. **(T-1).**

4.9.5.5.1. The TA Section NCOIC/Chief will coordinate all required FCF requirements through owning MXG/CC, off-station transient alert and off-station QA sections. **(T-1).**

4.9.5.5.2. If no off-station agencies exist, owning MXG/CC and owning OG/CC will issue guidance directly to the aircraft commander and off-station maintenance personnel. **(T-1).**

4.9.5.6. Supervise maintenance performed by assigned personnel on transient aircraft. **(T-1).**

4.9.5.7. Maintain the appropriate TOs for aircraft that can be expected to transit the function on a regular basis. **(T-1).**

4.9.5.8. Ensure personnel are trained and strictly adhere to oil sample requirements specified in the respective -6 TO. **(T-1).**

4.9.5.9. Ensure personnel authorized to run engines are qualified IAW **Chapter 11** of this instruction. **(T-1).**

4.9.5.9.1. Request the aircrew to run engines if TA or maintenance personnel are not authorized.

4.9.5.9.2. If qualified aircrew members are not available, contact MOC to request assistance from the home station.

4.9.5.10. Ensure transient aircraft status changes are reported to MOC. **(T-1).** If support is required, the MOC notifies the home station for support.

4.9.5.11. Ensure EOR procedures for transient aircraft are developed IAW TO 00-20-1. **(T-1).**

4.9.5.12. Ensure procedures exist for required weapons loading actions on transient aircraft, transient aircraft impulse cartridge tracking and storage, and weapons safing equipment requisition and maintenance for frequently transiting aircraft. **(T-1).**

4.9.5.12.1. Arming, de-arming and munitions unloading/loading operations on transient aircraft will be performed by a weapons load crew certified/qualified on the munitions and aircraft. **(T-1).**

4.9.5.12.2. The MXG/CC may direct the LSC to arm, de-arm, and unload an aircraft on which they are not certified/qualified, if appropriate technical data and support equipment is available.

4.9.5.12.2.1. In such cases, the aircrew shall be available for consultation on aircraft peculiarities. **(T-2).**

4.9.5.12.2.2. If these criteria cannot be met, request assistance from higher headquarters.

4.9.5.13. Ensure checklists exist to ask pilots about explosive egress systems pertaining to unfamiliar aircraft that do not normally transit their base. **(T-1).**

4.9.5.13.1. Aircrew members remove and install flight status safety pins on aircraft when transient maintenance personnel are not qualified.

4.9.5.13.1.1. The host GP/CC or his authorized representative may delegate this responsibility to the transient aircraft commander/pilot if the aerospace vehicle is a new or experimental aerospace vehicle with which base maintenance personnel are not familiar, or when personnel qualified to provide the required services accompany the aerospace vehicle. In such cases, the host unit will provide assistance within their capability. **(T-3).**

4.9.5.13.1.2. If TA cannot accomplish the required inspections, servicing, or repairs because of a lack of qualified personnel, facilities, or material (or there is no TA support available), and the transient aircraft commander does not wish to continue the flight without accomplishment of these items, the transient aircraft commander is responsible for requesting assistance through the appropriate external organizations.

4.10. Munitions Flight. Controls, accounts for, stores, ships/receives, inspects, maintains, assembles, and delivers conventional, precision guided and nuclear munitions. Manages and maintains all assigned tools, test and munitions handling equipment. Refer to AFI 21-2XX series instructions for specific guidance. **Note:** Munitions may be part of the MXS or established in a Munitions Squadron IAW AFI 21-200.

4.10. (AFMC)[DEV] Munitions Flight. The 412 MXS/MXMW, Munitions Flight is also responsible for the Armament function for Bomber aircraft due to the geographic location/separation at Edwards AFB, South Base.

4.11. Propulsion Flight. Maintains aircraft engine propulsion units, propulsion components, and propellers. Performs engine/module/accessory disassembly, inspection, assembly, test, and repair. Responsible for Jet Engine Intermediate Maintenance (JEIM); Engine Test Stands (ETS) and Noise Suppression Systems (NSS); accessory and Quick Engine Change (QEC) repair; small gas turbine; module/accessory repair section; support equipment; and turbo-prop/turbo-shaft repair, engine PH/ISO inspections, as required. Sections may be combined or grouped at the discretion of the MXS/CC. When an engine CRF is co-located with an operational wing a MOA/MOU may be developed to clarify mutual support responsibilities. In addition, the flight

will be the focal point for common propulsion support equipment i.e., flexible borescopes, engine trailers and download equipment.

4.11. (AFMC)[DEV] Propulsion Flight. In addition to the normal propulsion flight responsibilities, the 412 MXS Propulsion Flight Business Unit will perform duties and responsibilities of Engine Management (EM) Section listed in chapters 5 and 15 of AFI 21-101.

4.11.1. In addition to the applicable Flight CC/Chief responsibilities in **Chapter 2** of this instruction, the Propulsion Flight CC/Chief will:

4.11.1.1. Perform as the wing focal point for propulsion maintenance programs, focusing on continuity, compliance and standardization, provide advice to wing leadership on propulsion issues and monitor all aspects of wing propulsion maintenance program. **(T-1).**

4.11.1.2. Act as the wing 2A6X1 AFSC functional manager and provide technical guidance to maintain propulsion systems to support the wing mission. **(T-2).**

4.11.1.3. Coordinate with Engine Manager (EM) and organization leadership to support War Readiness Engine (WRE) requirements. **(T-1).**

4.11.1.3.1. Propulsion Flight CC/Chief will track the status of ready spare engines using a visual display or automated product showing: serial number, configuration (type and position, if applicable), time remaining until next scheduled engine removal, overhaul or reconditioning, preservation date, type accomplished, re-preservation due date, Oil Analysis Program (OAP) code (if applicable), and remarks. **(T-1).**

4.11.1.4. Review production data to ensure propulsion units and components processed through the flight are repaired and functionally checked IAW TO 2-1-18, *Aircraft Engine Operating Limits and Factors Operating Limits and Pipeline Times*, including QEC configuration when applicable. **(T-1).**

4.11.1.5. Coordinate with the EM to ensure accurate engine and equipment status reporting IAW AFI 20-115, AFI 21-103 and TO 00-25-254-1, *Comprehensive Engine Management System (CEMS) (D042) Engine Status, Configuration, and TCTO Reporting Procedures*. **(T-1).**

4.11.1.6. Provide RN (JEIM regional repair, and/or CRF) support to other organizations, when tasked (refer to AFI 20-117). **(T-1).**

4.11.1.7. Develop guidelines to comply with AF and wing OAP requirements IAW 33-series TOs and AFI 21-124. **(T-1).**

4.11.1.8. Review/analyze all unscheduled engine or module removals and ETS rejects. **(T-1).** Propulsion Flight CC/Chief will:

4.11.1.8.1. Review/analyze major component failure trends. **(T-1).**

4.11.1.8.2. Provide input to the MXG/CC's ET&D program IAW AFI 20-115. **(T-1).**

4.11.1.9. Ensure in-shop CANN actions are accomplished IAW local procedures, **Chapter 9** and **Chapter 11** of this instruction and TO 00-20-2. **(T-1).**

4.11.1.9.1. Ensure local procedures are coordinated with Engine Management (EM) to ensure sufficient time remains on TCIs prior to CANN action approval. **(T-1).**

4.11.1.10. Coordinate with base civil engineering to provide maintenance on NSS and ETS supporting structures that are categorized as real property. If the wing or squadron is a tenant, incorporate this maintenance requirement into the host-tenant support agreement. **(T-1).**

4.11.1.10.1. Ensure NSS and/or ETS repair discrepancies that exceed the base repair capability are reported in RAMPOD. **(T-1). Note:** Entering repair requirements into RAMPOD establishes official repair request and ensures visibility to MAJCOM and Support Equipment PGM at WR-ALC.

4.11.1.10.1. **(AFMC)** Edward's brick and mortar facility does not fall under the WR-ALC Support Equipment PGM and therefore RAMPOD tracking is not required for the facility.

4.11.1.11. Ensure an uninstalled engine run qualification/certification program is established IAW **Chapter 11** of this instruction. **(T-1).**

4.11.1.12. Ensure specialized and long life shipping devices and containers are accounted for and maintained in a serviceable condition IAW AFI 23-101 and TO 00-85-20, *Engine Shipping Instructions*. **(T-1).**

4.11.1.13. Ensure engines and engine components removed from crash damaged aircraft are disposed of IAW AFI 23-101. **(T-1).**

4.11.1.14. Ensure an engine flexible borescope certification and blade-blending certification program, for each Type, Model, Series (TMS) possessed, is established IAW **Chapter 11** of this instruction. **(T-1).**

4.11.1.15. Monitor scheduled and unscheduled engine removals to balance Propulsion Flight workload with production capability and coordinate with EM section to program engine removals for the weekly and monthly maintenance plans. **(T-1).**

4.11.1.15.1. The Propulsion Flight CC/Chief and EM will develop a 6-month plan to smooth surges in the engine maintenance workload. **(T-1).**

4.11.1.15.1.1. Use automated methods to develop the 6-month plan and include scheduled engine removals for TCIs, Periodic (PE) Inspections, TCTOs and a projected unscheduled removals factor.

4.11.1.15.1.2. The Propulsion Flight CC/Chief will ensure Reliability-Centered Maintenance (RCM) principles IAW AFMAN 20-116 are followed. **(T-1).**

4.11.1.16. Ensure Engine Automated Work Package (EAWP) user permissions mirror current training/certification authorizations. **(T-1).**

4.11.1.16.1. Users of EAWP may use the EAWP program in lieu of a work folder to meet minimum requirements of this AFI.

4.11.1.17. Coordinate with the OAP laboratory to obtain maximum benefits from OAP data when abnormal wear-metal trends are indicated. **(T-1).** The Propulsion Flight CC/Chief will:

4.11.1.17.1. Ensure all OAP responsibilities are performed IAW AFI 21-124. **(T-1).**

4.11.1.17.2. Establish procedures to monitor OAP trends. **(T-1).**

4.11.1.17.3. Ensure personnel are trained to identify and respond to wear metal limits for assigned and maintained engines and are trained to perform sampling procedures IAW TO 33-1-37-2. **(T-1).**

4.11.1.17.4. Ensure oil samples taken at the ETS are promptly delivered to the OAP laboratory. **(T-1).**

4.11.1.17.5. Act as a central point-of-contact for all abnormal OAP laboratory results. **(T-1).**

4.11.1.17.6. Forward information to the OAP laboratory concerning actions taken as a result of OAP recommendations. **(T-1).**

4.11.1.17.7. Review OAP response time (from sampling to receipt at the laboratory and return to the unit) to ensure processing time meets mission needs. **(T-1).**

4.11.1.18. **(Added-AFMC)** [DEV] The 412 MXS Propulsion Flight Chief is responsible for management of the Engine Blade Blending Training and Certification Program and will ensure all related responsibilities contained in AFI 21-101 are adhered to.

4.11.2. Support Section. The Support Section manages the flight's HAZMAT program, and operates tool storage areas. DMS or designated personnel process supply requests to facilitate the issue request, tracks MICAP due-outs, monitors bench stock, conducts bench stock/adjusted stock level reviews IAW AFMAN 23-122, Sec. 5B. **(T-2).** In addition to the applicable Section NCOIC/Chief responsibilities outlined in **Chapter 2** of this instruction, the Support Section NCOIC/Chief will:

4.11.2.1. Ensure a flight due-out release point and holding bins are established, and UND "A" and Urgency Justification Code (UJC) BQ requirements are verified. **(T-1).**

4.11.3. Jet, Turboprop, Turbo-shaft Engine Intermediate Maintenance (JEIM) section. Stores, builds up, tears down, inspects, modifies, and repairs engines, QEC kits, and tests components. In addition to the applicable Section NCOIC/Chief responsibilities in **Chapter 2** of this instruction, the JEIM Section NCOIC/Chief will:

4.11.3.1. Plan and monitor the progress of propulsion system maintenance production, ensuring maintenance schedules are met by anticipating materiel required and managing delays to prevent schedule disruptions to support operational requirements and maintain required WRE levels. **(T-1).**

4.11.3.1.1. The JEIM Section NCOIC/Chief will report production to Propulsion Flight CC/Chief and immediately inform EM of engine status changes IAW AFI 20-115. **(T-1).**

4.11.3.2. Ensure personnel prepare propulsion units and components for shipment and properly identify units to be returned to depot. **(T-1).**

4.11.3.2.1. Attach CEMS and/or MIS paper products to life-limited components IAW 00-20-series TOs if required by the source of repair. **(T-1).**

4.11.3.3. Ensure documentation of TCTO compliance IAW 00-20-series TOs. **(T-1).**

4.11.3.4. Ensure CEMS and/or MIS products obtained from EM are used for all assigned engines. **(T-1).**

4.11.3.4.1. CEMS and/or MIS products will list all parts and serial numbers installed on the engine. **(T-1).**

4.11.3.5. Establish procedures to ensure all parts and serial numbers are inventoried when an engine is received or released by the section. **(T-1).**

4.11.3.5.1. The JEIM Section NCOIC will notify EM when a different serial numbered part is installed or changed so the automated record is updated. **(T-1).**

4.11.3.5.2. EAWP users EME will be the change correction authority on Part Number/Serial Number Record. **(T-1).**

4.11.3.6. Ensure an engine work folder is established for each engine during periodic inspection, reconditioning, or other maintenance. **(T-1).**

4.11.3.6.1. One work order is initiated in MIS for an entire job.

4.11.3.6.1.1. MIS work orders are completed during inspection, reconditioning or maintenance.

4.11.3.6.1.2. Separate JCN/WCE/Work Event Separator (WES) are initiated for discrepancies found during the look phase of an inspection, subsequent to repair or when maintenance is required beyond the scope of the JEIM induction JCN.

4.11.3.6.2. All engine shops will establish engine work folders on all possessed engines and EM or JEIM will maintain the folders until the engine is transferred. **(T-1).** As a minimum, engine work folders will contain the following:

4.11.3.6.2.1. List of all parts, TCTOs and TCI requirements for the engine. **(T-1).**

4.11.3.6.2.2. Engine/Module/Accessories Information Worksheet. **(T-1).** This document is used to provide a quick synopsis of maintenance accomplished. Minium requirements will include: engine serial number, type, position (if applicable), engine operating time, date started work, date turned serviceable, job control number, maintenance required, reason for removal, list of time change and TCTO requirements. **(T-1).**

4.11.3.6.2.2.1. The Section NCOIC/Chief reviews signature blocks (Crew Chief, Support Section, EM Section) and verifies all repair requirements have been accomplished and will documented in the work folder. **(T-1).**

4.11.3.6.2.2.2. A JCN is created by the JEIM/Module/Accessories Flight or EM section and is used to process repair of the engine and modules. This procedure ensures all maintenance data is documented against one JCN and engine failure information is connected to the in-shop action.

4.11.3.6.2.3. Receiving Inspection Worksheet. **(T-1).** The worksheet is used for documenting items to be accomplished by JEIM prior to engine repair. Minimum requirements will include: FOD check of engine inlet and exhaust, inspection of engine for general condition and fluid leakage, EHR/Turbine Engine Monitoring System (TEMS) data (if applicable), ET&D (if applicable), borescope inspection

(if applicable), a check with OAP lab for possible problems, and a list of unique or problem areas to be checked prior to engine disassembly or maintenance. **(T-1).**

4.11.3.6.2.4. Serially-Controlled/Time-Tracked Item Replacement Record. **(T-1).** This document shows a list of components replaced by nomenclature, old and new part number (if applicable), and serial number.

4.11.3.6.2.5. Daily Summary Record. **(T-1).** This document provides a synopsis of maintenance performed during each shift.

4.11.3.6.2.5.1. Each entry in the Daily Summary Record includes the Employee Number of the person who accomplished the maintenance action. For EAWP users, this process may be automated.

4.11.3.6.2.5.2. Include a sufficient reference in the summary block (e.g., work package, TO) used to perform the task or determine the work performed (subordinate work packages are not required to be listed if the work package for the primary task identifies all required work packages for the task).

4.11.3.6.2.5.3. At the end of each shift, the Crew Chief who verified the entries listed in the Daily Summary Record will annotate their shift, rank, last name, and employee number. **(T-1).** Units may use a general purpose or MAJCOM/locally approved form.

4.11.3.6.2.6. IPI Worksheet. **(T-1).** This form includes the WUC, nomenclature, specific step required for the IPI, and space for employee numbers and signatures of technicians and inspectors performing maintenance. **Note:** Organizations using digital systems may file a printed report in lieu of signatures (e.g., Interactive Electronic Technical Manual (IETM).

4.11.3.6.2.7. Parts Requisition Record. **(T-1).** This document is used to list all parts (including TCIs) on order. As a minimum, this document will include the following headings: Engine/Module/Accessory, TMS, Engine/Module/Accessory Serial Number, Nomenclature, Part Number, National Stock Number (NSN), Requisition Number, Priority, Status, and DIFM Clear with “Yes” and “No” sections. **(T-1).**

4.11.3.6.2.8. JEIM ETS Preparation Worksheet. **(T-1).** This worksheet contains a list of items/tasks to be accomplished by JEIM prior to sending an engine to the ETS. As a minimum, document the following:

4.11.3.6.2.8.1. Inlet and exhaust FOD inspection; any pre-run servicing required (e.g., cap open lines, cannon plugs, engine intake and exhaust inspection). **(T-1).**

4.11.3.6.2.8.2. A thorough tool inventory and an inspection for loose hardware. **(T-1).**

4.11.3.6.2.8.3. The section supervisor will document a review of the work folder to ensure maintenance performed or required actions are documented. **(T-1).**

4.11.3.6.2.9. ETS Pre-run Worksheet. **(T-1).** ETS personnel will complete this document prior to an engine run. **(T-1).**

4.11.3.6.2.9.1. As a minimum, this document will include the following headings: Engine TMS; Engine Serial Number; Engine Operating Time (EOT)/Cycles; JCN; Remarks; Pre-run Emergency Briefing Accomplished with run Supervisor's Name, Signature and Date sections; and Inspection with Area, Employee Number, and Date sections. **(T-1).**

4.11.3.6.2.9.2. As a minimum, area inspections will include: Inlet FOD/Foreign Object (FO); Exhaust FOD/FO; Engine Exterior and FO; General Engine Serviceability; Test Stand/Thrust Bed/Test Equipment for FO; CTK Inventory Complied With (C/W); Engine Servicing Check; all preliminary engine installation and run requirements C/W; and, serviceable fire extinguisher on hand. **(T-1).**

4.11.3.6.2.9.2.1. Each area inspection will have the performing technician's employee number and date accomplished annotated. **(T-1).**

4.11.3.6.2.10. ETS Post Run Worksheet. **(T-1).** This document is used to document items/tasks accomplished by ETS personnel after engine run.

4.11.3.6.2.10.1. As a minimum, this document will include the following headings: Engine TMS; Engine Serial Number; EOT/Cycles; JCN; Maintenance Actions Performed; ETS Supervisors Post-run Review with Name, Signature and Date; and Area Inspections, Employee Number and Date. **(T-1).**

4.11.3.6.2.10.2. As a minimum, area inspection will include: Inlet FOD/FO; Exhaust FOD/ FO; CTK Inventory C/ W; Post-Run OAP Samples C/W (if applicable); AFTO Form 350 or AFTO Form 20, *Caution and Inspection Record*, Attached; Engine Preservation Type and Date; Throttle Secured to Off Position (if applicable) and Tagged; Cap Open Lines/ Cannon Plugs; Install Intake/Exhaust Covers; Servicing Amount; ETS Discrepancies Cleared; 7-Level Inspection of Components Replaced or Disconnected; and Final Leak Check. **(T-1).**

4.11.3.6.2.10.3. ETS personnel will leak-check items not accessible with the engine installed in or on the aircraft prior to leaving ETS. **(T-1).**

4.11.3.6.2.10.4. Each area inspection will have the performing technician's employee number and date accomplished annotated. **(T-1).**

4.11.3.6.2.11. Final Inspection Worksheet. **(T-1).** This document is used to document JEIM requirements after repair or testing has been completed.

4.11.3.6.2.11.1. As a minimum, this worksheet will include: FOD inspection of intake, exhaust, and external engine; borescope engine (if applicable); ensuring throttle is secured and tagged to "off" position (if applicable); capping, plugging and covering fittings and lines; attaching AFTO Form 350 to lines, fittings or plugs that require "leak check" when installed in aircraft (items not accessible in aircraft must be leak checked on ETS); attaching

AFTO Form 350 and/or serviceable tag to engine, ensure supply accounts and MIS entries have been cleared. **(T-1).**

4.11.3.6.2.12. Borescope Worksheets. **(T-1).** Borescope inspection worksheets will be used for engines requiring borescope documentation. **(T-1).**

4.11.3.6.2.13. Uninstalled Engine/Module Blade Blending/FOD Damage Worksheet. **(T-1).** This worksheet is used to document blade blending/FOD damage for uninstalled engines/modules. As a minimum, this worksheet will include: Engine/Module Serial Number, Date, Discrepancy, Stage, Corrective Action including number of blades blended, depth of damage before and after blend, area of damage and Employee Number. **(T-1).**

4.11.3.6.2.14. RCM Worksheets (if applicable). **(T-2).**

4.11.3.6.2.14.1. For JEIM engine builds, a copy of the "RCM Build Options" and "RCM Calculator Summary" worksheets are maintained in the engine work folder or EAWP for documenting life-limited component engine build recommendations.

4.11.3.6.2.14.2. Utilize RCM calculator software in JEIM prior to engine build (see **https://gimms.tinker.af.mil**).

4.11.3.6.2.14.3. The sheets are required only if life-limited components (excluding LRU) are removed and replaced during the JEIM engine build and the TMS engine is available in the RCM. The calculator is not used for engines which do not have the calculator developed.

4.11.3.6.2.15. Worksheets that document engine historical information, critical maintenance management stages, and employee numbers of technicians and supervisors completing maintenance and inspections.

4.11.3.6.2.15.1. Supplement work folders and worksheets to fit unit needs.

4.11.3.6.2.15.2. Flights may use computer-generated products, provided they include all required information. If TMS has an established EAWP, it will be utilized. **(T-1).**

4.11.3.6.2.15.2.1. EAWP users will ensure all maintenance discrepancies are documented in the system's appropriate discrepancy block. **(T-1).**

4.11.3.7. Ensure MICAPs are processed in ES-S; ensure all pertinent data is included. **(T-1).**

4.11.3.8. Upgrade, downgrade and cancel MICAP requirements. **(T-1).**

4.11.4. Noise Suppression Systems (NSS) and Engine Test Stands (ETS) Section. Tests engines to evaluate the quality of maintenance, engine performance, and accomplish engine preservation including engines installed on aircraft in coordination with owning squadron. In addition to the applicable Section NCOIC/Chief responsibilities outlined in **Chapter 2** of this instruction, the NSS and ETS Section NCOIC/Chief will:

4.11.4.1. Assign primary and alternate RAMPOD custodians to perform -107 engineering support request and status updates in RAMPOD for WR-ALC-managed NSSs and ETSs. **(T-1).**

4.11.4.2. Monitor repair activity and ensure reporting and status updates are timely, accurate and kept current in RAMPOD. **(T-1).**

4.11.4.3. Ensure NSS and ETS personnel accomplish minor maintenance, make adjustments to engines, and document engine condition. **(T-1).**

4.11.4.3.1. Ensures ETS components are calibrated on site, if practical. **(T-1).**

4.11.4.4. Brief maintenance personnel on NSS/ETS operating/emergency procedures. **(T-1).**

4.11.4.5. Handle and report halon releases IAW AFI 91-203, *Air Force Consolidated Occupational Safety Instruction*, and AFI 32-7086. **(T-1).**

4.11.5. Module/Accessory Repair Section. Repairs, stores, and maintains fuel nozzles, fuel manifolds, oil pumps, accessory housings, afterburners, thrust reversers, augmentors, engine components, time change modules, and shop replaceable units. Operates and maintains the bearing room IAW TO 44B-1-15, *General Instructions - Jet Engine Anti-friction Bearing Handling, Removal, Cleaning, Inspecting, and Installation at Jet Engine Base Maintenance Facilities* (if applicable).

4.11.6. Small Gas Turbine Engine Section. Repairs and maintains small gas turbines used in aircraft. In addition to applicable Section NCOIC/Chief responsibilities outlined in **Chapter 2** of this instruction, the Small Gas Turbine Engine Section NCOIC/Chief will ensure personnel are qualified to operate small gas turbine engines and test stands. **(T-1).**

4.11.7. Engine Equipment Maintenance Section. Maintains, manages, and stores engine support and removal/installation/transportation equipment and trailers. The Engine Equipment Maintenance Section NCOIC/Chief will:

4.11.7.1. Ensure engine removal/installation/transportation trailer status is properly reported IAW AFI 21-103 and MAJCOM supplements. **(T-1).**

4.11.7.2. Track all removal/installation/transportation trailers and adapters in the MIS. **(T-1).**

4.11.7.3. Ensure equipment forms and MIS documentation are complete, accurate, and accomplished for all maintenance and scheduled inspections. **(T-1).**

4.11.7.4. Ensure status is accurately reflected in both the maintenance forms and the MIS. **(T-1).**

4.11.8. Propeller Section. Repairs, builds up, tears down, inspects, tests, and modifies propellers, valve housings, pump housings, and associated components.

4.11.9. Quick Engine Change (QEC) Kit Management. QEC kit removals and installations are coordinated with the SRAN EM and loaded in MIS as a part number-serial number item, reflecting where the kit is installed or spared.

4.11.9.1. In addition to repair cycle procedures outlined in **Chapter 9** in this instruction, the technician removing a QEC kit item from an engine will complete an AFTO Form

350, enters the reason for removal in Block 14, and annotates the QEC kit inventory for each repairable item. **(T-1).**

4.11.9.1. **(AFMC)** [DEV] QEC kits removed to facilitate other engine maintenance, but will be reinstalled on the original engine and remain with that engine during shipment are required only to be tagged by an AFTO 350 or similar method when removed, and no inventory action is required.

4.11.9.2. Technicians will complete the AF Form 596, *Quick Engine Change Kit Inventory* for on repair cycle items and QEC kit unique items, when an engine enters the section for tear down. **(T-1).**

4.11.9.2. **(AFMC)** [DEV] QEC kits removed to facilitate other engine maintenance, to include teardown, but will remain with the original engine require no inventory to be accomplished.

4.11.9.2.1. If TO requirements restrict reuse of items, the technician will mark the AF Form 596 with an asterisk to show a demand has been placed on supply. **(T-1).**

4.12. Test, Measurement, and Diagnostic Equipment (TMDE) Flight (N/A to the ARC). Maintains, calibrates, and certifies TMDE, traceable through the AF Primary Standards Laboratory (AFPSL) to the National Institute of Standards and Technology (NIST), or other AF Metrology and Calibration (AFMETCAL)-approved source. Provides base-level support of aircraft, precision-guided munitions, ground systems, and other equipment assigned to the base or geographically-separated units. Calibrates, certifies, and maintains TMDE IAW TO 00-20-14, TO 33K-1-100-2-CD-1, and the supported CMS. A Rapid Assistance Support for Calibration (RASCAL) may also be assigned.

4.12.1. In addition to applicable Flight CC/Chief responsibilities in **Chapter 2** of this instruction, and TO 00-20-14, the TMDE Flight Chief (referred to as "PMEL Manager" in TO 00-20-14) will:

4.12.1.1. Ensure all TMDE (AF-owned, leased, or borrowed) used on an AF installation to support an AF mission is calibrated under the guidance of the AFMETCAL program. **(T-1).**

4.12.1.1.1. TMDE owned and used by contractors performing under an AF contract on an AF installation to support an AF mission is considered leased/borrowed equipment when determining calibration requirements. See AFI 21-113, *Air Force Metrology and Calibration (AFMETCAL) Management*, and TO 00-20-14 for additional guidance.

4.12.1.2. Establish a PMEL Quality Assurance Section. **(T-1).** The PMEL Quality Program (QP) is outlined in TO 00-20-14.

4.12.1.2.1. The QP is established by the TMDE Flight Chief and the PMEL Quality Section NCOIC/Chief is responsible to the TMDE Flight Chief.

4.12.1.2.2. The PMEL QP and AFMETCAL Program evaluates processes used to validate the technical proficiency and capability of the PMEL.

4.12.1.2.3. Personnel Evaluations (PE), Quality Verification Inspections (QVI), and Evaluator Proficiency Evaluations (EPE) will not be performed on calibration/certification tasks by MSEP. **(T-1).**

4.12.1.2.3.1. MSEP PEs and QVIs may be performed on other logistics/maintenance actions within PMEL to include, but not limited to, production control, maintenance supply actions, and QA functions not associated with calibration/certification tasks but identified on the flight's MTL.

4.12.1.2.4. The TMDE Flight Chief will publish a monthly QP Activity Summary and route it through the Operations Officer/MX SUPT to the SQ/CC (or organizational equivalent). **(T-2).**

4.12.1.2.4.1. The report format shall comply with TO 00-20-14 and meet local requirements. **(T-2).**

4.12.1.2.4.2. Groups with TMDE Flights assigned will include the TMDE QP Activity Summary data in the QA monthly summary IAW **Chapter 6** of this instruction. **(T-2).**

4.12.1.3. Establish a Production Control Section. **(T-1).** The Production Control Section will:

4.12.1.3.1. Ensure TMDE monitors are properly trained and maintain a database or log to track training events (dates, names, organizations, etc.). **(T-3).**

4.12.1.3.2. Use the PMEL Automated Management System (PAMS)/MIS to control TMDE processed for maintenance. **(T-1).**

4.12.1.3.3. Ensure the current status of all TMDE processed into the PMEL for repair and calibration is reflected in the PAMS/MIS database. **(T-3).**

4.12.1.4. Assist Owning Work Center (OWC) personnel in locating TMDE to meet their mission requirements and avoid abuse of the TMDE priority system. **(T-3).** The OWC should attempt to meet mission requirements prior to requesting emergency or mission essential support. TMDE will be scheduled using one of the three following categories:

4.12.1.4.1. EMERGENCY Calibration or Repair: TMDE that is inoperable or due calibration and for which a critical job is at a work stoppage.

4.12.1.4.1.1. A letter of justification signed by the OWC Maintenance Supervision must accompany the TMDE. **(T-3).** The letter may be handwritten to prevent delay. Telephone verification between the OWC and PMEL is encouraged.

4.12.1.4.1.2. PMEL must accept emergency TMDE at any time. **(T-2).** Immediate and continuous repair action is required until repair/calibration is completed or status of the item changes (e.g., AWP, deferred for lack of standards or technical data).

4.12.1.4.1.3. The TMDE Flight Chief may require an OWC technician to accompany the TMDE.

4.12.1.4.1.3.1. The technician should remain at the PMEL to provide

technical assistance until the work is completed or placed in an interim-complete status.

4.12.1.4.1.4. The OWC or using organization must pick up the TMDE immediately upon notification of completion. **(T-3).**

4.12.1.4.2. MISSION ESSENTIAL Calibration or Repair: TMDE that is part of a unit's deployment package, is critical to daily peacetime operations, or TMDE assets falling below critical availability levels.

4.12.1.4.2.1. A letter of justification signed by the OWC Flight CC/Chief or equivalent will accompany the TMDE unless pre-identified by OWC Flight CC/Chief and approved by TMDE Flight Chief or delegated approval authority. **(T-3).**

4.12.1.4.2.2. PMEL must accept mission essential TMDE any time during duty hours and schedule it with sufficient priority to ensure the calibration/ repair is complete by the date and time specified by the customer. **(T-3).**

4.12.1.4.2.3. The OWC or using organization must pick up the TMDE immediately upon notification of completion. **(T-3).**

4.12.1.4.3. ROUTINE Calibration or Repair: TMDE not categorized as emergency or mission essential. PMEL must accept routine TMDE during normal turn-in and pick-up hours. **(T-3).**

4.12.1.5. Establish a Maintenance Supply Support Function. **(T-2).** Maintenance Supply Support function will:

4.12.1.5.1. Manage the flight's maintenance-supply actions IAW **Chapter 9** of this instruction, and AFI 23-101. **(T-2).** Provide assistance to other flight personnel to resolve supply problems.

4.12.1.6. Manage shipment of TMDE. **(T-2).** TMDE items needing contract, warranty, depot or lateral calibration/repair and return are processed through local Deployment and Distribution Flight, Traffic Management Element IAW TO 00-20-14, and AFI 24-203.

Chapter 5

MAINTENANCE OPERATIONS

5.1. General. Maintenance Operations (MO) is directly responsible to the MXG/CC for the administration, analysis, training management, and programs and resources necessary to support the group's production effort. MO is comprised of the following sections: EM, PS&D, MMA, MOC, MT, and Programs and Resources (P&R). In missile organizations, MO will be organized as a Maintenance Operations Squadron, as applicable. For the purposes of this instruction, the term Maintenance Operations is equivalent with Maintenance Operations Flight for ANG units.

5.1. (AFMC)[DEV] General. Within the 412 MXG, the 412 MXS Propulsion Flight Business Unit will perform duties and responsibilities of Engine Management (EM) Section listed in AFI 21-101.

5.2. Maintenance Operations (MO). MO is the central agency for monitoring and developing long-range strategies of fleet management to sustain the health of the fleet. Fleet management is defined as the effective utilization of available resources to accomplish the aircraft support cycle from planned maintenance events to operations schedule execution. It is a disciplined and prioritized scheduling effort that optimizes support to aircraft requirements such as flying/operational events, ground training events, scheduled maintenance inspections, aircraft/system configuration control, aircraft/system modification schedules and aircraft/system recovery maintenance. Effective fleet management results in consistent availability of quality aircraft/systems to meet operational requirements. The Maintenance Operations Superintendent position will be filled by SNCO 2RXXX personnel. **(T-3)**. (N/A to the ANG).

5.2. (AFMC)Maintenance Operations (MO). Maintenance Operations Superintendent position can be filled by civilian equivalent. **(T-2).**

5.2.1. **Maintenance Operations Officer-in-Charge/Superintendent (OIC/SUPT).** In addition to the applicable Flight CC/Chief responsibilities in **Chapter 2** of this instruction the MO OIC/SUPT will:

5.2.1.1. Develop and publish the wing operations/maintenance schedule in coordination with other squadrons and submit to both the OG/CC and MXG/CC for approval. **(T-1).**

5.2.1.2. Determine long-range fleet health maintenance priorities. **(T-1).**

5.2.1.3. Manage the data collection process, review data and verify analysis for maintenance data collection requirements. **(T-1).**

5.2.1.4. Evaluate and provide trend analysis information to the MXG/CC and SQ/CCs. **(T-1).**

5.2.1.5. Ensure aircraft status is properly reported and maintained IAW AFI 21-103. **(T-1).**

5.2.1.5. **(AFMC)** Include AFMC AVDO and AFMC Aircraft Fleet Manager (AFMC/A3F) in coordination's for all proposed assignment/possession changes. **(T-2).**

5.2.1.5.1. Designate an Aerospace Vehicle Distribution Officer (AVDO) in PS&D and ensure they accurately report all assignment/possession changes through the

MAJCOM AVDO IAW AFI 21-103 and AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination*. **(T-1).**

5.2.1.6. Initiate, review, and validate special analysis studies. **(T-1).** MO OIC/SUPT will:

5.2.1.6.1. Determine planning factors for the next year's flying hour program. **(T-1).**

5.2.1.6.2. Ensure the Mx CAP2 model is utilized for the assigned MDS, if available. **(T-1).**

5.2.1.6.2. **(AFMC)** See deviation at paragraph 2.2.4.3.

5.2.1.6.3. **(Added-AFMC)** Ensure data is valid and submitted to meet MAJCOM reporting suspense requirements. Before submission, reconciliation and coordination with squadron and group leadership is required to ensure comments fully explain causes of the data. Comments should focus on mission requirements, improving equipment performance, identifying emerging support problems, and projecting current trends. Also, when operational requirements are not achieved, determine and explain the root causes behind it. **(T-2).**

5.2.1.7. Develop procedures to update Geographical Location (GEOLOC) codes for all on and off-station possessed aircraft and ensure GEOLOC codes are updated/correct in the MIS "Location Subsystem" (G081 units are exempt as long as a Higher Headquarters (HHQ) agency accomplishes this requirement). **(T-1).**

5.2.1.8.1. IMDS units will use code "XXXX", and G081 units will use "CCCC" for classified locations. **(T-1).**

5.2.1.8.2. The MO OIC/SUPT will ensure any deploying unit loads all equipment into the IMDS-CDB AEF subsystem (G081 units are exempt). **(T-1).**

5.2.1.9. Host DFTs/CFTs, provide in-briefs on unit-specific maintenance and tool-control requirements, review plans and coordinate/monitor status of aircraft and progress of repair work. **(T-1).**

5.2.1.10. Participate in the review of base level repair capability IAW TO 00-20-3, AFI 21-123, and supplements. **(T-1).**

5.2.1.11. Publish wing notification requirements for munitions-loaded or unloaded aircraft. **(T-2).**

5.2.1.12. Publish local radio call signs for maintenance LMR networks. **(T-1).**

5.2.1.13. **(Added-AFMC)** Ensure processes and procedures are in place and personnel are designated to support accomplishment of Flying Hour Program tracking and reconciling IAW intent of AFI 21-103, *Equipment Inventory, Status and Utilization Reporting*. **(T-2).**

5.2.2. **Maintenance Operations Center (MOC)**. The MOC monitors and coordinates sortie production, maintenance production, and execution of the operations and maintenance schedules while maintaining visibility of fleet health indicators. Through coordination with maintenance units, the MOC communicates priorities for competing limited resources (e.g., fuel or calibration docks, wash racks, and dispatched specialists from the maintenance

squadron(s) (e.g., egress)) based on daily operations schedule and maintenance priorities. The exchange of information between squadrons and the MOC must be in sufficient detail to allow the MOC to comply with reporting requirements and to identify potential problems.

5.2.2.1. The MOC will:

5.2.2.1.1. Monitor the status of aircraft/systems, as directed, (through the use of electronic or manual visual aids) including ETIC, progress of FCFs, and location of each aircraft on station. **(T-1).**

5.2.2.1.1.1. Utilize the Enhanced Maintenance Operations Center (EMOC). **(T-1). Exception:** For those units using G081, the use of EMOC is optional.

5.2.2.1.1.1.1. EMOC is the program of record for the AF and its use is mandated for all units using the Integrated Maintenance Data System Central Database (IMDS CDB) for aircraft maintenance data collection/documentation.

5.2.2.1.1.1.2. An EMOC interface to the Core Automated Maintenance System for Mobility (CAMS-FM/G081) has not been completed to date. If EMOC is used, dual entry of maintenance data will be required until the EMOC/G081 interface is implemented. **(T-1).**

5.2.2.1.2. Aircraft maintained or supported by the unit but not on station will also be tracked (aircraft cross country etc.). **(T-1).**

5.2.2.1.3. Coordinates maintenance on the alert force, if applicable. **(T-1).**

5.2.2.1.4. Ensure status boards depicting aircraft status and location comply with Security Program guidelines. **(T-1).**

5.2.2.1.5. Monitor the status and ETIC of MEL-designated AGE if it falls below critical levels. **(T-1).**

5.2.2.1.6. Monitor the status of ECM and sensor pods IAW AFI 10-201, *Status of Resources and Training System*. **(T-1).**

5.2.2.1.6.1. When MC pod availability falls below requirements per the DOC or OPLAN, the MOC will track/monitor the following information: pod serial number, status (AWP/Awaiting Maintenance (AWM)), MICAP NSN, off-base requisition numbers, and ETIC. **(T-1).**

5.2.2.1.6.2. Classify information IAW AFI 31-401, *Information Security Program Management*.

5.2.2.1.7. Verify aircraft status and ETICs with the Pro Super(s) and ensure they are properly documented in the MIS IAW AFI 21-103, AFCSM, 21-564, Vol 2, *Status and Inventory Reporting Software User Manual*. **(T-1).**

5.2.2.1.7.1. The MOC will verify aircraft status and ETIC using the MIS before reporting it. **(T-1).**

5.2.2.1.8. Inform affected activities of changes in priorities, plans, and schedules. **(T-1).**

5.2.2.1.9. Coordinate on changes to the operations schedule with applicable agencies by use of AF Form 2407. **(T-1).** The MOC will:

5.2.2.1.9.1. Ensure all deviations to the daily operations schedule are reviewed and accurately reported. **(T-1).**

5.2.2.1.9.2. Forward a copy of each AF Form 2407 and the daily flying schedule, with all annotated deviations, to MMA. **(T-1).**

5.2.2.1.10. Request support services outside the scope of the MXG (e.g., standby fire fighting capability, aircraft water, snow removal, fueling and defueling service, civil engineer support, or control tower clearances for ground movement of aircraft and equipment). **(T-1).**

5.2.2.1.10.1. Coordinate on all aircraft engine runs and all aircraft ground movements conducted by maintenance personnel prior to execution. **(T-1).**

5.2.2.1.11. Develop, implement, and maintain functional checklists. **(T-1).**

5.2.2.1.11.1. Functional checklists are required for use during actions such as nuclear mass loads, Broken Arrow, Dull Swords, Bent Spear, aircraft crash, aircraft FOD, aircraft damage, flightline fire, severe weather warning or evacuation, runway closure, Quick Reaction Checklists (QRC), injuries resulting from aircraft maintenance and any other unusual circumstances deemed necessary.

5.2.2.1.11.2. For OPLAN 8010 notification, use the plan implementation checklists.

5.2.2.1.11.2.1. Use unit OPLANs as a guide in developing these checklists.

5.2.2.1.11.2.2. Checklists contain those actions required to be taken by functional area(s).

5.2.2.1.11.2.3. The MOC will maintain checklists that implement all approved MAJCOM and local requirements. **(T-2).**

5.2.2.1.12. Coordinate munitions delivery priorities with flying units and munitions maintenance activities/control, when tasked. **(T-1).**

5.2.2.1.12.1. Maintain a contact list and notify the base Fire Emergency Services and all applicable agencies that require notification of munitions-loaded or unloaded aircraft. **(T-2).**

5.2.2.1.12.1.1. The MOC will provide agencies with the aircraft type, tail number, location, type of explosives, and arming status. **(T-1).**

5.2.2.1.13. Upon notification of deployments, ensure all deploying equipment is identified and loaded into the IMDS-CDB, AEF subsystem or designated MIS equivalent for the duration of the deployment. **(T-1).**

5.2.2.1.14. Monitor and manage reporting of Hangar Queen aircraft/systems IAW **Chapter 11** of this instruction. **(T-1).**

5.2.2.1.14. **(AFMC)** Ensure aircraft boards are visibly marked to show Hangar Queen Status and include date of last flight, ETIC, and expected fly date. **(T-2).**

5.2.2.1.15. Notify Flightline Expediters of OAP code "C" and "E" conditions. **(T-1).**

5.2.2.1.16. Ensure facilities and visual aids meet the following minimum standards:

5.2.2.1.16.1. A completely enclosed room with air conditioning and heating. **(T-1).** An observation room is permitted.

5.2.2.1.16.1.1. Doors to the MOC and the observation room will be either mechanically or electrically locked to control access. **(T-1).**

5.2.2.1.16.2. Isolate MOC electrical power circuits and provide a standby power source and emergency lighting. **(T-1).**

5.2.2.1.16.2.1. The MOC will establish procedures to operate standby power sources. **(T-1).**

5.2.2.1.17. Maintain the status and location of all transient aircraft. **(T-1).**

5.2.2.1.17.1. Post the priority of each transient aircraft on the status board, based on the maintenance priorities listed in **Table 1.1** **(T-1).**

5.2.2.1.17.2. Coordinate with the appropriate agency for aircraft maintenance support. **(T-1).**

5.2.2.1.17.3. Contact WS for arming or de-arming of transient aircraft IAW **Chapter 11** of this instruction. **(T-1).**

5.2.2.2. MOC Maintenance Communications. Reliable, redundant and effective communications systems are essential for efficient operation. Communications equipment will be operated and managed IAW AFI 33-590, Radio *Management*, AFI 33-580, *Spectrum Management*, and AFI 33-200, *Information Assurance (IA) Management*. The MOC NCOIC/SUPT will:

5.2.2.2.1. Establish a procedure to process requests for specific radio equipment to support maintenance activities IAW AFMAN 23-122. **(T-1).**

5.2.2.2.1.1. Specific radio allowances are stated in AS 660 at **https://earms2.wpafb.af.mil/SITES/ASRS/HOME.ASP**.

5.2.2.2.2. Ensure a Very High Frequency (VHF)/Ultra High Frequency (UHF)/ High Frequency (HF) radio is authorized and available to provide communications between aircraft and maintenance. **(T-1).**

5.2.2.2.3. Ensure the MOC has a hotline on the secondary crash phone net. **(T-1).**

5.2.2.2.3.1. When required, direct communications lines will be provided to QA, Munitions Control, EOD, airfield operations, base fire department, NDI, control tower and the central security control. **(T-1).**

5.2.2.2.4. Develop and exercise comm-out procedures to include loss of radios, Local Area Network (LAN) and phone. **(T-1).**

5.2.2.2.5. Ensure MOC personnel receive initial radio operating training before assuming duties involving radio operations IAW AFI 33-590 and **Chapter 11** of this instruction. **(T-1).**

5.2.3. **Engine Management.** EM manages unit efforts to maintain adequate engine support for mission requirements by monitoring engine removals and replacements, component tracking, engine TCTOs and TCIs, engine records in the MIS and CEMS; and perform Engine Manager duties. Combine functions supporting EM within the wing and physically co-locate with the Propulsion Flight. The SRAN Engine Manager works and is co-located with the EM section.

5.2.3. **(AFMC) [DEV] Engine Management.** Within the 412 MXG, the 412 MXS Propulsion Flight Business Unit will perform duties and responsibilities of Engine Management (EM) Section listed in AFI 21-101.

5.2.3.1. Specific EM responsibilities are detailed in **Chapter 15** of this instruction.

5.2.4. **Plans, Scheduling, and Documentation (PS&D)**. PS&D is responsible for coordinating aircraft maintenance requirements and utilization scheduling between maintenance, operations, and external agencies. PS&D oversees the entire maintenance scheduling effort throughout the wing and notifies applicable senior managers of scheduling process discrepancies and recommended courses of action.

5.2.4.1. Specific PS&D responsibilities are detailed in **Chapter 15** of this instruction.

5.2.5. **Maintenance Management Analysis (MMA).** MMA tracks, analyzes, and presents information to help senior leadership assess the health of the units' weapon systems and equipment. MMA acts as the group POC for MIS issues and perform analyses to assess and improve unit performance (e.g., effectiveness, and efficiency of unit resources, and logistical support processes). The MIS provides the main source of information used by analysts to assess unit performance and capability. IMDS-CDB/G081 and Reliability and Maintainability Information System (REMIS) are the prime sources of data.

5.2.5. **(AFMC) Maintenance Management Analysis (MMA).** The senior 2R0 or civilian equivalent member is the unit functional manager and monitors and controls analysis resources for the unit. All issues relating to MIS database management, and training should be directed to the unit functional manager first. The unit functional manager will elevate issues beyond the unit control to the wing's analysis functional manager. This includes allocations of AETC and AFMC/SSG formal school quotas. **(T-2).**

5.2.5.1. MMA will:

5.2.5.1.1. Be centrally organized but may locate analysts in the squadron to enable maximum responsiveness and effectiveness.

5.2.5.1.1.1. When analysts are located in the squadron, they will still work directly for the MMA Section NCOIC/Chief who will provide their training and monitor the quality/relevancy of their workload. **(T-1).**

5.2.5.1.2. Establish working relationships with the MXG and squadron leadership through visits to work centers and provide assistance to all unit personnel in the area of the MIS, data extraction and interpretation. **(T-1).**

5.2.5.1.3. Review data for anomalies and identify areas requiring further study. **(T-1).**

5.2.5.1.3.1. Provide presentations, reports, studies/analyses, and briefings as requested or deemed appropriate. **(T-1).**

5.2.5.1.3.2. Provide information on analysis services and capabilities to unit supervision. **(T-1).**

5.2.5.1.4. Assist unit leaders with the application and interpretation of maintenance data. **(T-1).**

5.2.5.1.5. Coordinate with PS&D and unit's Maintenance Supervison to provide monthly airframe, facility and personnel capabilities (as required), attrition, and spare factors for use in planning the annual FHP. **(T-1).**

5.2.5.1.5.1. MAJCOMs will publish attrition and spare factors computations in a supplement to this instruction.

5.2.5.1.5.1. **(AFMC)** Instructions are noted in **Attachment 8** of this supplement.

5.2.5.1.5.1.1. MMA will use MAJCOM supplement guidance to calculate attrition and spare factor computations. **(T-1).**

5.2.5.1.5.2. MMA will provide required data to populate the Mx CAP2 model, when used. **(T-1).**

5.2.5.1.5.2. **(AFMC)** See deviation at paragraph 2.2.4.3.

5.2.5.1.6. Analyze equipment performance trends to identify problems affecting the unit mission and, whenever possible, provide predictive analytical information with recommendations to unit's Maintenance Supervison. **(T-1).**

5.2.5.1.7. Verify accuracy of the Job Data Documentation (JDD) subsystem of MIS. **(T-1).** MMA will:

5.2.5.1.7.1. Validate data entered into MIS as part of daily analysis duties and informs affected agencies of discrepancies. **(T-1).**

5.2.5.1.7.2. Identify erroneous or missing data to the responsible agency for correction or completion. **(T-1).**

5.2.5.1.8. Control the assignment of unit work center and mnemonic codes. **(T-1).** MMA will:

5.2.5.1.8.1. Coordinate with P&R on the assignment of alpha numeric and work center codes. **(T-1).**

5.2.5.1.8.2. Publish written guidance to control these codes when not provided by higher headquarters and may use multiple mnemonic codes within a work center code to accommodate different AFSCs assigned. **(T-1).**

5.2.5.1.8.3. Coordinate new or revised mnemonic codes with affected activities for planning purposes. **(T-1).**

5.2.5.1.9. Be responsible for system database management. **(T-1).** Work centers throughout the organization manage those applications and functions applicable to their environment.

5.2.5.1.10. Assists MIS users in developing procedures for collecting information from deployments and exercises where the MIS is not available. **(T-1).**

5.2.5.2. In addition to the applicable Section NCOIC/Chief responsibilities outlined in **Chapter 2** of this instruction, the MMA Section NCOIC/Supervisor will:

5.2.5.2.1. Ensure each analyst assigned attends a local familiarization course for 2R0X1 personnel. **(T-1).**

5.2.5.2.1. **(AFMC)** [DEV] Not required if local familiarization course does not exist due to hiring of civilian personnel based on previous qualifications. **(T-2).**

5.2.5.2.1.1. As a minimum, the course will include weapon system/communications electronics familiarization, flightline and shop operations, organizational structure and roles of each group, squadron, and flight. **(T-1).**

5.2.5.2.1.2. Analysts will attend the course within 3 months of assignment to the unit. **(T-1).**

5.2.5.2.1.3. For remote assignments, analysts will attend within 1 month of assignment. **(T-1).**

5.2.5.2.1.4. For ARC, Analysts will attend the course within 6 months of assignment to the unit. **(T-1).**

5.2.5.2.1.5. **(Added-AFMC)** Ensure a DIT exists. **(T-2).**

5.2.5.2.1.6. **(Added-AFMC)** IMDS-CDB/G081 Users Group. Establish an IMDS-CDB/G081 Users Group to identify user problems, provide on the spot training to correct user documentation problems, and to discuss other issues relating to operation of the system. Conduct meetings as needed and prior to loading an IMDS-CDB release/G081 major program change to ensure all personnel are aware of the changes. An agenda (pre-meeting) and meeting minutes (post-meeting) will be published and sent to all work centers. The use of electronic means (telecon, Defense Collaboration Services (DCS), etc.) for the meeting is authorized. **(T-2).**

5.2.5.2.1.7. **(Added-AFMC)** Set priorities and resolve conflicts on all automated maintenance systems priorities. **(T-2).**

5.2.5.2.1.8. **(Added-AFMC)** Coordinate with wing plans personnel to develop planning data and inputs. **(T-2).**

5.2.5.2.1.9. **(Added-AFMC)** Ensure timely submission of data to meet MAJCOM reporting suspense's and validity of data submissions. Work with the senior maintainers on all comments written to explain the meaning of the data presented. **(T-2).**

5.2.5.2.1.10. **(Added-AFMC)** Ensure database managers (DBMs) have the

capability to support the 24-hour processing requirements for IMDS-CDB. **(T-2).**

5.2.5.2.1.11. **(Added-AFMC)** Rotate DBMs every 2 years to ensure all analysts are fully trained and have experience in this vital area (N/A to ARC). Training may be obtained through the local communications squadron, AETC specialized courses, MAJCOM specialized training, or contractor training. **(T-2).**

5.2.5.2.1.12. **(Added-AFMC)** MMA Team Concept. MMA teams identify problem areas for additional study using MIS data gathering, research, and investigation. Deficiency Analysis/QA assists by providing in-depth technical expertise. The MMA team will present MXG leadership with completed studies focusing on the cause and effect of problem areas, and include recommendations for course(s) of action as appropriate. **(T-2).**

5.2.5.3. Maintenance Information Systems (MIS). For management of IMDS-CDB, G081, and REMIS, follow AFCSM 21-556, Vol 2, *Intro to IMDS CDB*, MAJCOM/Lead Command guidance, unit procedures, and REMIS user manuals. Personal computers and software used as "stand-alone" systems are not considered MIS.

5.2.5.3. **(AFMC)** The command maintenance data functional manager at HQ AFMC/A4MM is responsible for all issues related to MIS. They will provide technical advice to units on problems beyond their expertise. **(T-2).**

5.2.5.3.1. Request to modify/create new functionality within IMDS-CDB IAW AFSCM 21-556 Vol 2. **(T-1).** G081 units will submit a System Change Request for any new requirements or corrections to existing features. **(T-1).**

5.2.5.3.2. Documentation Accuracy and Completeness. Data integrity is the responsibility of every member of the unit. All personnel are responsible for ensuring accuracy and completeness.

5.2.5.3.2.1. Subsystem monitors are responsible for ensuring the accuracy of their subsystem.

5.2.5.3.3. MAJCOMs will provide guidance describing the management of MIS assigned to wings within their command. At a minimum the guidance will establish procedures to ensure:

5.2.5.3.3. **(AFMC)** Local procedures are authorized for compliance of any established AF policy unless specified in supplemental guidance for this paragraph. **(T-2).**

5.2.5.3.3.1. IMDS-CDB/G081 security is maintained IAW AFI 33-200 and AFI 33-115, *Air Force Information Technology (IT) Service Management.*

5.2.5.3.3.1.1. Analysis personnel coordinate MIS access permission requirements to enable MDD on non-possessed aircraft.

5.2.5.3.3.2. Analysis personnel provide expertise on IMDS-CDB/G081 for resolution of problems beyond the work center's and sub-system monitors' control.

5.2.5.3.3.2.1. **(Added-AFMC)** The DBMs will have access to programs required to manage the IMDS-CDB database in the host unit. **(T-2).**

5.2.5.3.3.2.1.1. **(Added-AFMC)** Individual analysts not directly associated with database management are still required to receive training in QLP report writer, on-line inquiries, and conversational commands to obtain nonstandard data from the IMDS-CDB database to perform analysis duties. This training will be documented on an AF IMT 797, Job Qualification Standard Continuation/Command JQS and/or Work center JQS task in TBA, and included in the analysts' training records. **(T-2).**

5.2.5.3.3.3. Support is provided to tenant organizations and users.

5.2.5.3.3.3. **(AFMC)** DBM support requirements will be identified in a MOA or Host Tenant Support Agreement. **(T-2).**

5.2.5.3.3.4. Coordination with the Defense Enterprise Computing Center (DECC) or AF Network Control Center (AFNCC) on all matters concerning IMDS-CDB.

5.2.5.3.3.5. The DECC supports all requirements concerning the operation and maintenance of IMDS-CDB.

5.2.5.3.3.6. Scheduled MIS downtime is published for users.

5.2.5.3.3.7. Analysis personnel control and monitor submissions of IMDS-CDB Difficulty Report (DIREP), and AF Form 3215, *Information Technology/National Security Systems Requirements Document*.

5.2.5.3.3.8. Coordination on matters pertaining to the interface of other automated systems with IMDS-CDB.

5.2.5.3.3.9. Development of a functional checklist to establish timelines and MIS data capture requirements for use in the event of a weapon system mishap.

5.2.5.3.3.9.1. The checklist must require immediate capture and isolation of the historical data for the mishap weapon system regardless of the time or day of week. Contact the Database Manager (DBM) to immediately put the IMDS-CDB in File Update Mode (FUD) until the functional checklist can be completed. G081 equipment records will be locked using screen 9012 (Lock/Unlock Aircraft/Data Records).

5.2.5.3.3.10. Support of the C-E maintenance community referring to AFI 21-103 and AFI 33-150, *Management of Cyberspace Support Activities* for maintenance analysis and host DBM responsibilities.

5.2.5.3.3.11. Control of access to specific IMDS-CDB programs and subsystems by utilizing Transaction Identification Codes (TRICs) security profiles or screen 9057(program access) for G081.

5.2.5.3.3.11.1. Periodically review IMDS security profiles and G081 access keys. Take appropriate measures when a compromise is suspected or reported.

5.2.5.3.3.11.2. **(Added-AFMC)** Specific TRICs or options within TRICs will be restricted by the DBM on request from the subsystem manager or when the DBM deems it necessary. **(T-2).**

5.2.5.3.3.12. IMDS-CDB subsystem managers are informed of the status of applicable TRICs prior to turning the TRIC on or off.

5.2.5.3.3.13. **(Added-AFMC)** Notify affected users if errors are found in the IMDS-CDB database and take prompt action to correct the errors. **(T-2).**

5.2.5.3.3.14. **(Added-AFMC)** Coordinate and control recovery procedures for IMDS-CDB. **(T-2).**

5.2.5.3.3.14.1. **(Added-AFMC)** Maintenance Automated Products (Nonstandard MIS Products). The use of computerized products from the IMDS-CDB/G081 and REMIS systems are major sources of information for maintenance data systems analysis. All MMA personnel will receive training to enable them to make maximum use of these systems. This training will be documented on an AF IMT 797, Job Qualification Standard Continuation/Command JQS and/or Work center JQS task in TBA, and included in the analysts' training records. **(T-2).**

5.2.5.3.3.14.2. **(Added-AFMC)** Query Language Processor (QLP), Integrated Query Utility (IQU) and Structured Query Language (SQL) allow retrieval of information from IMDS-CDB database files. These utilities are intended to provide nonstandard data and report formats for specific uses and update or change data base information. **(T-2).**

5.2.5.3.3.14.3. **(Added-AFMC)** LIMS-EV is a data retrieval system available to analysts for data extraction. This retrieval system is used to extract information from the REMIS system on Equipment Inventory, Multiple Status and Utilization Reporting subsystem (EIMSURS), Product Performance Subsystem (PPS), and Generic Configuration Status and Accounting Subsystem (GCSAS) and the Debrief Subsystem. **(T-2).**

5.2.5.3.3.14.4. **(Added-AFMC)** FOCUS allows the retrieval of information from G081 database files. This utility is intended to be used to provide nonstandard data and report formats for specific uses. **(T-2).**

5.2.5.3.4. MMA is responsible for the overall management of the JDD subsystem and provides overall management and control of the maintenance deferred code listing. **(T-1).**

5.2.5.3.4.1. Changes to the table will be coordinated with PS&D. **(T-1).**

5.2.5.3.5. Data Integrity Team (DIT). MMA is the OPR for the DIT. All units will establish a DIT. **(T-1).**

5.2.5.3.5.1. The purposes of the DIT include: (1) ensuring the unit has complete and accurate data in the MIS and aircraft forms, (2) identifying and quantifying problems within the unit preventing complete and accurate documentation, and (3) identifying and correcting the root causes for poor data integrity. The DIT is established to evaluate/isolate/eliminate documentation problems in IMDS-CDB/G081. MMA is the OPR for the team and will ensure that all assigned DIT members are trained in the use of MIS applicable programs for the data integrity review/correction process. **(T-2).** Errors identified by the DIT team will be

reconciled IAW **paragraph 5.2.5.12.5.5.3.2** of this instruction**. (T-1).**

5.2.5.3.5.2. The DIT will include, at a minimum, one representative from each squadron under the MXG. It will include participation from PS&D, MOC, DMS, EM, Debrief Section, and QA as determined by MMA. **(T-2).**

5.2.5.3.5.3. MAJCOMs/MMA will determine the frequency of DIT meetings.

5.2.5.3.5.3. **(AFMC)** Data Integrity Team meetings will be held at a minimum, quarterly or more frequently as deemed necessary from the MMA Section Chief. The use of electronic means (telecon, Defense Collaboration Services (DCS), etc.) for the meeting is authorized. **(T-2).**

5.2.5.3.5.4. Representatives will be at least 5-levels and familiar with the unit's assigned weapon system(s). **(T-2).**

5.2.5.3.5.5. As a minimum, the following functions will be performed by the DIT:

5.2.5.3.5.5.1. Ensure MIS accurately reflects AFTO Form 781-series forms entries. **(T-1).**

5.2.5.3.5.5.2. Compare all NRTS actions and turnarounds in IMDS-CDB/G081. **(T-1).**

5.2.5.3.5.5.2.1. G081 users will request these reports from LRS.

5.2.5.3.5.5.2.2. Work with supply LRS/Materiel Management activity to resolve conflicts. **(T-1).**

5.2.5.3.5.5.3. Run maintenance action review background reports for all work accomplished by squadron and work center. **(T-1).**

5.2.5.3.5.5.3.1. Audit the report by JCN/WCE (WES for G081) to verify the corrective action narratives match the action taken codes used and the WUC utilized most accurately identifies the affected system. **(T-1).**

5.2.5.3.5.5.3.2. Identify suspected errors on the report by circling or marking on the report and give report to appropriate squadron for corrections. **(T-1).**

5.2.5.3.5.5.3.3. Identify and count the documentation errors. **(T-1).**

5.2.5.3.5.5.3.4. Use of automated processes is authorized.

5.2.5.3.5.5.3.5. **(Added-AFMC)** Do not limit scope of DIT to JDD. **(T-2).**

5.2.5.3.5.5.3.6. **(Added-AFMC)** Provide feedback to users via users' meetings, periodic memorandums, letters, etc. **(T-2).**

5.2.5.3.5.5.3.7. **(Added-AFMC)** When the operational requirements are not achieved, MMA will perform an investigation to determine the cause. **(T-2)** As a minimum the following areas will be considered:

5.2.5.3.5.5.3.7.1. **(Added-AFMC)** Are operational requirements realistically based on availability of equipment? **(T-2).**

5.2.5.3.5.5.3.7.2. **(Added-AFMC)** What are the causes for flying schedule deviations (cancellations, aborts, additions or early/ late takeoffs)? **(T-2).**

5.2.5.3.5.5.3.7.3. **(Added-AFMC)** Are specific aircraft, equipment, systems, or subsystems contributing to a disproportionate share of deviations/turbulence? **(T-2).**

5.2.5.3.5.5.3.7.4. **(Added-AFMC)** Is specific equipment failing to perform as scheduled? Does this equipment require more or less maintenance than others? **(T-2).**

5.2.5.3.5.5.3.7.5. **(Added-AFMC)** Are there enough people to meet mission needs? Are certain work centers documenting significant overtime or show consistently high utilization rates? **(T-2).**

5.2.5.3.5.5.3.7.6. **(Added-AFMC)** Is there a good balance of skills within AFSCs and between the units? **(T-2).**

5.2.5.3.5.5.3.7.7. **(Added-AFMC)** Do higher rates for repeat/recur discrepancies indicate training/experience shortfalls? **(T-2).**

5.2.5.3.5.5.3.7.8. **(Added-AFMC)** Is there sufficient time to schedule and work maintenance problems? **(T-2).**

5.2.5.3.5.5.3.7.9. **(Added-AFMC)** Are trends significant? Are the trends short term (6 months or less) or long term? Where will the unit likely be in 6-12 months? **(T-2).**

5.2.5.3.5.5.3.7.10. **(Added-AFMC)** Are there seasonal or cyclical variations? Are current variations outliers? **(T-2).**

5.2.5.4. Production Analysis. The Production Analysis function calculates maintenance metrics and compares unit performance against MAJCOM, local and MMA standards. In addition, they provide monthly airframe, facility and personnel capabilities (as required), attrition, and spare factors for use in planning the annual FHP.

5.2.5.4.1. **(Added-AFMC)** Deficiency Analysis. Deficiency analysts will be a 5- or 7- level equivalent and should have at least 6 months experience on the weapon system. Other skills may be included to effectively analyze specific functions of an aircraft weapon system. They use analytical data and their technical knowledge to identify problems, work with the customer, and help find solutions. They should not limit themselves to pointing out general areas for investigation; they should identify deficiencies applicable to a work center, particular equipment end item, maintenance practice or management action. **(T-2)** Deficiency analysts will:

5.2.5.4.1.1. **(Added-AFMC)** Review QA summaries for positive and negative trends. **(T-2).**

5.2.5.4.1.2. **(Added-AFMC)** Review debriefing data and abort information daily to assist in the identification of problem aircraft or systems. **(T-2).**

5.2.5.4.1.3. **(Added-AFMC)** As a minimum, perform monthly reviews of:

5.2.5.4.1.3.1. **(Added-AFMC)** DD lists for technical errors or negative trends. **(T-2).**

5.2.5.4.1.4. **(Added-AFMC)** Repeat/recur discrepancy lists for problems. **(T-2).**

5.2.5.4.1.5. **(Added-AFMC)** High CND rates and incidents for inadequate troubleshooting or technical data problems. **(T-2).**

5.2.5.4.1.6. **(Added-AFMC)** Aircraft scheduling deviations for negative maintenance practices and trends that impact work force and workload stability. **(T-2).**

5.2.5.4.1.7. **(Added-AFMC)** Monitor and evaluate the maintenance portion of the base repair program and Repair Network Enhancement Program **(**RNEP). **(T-2).**

5.2.5.4.1.8. **(Added-AFMC)** Analyze the performance of selected systems, subsystems, and components to help determine the source of problems affecting the mission of the unit. **(T-2).**

5.2.5.4.1.9. **(Added-AFMC)** Attend QA and Product Improvement Working Group (PIWG) meetings and provide trend data as needed. **(T-2).**

5.2.5.4.1.10. **(Added-AFMC)** Not be utilized as a full time DIT monitor. **(T-2).**

5.2.5.4.1.11. **(Added-AFMC)** Consider the following questions when reviewing negative trends:

5.2.5.4.1.11.1. **(Added-AFMC)** Which systems are creating a high NMC rate? Are these the normally high systems? If so, are they higher than normal? What are the high driving components, and what is being done (or could be done) to address the problems? What factors are causing an increase or decrease in the NMC hours? Are the unit's deployments affecting the rate, if so to what extent? **(T-2).**

5.2.5.4.1.11.2. **(Added-AFMC)** Are specific aircraft or equipment causing trend distortions? **(T-2).**

5.2.5.4.1.11.3. **(Added-AFMC)** What systems have high CND, repeat or recur malfunctions? **(T-2).**

5.2.5.4.1.11.4. **(Added-AFMC)** What parts or components cause NMCS conditions? Are these normal, or is a new problem emerging? **(T-2).**

5.2.5.4.1.11.5. **(Added-AFMC)** Are the items repaired on station? Are they 2LM components? Could they be repaired locally? **(T-2).**

5.2.5.4.1.11.6. **(Added-AFMC)** Is supply support sufficient and responsive? If not, why not? Are stocks adequate? **(T-2).**

5.2.5.4.1.11.7. **(Added-AFMC)** Is the lack of training, technical data, or tools and equipment affecting certain systems or AFSCs? **(T-2).**

5.2.5.4.1.11.8. **(Added-AFMC)** Has the Air Force Global Logistics Support Center (AFGLSC) been contacted? **(T-2).**

5.2.5.4.2. **(Added-AFMC)** Analytical Process. The analytical process consists of identifying contributory factors, manipulating raw data into meaningful formats, computing management indicators, performing statistical measurements, and creating accurate, complete, and easy to understand presentations. **(T-2).**

5.2.5.4.3. **(Added-AFMC)** Management Contributions to the Analytical Process. Maintenance managers have a significant impact on the usefulness of the MMA to the unit. Managers should constantly review how information is being organized and presented. **(T-2).**

5.2.5.4.4. **(Added-AFMC)** Analytical Studies. MMA will provide results of investigations, analyses, or studies to work centers. The most effective study is one that goes beyond superficial conclusions. It helps solve a problem relative to mission performance. Specific studies are provided to the requester, and a file copy is retained for future reference. Disseminate the study by electronic means or include it in a monthly maintenance summary. The study should state assumptions up front, and should be summarized to state how the significance is measured. **(T-2).**

5.2.5.4.5. **(Added-AFMC)** Maintenance Analysis Referrals. A referral is a procedure used to identify, investigate, and propose corrective action for management problems. These are highly effective tools to make agencies aware of common problems. **(T-2).**

5.2.5.4.6. **(Added-AFMC)** Dedicated AMU Analysis (where applicable). The AMU analysis function is intended to provide dedicated analytical support for the AMU. The MMA section NCOIC may dedicate an analyst to each AMU. The dedicated AMU analyst works for the MMA section NCOIC. Accomplishing AMU tasks are the dedicated analyst's primary responsibility. The MMA section NCOIC is responsible for the overall effectiveness of the AMU analysis program. As a minimum, the AMU analyst will:

5.2.5.4.6.1. **(Added-AFMC)** Review maintenance debriefing data to track in-flight discrepancies and deviations on each aircraft. Review aircraft status inputs from the MOC for WUC accuracy. Closely monitor fix time on Code 3 discrepancies and report results to AMU supervision daily. Brief problem aircraft and systems to AMU supervision daily. **(T-2).**

5.2.5.4.6.2. **(Added-AFMC)** Brief comparative AMU data weekly and monthly as required by the MXG/CC. **(T-2).**

5.2.5.4.6.3. **(Added-AFMC)** Validate CANN documentation in IMDS-CDB at least weekly, with AMU supply and inform AMU supervision of its accuracy. If errors exist, a more frequent validation may be required. Advise AMU supervision of recurring problems. **(T-2).**

5.2.5.4.6.4. **(Added-AFMC)** Monitor the UTE rate for the AMU. **(T-2).**

5.2.5.4.6.5. **(Added-AFMC)** Analyze programmed and actual attrition factors. **(T-2).**

5.2.5.4.6.6. **(Added-AFMC)** Attend AMU scheduling/production meetings at least once per week. **(T-2).**

5.2.5.4.6.7. **(Added-AFMC)** Present Maintenance Analysis. Present data by using summaries, charts, graphs, tabular displays, and narratives. These data presentations should show the relationships among various factors. Data presentations should be displayed or presented in time to be useful in plans or reports. A printed monthly maintenance summary, tailored to the needs of the unit, is an excellent method of presenting data. **(T-2).**

5.3. Maintenance Training (MT). MT consists of the Training Management Element and the Development and Instructor Element. Maintenance Training assists SQ/CCs by providing Unit Training Managers (UTM) to manage the enlisted specialty training program. MT will:

5.3.1. Provide initial, recurring and advanced proficiency, qualification, or certification training needed by a technician to perform duties in their primary AFSC and manage course codes to track training IAW AFI 36-2650 and AFI 36-2201. **(T-1).**

5.3.2. Serve as the single point of contact for all training matters affecting maintenance. **(T-1).**

5.3.3. The MT Chief will maintain administrative responsibility for UTMs whether UTMs are centralized or decentralized. **(T-1).**

5.4. Programs and Resources (P&R). P&R manages the manning, facilities, support agreements, and deployment functions for the MXG. P&R will:

5.4. (AFMC)Programs and Resources (P&R) (MXOP) Developmental testing is conducted throughout the acquisition and sustainment processes to assist engineering design and development, and verify that critical technical parameters have been achieved. Developmental Test & Evaluation (DT&E) supports the development and demonstration of new materiel solutions or operational capabilities as early as possible in the acquisition life cycle. After full-rate production or fielding, DT&E supports the sustainment and modernization of systems. To support integrated testing, as many test activities as practical are conducted in operationally relevant environments without compromising engineering integrity, safety, or security. Developmental testing leads to and supports a certification that the system is ready for dedicated operational testing IAW DoDI 5000.02, Enclosure 6, and AFMAN 63-119, *Certification of System Readiness for Dedicated Operational Testing*. P&R will:

5.4.1. Develop, maintain, and coordinate all applicable AFI-directed programs and plans affecting maintenance. **(T-1).**

5.4.1.1. **(Added-AFMC)** Coordinate with the Maintenance Group (MXG)/Squadron SUPTs to manage Test and Evaluation (T&E) resource requirements for MXG.

5.4.1.2. **(Added-AFMC)** MXOPL Logistics Programs.

5.4.1.2.1. **(Added-AFMC)** Programs. The Life Cycle Logistics Management Specialist (LCLMS) support DT&E, and Operational Test and Evaluation (OT&E) activities IAW DoDI 5000.02 and DoDD 5000.01. Provide continued emphasis and awareness by early involvement in DT&E and OT&E activities. The Life Cycle Logistics (LCL) will establish standards and procedures for accomplishment of DT&E and OT&E logistics functions. Ensure compliance with statutory directives; Air Force environmental management, safety, security instructions; and TOs. Develop and provide training and tools to improve the DT&E and OT&E process

within the Acquisition Community. Will assist in development of logistics support test plans, data analysis plans, and technical reports. The LCL will assist local management in test execution during DT&E and OT&E program involvement as defined IAW AFI 99-103. The LCLMS is the Logistics Subject Matter Expert (SME) and focal point for Engineering and Program Management personnel during all DT&E and OT&E activities. They will plan, direct, and manage the development and acquisition of logistics support plans for System Program Offices at the Group level. The process of Integrated Product Support (IPS) Elements for testing, evaluating and, supporting a weapon system from cradle to grave is defined in the Defense Acquisition Guidebook. LCLMS' will determine whether logistics support and system readiness objectives are met. LCLMS' apply the use of the 12 IPS Elements (AFI 63-101/20-101) during DT&E, OT&E and Sustainment. Programs conduct DT&E throughout the systems life cycle, from program initiation through system sustainment, to reduce design and programmatic risks and provide assessments. DT&E can occur as either contractor testing, government testing or a mix of both.

5.4.1.2.2. **(Added-AFMC)** LCLMSs provide complete, logistics planning and support to a broad system, program, or functional area of assignment.

5.4.1.2.2.1. **(Added-AFMC)** Lead logistics planning efforts and secure support for ground and/or flight testing of a broad system, program or functional area through the efforts of self and other team members.

5.4.1.2.2.2. **(Added-AFMC)** Direct and coordinate the efforts of Test Wing (TW), MXG managers and other team members in developing capability estimates and logistics support planning for assigned area of responsibility.

5.4.1.2.2.3. **(Added-AFMC)** Lead and balance test requirements for the various programs within the assigned area against existing or available support capabilities and capacities.

5.4.1.2.2.4. **(Added-AFMC)** Prepare and present maintenance briefing material to inform and advise the MXG staff, visitors and higher authorities on logistics support capabilities and status of programs and projects.

5.4.1.2.2.5. **(Added-AFMC)** Develop cross-coordination staffing and the preparation of correspondence for the MXG on matters involving multiple maintenance functional elements; plans for modernization; develop and submit budgetary estimates through resource or manpower managers.

5.4.1.2.3. **(Added-AFMC)** Represent the MXG at initial test and evaluation planning meetings, in development of test and evaluation master plans, program management plans, program test plans, program introduction (PI) documents, integrated logistics support plans, and logistics support plans.

5.4.1.2.3.1. **(Added-AFMC)** Perform Program Analyst and Project Manager duties for programs unique to the maintenance complex; such as maintenance back shop and jet engine development or sustainment work.

5.4.1.2.3.2. **(Added-AFMC)** Manage collaboration and attain assistance from qualified specialists or SMEs to develop and implement logistics plans for a

variety of projects.

5.4.1.2.3.3. **(Added-AFMC)** Organize and delegate work within the team, provide guidance and training to assigned specialists, reviews work, and provides input to performance evaluations.

5.4.1.2.4. **(Added-AFMC)** Develop and implement plans for logistics support of the TW mission.

5.4.1.2.4.1. **(Added-AFMC)** Review planning documents for assigned area and develop detailed support plans including estimates of manpower requirements by skill, career field and special training requirements; funding requirements; facility management and formulation or review of plans and specifications for facilities modification or for new facility requirements.

5.4.1.2.4.2. **(Added-AFMC)** Prepares and reviews services and support agreements between the AFTC, TW, MXG, contractors, NASA, Air Force, and other DOD agencies.

5.4.1.2.4.3. **(Added-AFMC)** Review and participate in negotiation of host-tenant and interagency support agreements.

5.4.1.2.4.4. **(Added-AFMC)** Perform functional area chief duties for MXG service contracts, including the development of statements of work, performance work statements, and other contractual documents; serve as liaison with the AFTC Contracting Office.

5.4.1.2.4.5. **(Added-AFMC)** Perform a variety of special assignments to include conducting special one-time and feasibility studies to determine support capability, assess new requirements and develop more effective ways to do business.

5.4.1.2.5. **(Added-AFMC)** Manage equipment, support equipment and, material requirements to support assigned programs.

5.4.1.2.5.1. **(Added-AFMC)** Manage deployment of MXG resources (aircraft, manpower, equipment, spare parts, etc.) to meet test requirements or war/contingency taskings; loan of government property as Government Furnished Equipment, transportation plans, OPSEC/COMSEC plans, reception of other forces deploying to Edwards AFB to meet test requirements or war/contingency taskings. Conduct studies and analysis in support of bed down activities for new test programs and manage commitment of logistics resources for support of assigned programs/projects and logistics test plans.

5.4.1.2.5.2. **(Added-AFMC)** Manage acquisition logistics support for production weapons systems and for systems in pre-production phases by conducting continual follow-up on changes in test schedules, acquisition of materials and support equipment, availability of funds, status of maintenance manpower, training, and support capabilities, adjusts logistics resources as required to ensure test milestones can be achieved.

5.4.1.2.5.3. **(Added-AFMC)** Formulate innovative solutions to diverse logistics problems encountered with unique test assets.

5.4.1.3. **(Added-AFMC)** MXOPO Organizational Design and Improvement.

5.4.1.3.1. **(Added-AFMC)** Develop workforce resource requirement inputs for T&E activities associated with assigned MXG Research, Development, Test and Evaluation programs IAW AFI 38-101, AFI 38-201, AFI 38-204, AFI 99-103, AFI 99-109, DoDD 3200.11, DoDD 5000.1, DoDD 7000.14R, DoDD 5010.42, and DoDI 5010.43.

5.4.1.3.1.1. **(Added-AFMC)** Serve as the MXG and its sub-organizations' focal point for MXG manpower requirements determination for planning and resourcing current, future or potential T&E programs. Perform studies to assess requirements, disconnects, offsets, initiatives, workload and/or adjustments related to military, civilian, or overhire authorizations. Develop decision level data using appropriate resourcing tools, past practices, standards or functional or SME technical estimates. Develops project inputs for statement of capabilities (SOC), Program Objective Memorandum (POM), manpower estimate report, briefs or strawman Unit Manning Document (UMD) to support T&E requirement programing and coordinate efforts with external organizations.

5.4.1.3.1.2. **(Added-AFMC)** Serve as the MXG and its subordinate units' action officer for organization change requests (OCR). Provide recommendations to meet capability and capacity requirements based on current and/or future mission objectives. Develop, manage, and coordinate supporting document with external organizations, and track progression IAW AFI 38-101 and AFI 38-201.

5.4.1.3.1.3. **(Added-AFMC)** Develop decision level data for organizational or process solutions to resolve complex T&E mission capacity and capability issues. Support strategic planning with alternate course of actions (COA), and/or recommendations on maintenance capabilities and resources needed to meet T&E mission requirements effectively and efficiently.

5.4.1.3.1.4. **(Added-AFMC)** Develop management tools as required to aid leadership in making data driven decisions related to mission, resource priorities, and strategic action plans. Tools include support for, but not limited to data gathering, metrics reporting, requirements forecasting, LT&E data management, resource availability, and Major Graded Area focus areas IAW AFI 99-103, AFI 1-2 and AFI 90-201.

5.4.1.3.2. **(Added-AFMC)** Serve as the MXG commander's focal point for AF CPI to provide visible leadership and promote AF CPI culture of innovation and teamwork. Trained and or certified Green Belt (GB) and Black Belt (BB) practitioners will provide employment of AF CPI methodologies to fulfill AFI 1-2: Commander's Responsibilities and AFI 90-201: The Air Force Inspection System requirements to correct unit deficiencies using root cause analysis IAW AFI 38 Series.

5.4.1.3.2.1. **(Added-AFMC)** GB and BB practitioner will use AF CPI policy guidance, related efficiency methodologies, processes, procedures, tools, and training curriculums to implement and manage CPI throughout the MXG and its sub-organizations.

5.4.1.3.2.2. **(Added-AFMC)** Establish AF CPI program governance via the MXG Corporate Board and implement strategic alignment across the MXG. Develop mission, vision, goals, objectives, and action items and track progression toward meeting goals.

5.4.2. Act as the resource advisor to the MXG/CC. **(T-1).**

5.4.2. **(AFMC)** [DEV] Within the 412 TW, 412 MXG/CC is not required to appoint a Programs and Resource Advisor. This responsibility will be managed by personnel assigned to the 412 TW.

5.4.3. Coordinate with the MXG/Squadron SUPTs to manage manpower authorizations for the MXG. **(T-1).**

5.4.3. **(AFMC)** MXOPM Manpower.

5.4.3.1. **(Added-AFMC)** Act as the MXG and sub organization Commander's and supervisor's manpower adviser for personnel staffing actions, strategic human capital planning, workforce management programs, policies, accountability, reporting requirements, and issue resolution.

5.4.3.2. **(Added-AFMC)** Assist commanders and/or supervisors in management of their civilian and military manpower authorizations to support T&E manpower requirements identified in AFI 99-103, AFI 99-109, Program SOCs, and DoDD 3200.11 IAW AFI 38-201, AFPD 36-5, and AFPD 36-14.

5.4.3.3. **(Added-AFMC)** Manage position control numbers and request for personal actions (RPA) staffing actions from "cradle to grave" in support of T&E. Validate requester data and request required information when documentation is incomplete. Coordinate with wing, Center and AFPC agencies as necessary to ensure effective actions. Manage RPA fill action hiring certifications issues and close out actions. Provide periodic status updates.

5.4.3.4. **(Added-AFMC)** Develop COAs to resolve complex management issues and applies critical thinking to resolve organizational staffing challenges.

5.4.3.5. **(Added-AFMC)** Provide reporting metrics, periodic reports, and tools as directed by MXG leadership to assist in the determination of organizational priorities in the areas of training, staffing, recruitment, and workforce shortfalls and/or surpluses to enable data-driven decisions.

5.4.3.6. **(Added-AFMC)** Develop and manage metrics and reports to higher echelons as requested. Metrics include, but are not limited to; data calls, taskers, and/or guidance from higher headquarters, manpower and occupational demographics, staffing levels, activities necessary to manage POM plus up or reduction actions, reasonable accommodations, medical retirements, training, classifications, capacity, and capability etc. Chair periodic meetings as required. Meetings will include leadership and other personnel necessary to review metrics, address and correct staffing concerns and establish staffing priorities.

5.4.3.7. **(Added-AFMC)** Ensure authorized and assigned personnel are adequate to support the unit mission and tasking plans. Coordinate with wing or Air Logistics Center

manpower office representatives for assistance in preparing requests to MAJCOM for UMD adjustments.

5.4.3.8. **(Added-AFMC)** Maintain current Unit Personnel Manpower Roster. Work with MXG Chief Enlisted Advisor and unit superintendents to allocate projected gains appropriate billets. Maintain record of approved actions and verify that personnel data subsystems are updated.

5.4.3.9. **(Added-AFMC)** Distribute projected gain/loss lists and maintenance manpower requests to appropriate work centers and establish suspense for updates. Ensure approved actions have been received for update and submit consolidated updates to the appropriate program or system.

5.4.3.10. **(Added-AFMC)** Develop inputs for mass realignment request. Provide research, and validation of UMD. Request Table 30 updates when new Office Symbol Code and/or Personnel Accounting Symbol code is received. Build and submit spreadsheet for mass realignment to AFPC.

5.4.3.11. **(Added-AFMC)** Focal point for T&E reimbursable workforce requirements. Review SOCs for MAJCOM, Special Program Office and/or higher echelon directed workload. Forwards inputs to TW Manpower, Financial Management, and Civilian Employment Cost Management Committee for TW review, validation, coordination, and approval. Monitor overhires and notify units of pending expiration and coordinates revalidation of SOC requirements and funding availability as required. Advises management of available options and coordinates with AFPC to ensure RPA action submitted to extend and/or convert appointment.

5.4.4. Serve as the focal point within the MXG for management of facilities. **(T-1).**

5.4.4. **(AFMC)** MXOL – Logistics Site Support.

5.4.4.1. **(Added-AFMC)** Serve as MXG/CC facility advisor for management of T&E facility support to include renovations and major facility modifications IAW AFI 32-1001.

5.4.4.1.1. **(Added-AFMC)** Assign Site Support Specialist as necessary to support these functions.

5.4.4.1.1.1. **(Added-AFMC)** Manage planned addition, revision, or alteration to any facilities specialized utility system - such systems are facility access control security systems, complex mission critical computer room cooling systems non-real property installed equipment (NRPIE), specialized aircraft electrical systems NRPIE, specialized aircraft specific cooling and activation systems i.e. polyalphaolefin (PAO), avionics, and hydraulics unique NRPIE test support systems.

5.4.4.1.1.2. **(Added-AFMC)** Develop and coordinate commercial contracts IAW AFI 64-102.

5.4.4.1.1.3. **(Added-AFMC)** Focal point for functional, technical, and Contract Officer Representative matters pertaining to performance-based activities IAW DoDI 5000.72.

5.4.4.1.1.4. **(Added-AFMC)** Prepare project statements of work, manage contract budget, and service contracts - such as custodial, trash removal, shop towel, coverall, and industrial gases., cable TV, NRPIE camera systems, elevator services, and NRPIE maintenance and any facility-related awarded unfunded requirements IAW AFI 64-102.

5.4.4.1.1.5. **(Added-AFMC)** Develop and manage program specific Letters of Technical Direction (LOTD) in support of mission critical NRPIE such as access control, computer room air conditioning, and aircraft unique hangar aircraft support equipment.

5.4.4.1.1.6. **(Added-AFMC)** Manage preparation of real-time program requirement Rough-Order-Magnitude (ROM) cost estimates and initial government estimates (IGE) for modification or renovation of logistics and T&E facilities for support of current and future test requirements IAW UFC 3-740-05.

5.4.4.1.1.7. **(Added-AFMC)** Responsible for the installation, inspection, and maintenance of aircraft Sun Shades IAW AFI-21-136.

5.4.4.1.1.8. **(Added-AFMC)** Perform building inspection, maintenance, and repair on real property (RP), and NRPIE (AED, fire, safety, security, etc.).

5.4.4.1.1.9. **(Added-AFMC)** Develop and prioritize maintenance facility work orders.

5.4.4.1.1.10. **(Added-AFMC)** Ensure identified deficiencies and corrective actions are completed. Activities include but are not limited to repair, modification, and facility maintenance.

5.4.4.1.1.11. **(Added-AFMC)** Develop MXG Emergency Management and Continuity of Operations Plan and coordinate training and exercise requirements across the MXG.

5.4.4.1.1.12. **(Added-AFMC)** Perform facility drills to include fire drills and man down exercises.

5.4.4.2. **(Added-AFMC)** Act as the facility resource planning advisor to the MXG/CC IAW AFI 32-7062.

5.4.4.2.1. **(Added-AFMC)** Develop and manage 10-year facility plan specifying maintenance, upgrade, and replacement projections for T&E logistics facilities, and coordinate plan with Civil Engineer (CE).

5.4.4.2.2. **(Added-AFMC)** Develop TW long range requirements for base site plan.

5.4.4.2.3. **(Added-AFMC)** Provide plan updates; review, and coordinate with CE annually.

5.4.4.2.4. **(Added-AFMC)** Develop and conduct comprehensive plans and studies to prevent and correct problems and ensure TW capacity for current and future test programs.

5.4.4.2.5. **(Added-AFMC)** Manage preparation of long term and potential program requirement Rough-Order-Magnitude (ROM) cost estimates and IGE for modification

or renovation of logistics and T&E facilities for support of current and future test requirements IAW UFC 3-740-05.

5.4.4.2.6. **(Added-AFMC)** Develop and manage space planning and allocation database for test program support.

5.4.4.2.7. **(Added-AFMC)** Focal point for Military Construction Projects to support TW activities.

5.4.4.2.8. **(Added-AFMC)** Process T&E program resource allocation requests through TW functional areas.

5.4.4.2.9. **(Added-AFMC)** Provide management input to the facility board working group to ensure proper prioritization of logistics resource allocation.

5.4.4.2.10. **(Added-AFMC)** Develop and manage TW logistics facility integrated project list with CE.

5.4.4.2.11. **(Added-AFMC)** Manage MXG energy conservation plan.

5.4.4.3. **(Added-AFMC)** Partner with appropriate agencies to procure services and resources for maintenance, repairs, and modifications of facilities supporting logistics and T&E programs.

5.4.4.3.1. **(Added-AFMC)** Schedule and chair facility construction and upgrade project meetings for T&E programs.

5.4.4.3.2. **(Added-AFMC)** Develop and manage facility design and prepare cost estimates for T&E programs.

5.4.4.3.3. **(Added-AFMC)** Maintain the TW T&E programs space activity database.

5.4.4.3.4. **(Added-AFMC)** Manage project meetings for new construction and modification of existing facilities per program requirements.

5.4.4.3.5. **(Added-AFMC)** Plan, program, budget, and monitor projects IAW the Planning Programming Budgeting and Execution process for MAJCOM T&E resources.

5.4.4.3.6. **(Added-AFMC)** Plan T&E resource investment and modernization efforts for test program support.

5.4.4.4. **(Added-AFMC)** Assist with coordination of site surveys for deployment locations and maintain copies of the Expeditionary Site Plan Part I for deployment locations IAW AFI 10-404, Base Support and Expeditionary Site Planning.

5.4.4.4.1. **(Added-AFMC)** Focal point for MXG and Operations Group (OG) Combined Test Force (CTF) site planning.

5.4.4.4.2. **(Added-AFMC)** Provide Test Program Support IAW AFI 99-103.

5.4.4.4.3. **(Added-AFMC)** Review program introduction and test concept documents for test program needs and provide program support.

5.4.4.4.4. **(Added-AFMC)** Prepare Cost and Resource Estimates. Assess MXG capacity and capability to support including identification of constraints and concerns.

5.4.4.4.5. **(Added-AFMC)** Focal point for MXG final SOC inputs for test program support.

5.4.4.4.6. **(Added-AFMC)** Manage infrastructure for T&E facilities and resources for system life cycle activities.

5.4.5. Serve as the focal point for MXG deployment planning and execution actions. **(T-1).** If designated as a UTC pilot unit IAW AFI 10-401. P&R will:

5.4.5.1. Coordinate with other UTC tasked units on cargo and equipment authorizations/requirements to develop and maintain a standardized package to meet specific mission capability requirements. **(T-1).**

5.4.5.2. Coordinate with the unit equipment custodian(s) to review equipment changes and new equipment requirements driven by changes to UTCs and/or Allowance Standards (AS). **(T-1).**

5.4.5.3. Assist with coordination of site surveys for deployment locations and maintain copies of the Expeditionary Site Plan (ESP) Part I for deployment locations IAW AFI 10-404, *Base Support and Expeditionary (BAS&E) Site Planning*. **(T-1).**

5.4.6. Oversee local, functional or host country unique support agreements applicable to the MXG IAW AFI 25-201, *Intra-Service, Intra-Agency, and Inter-Agency Support Agreements Procedures*. **(T-1).**

5.4.7. Develop and coordinate MXG commercial contracts as directed by the MXG/CC. **(T-1).**

5.4.8. Manage readiness reporting for the MXG IAW AFI 10-252, *Defense Readiness Reporting System*. **(T-1).**

5.4.9. Coordinate with LRS Deployment & Distribution Flight to obtain unit assistance in interpreting guidance for marking/packing/marshaling of tasked equipment IAW AFMAN 24-404IP, *Preparing Hazardous Materials for Military Air Shipments*; AFI 10-401 and AFMAN 91-201. **(T-1).**

Chapter 6

QUALITY ASSURANCE (QA)

6.1. 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. Personnel assigned to QA are not an extension of the work force and shall not be tasked to perform sortie production inspections (e.g., sign off "Red Xs" and perform IPIs). **(T-1).** QA serves as the primary technical advisory agency in the maintenance organization, assisting maintenance supervision at all levels to identify, validate and/or resolve workmanship, proficiency and/or compliance issues impacting mission generation. The evaluation and analysis of deficiencies and problem areas identified are key functions of QA that highlight and reveal underlying causes of poor quality in the maintenance production effort. Aircraft and equipment condition and personnel proficiency are validated through the MSEP and shall be recorded using a MAJCOM-approved QA database. **(T-1).** Civil service and contracted personnel to include MEO/HPO organizations are to follow requirements established in their respective civilian position description/contract and accepted quality assessment system.

6.2. Responsibilities. QA is responsible to the MXG/CC or equivalent to perform as the primary technical advisory agency for maintenance actions and to assist work center supervisors in reviewing tasks involved in supporting the maintenance effort. MXG QA Inspectors have the authority to observe, correct and document applicable maintenance activities performed within the MXG. QA will:

6.2.1. Implement and administer the MSEP and other programs as applicable to include:

6.2.1.1. Product Improvement Program (PIP). **(T-1).**

6.2.1.1.1. Deficiency Reporting (DR). **(T-1).**

6.2.1.1.2. Product improvement inputs. **(T-1).**

6.2.1.1.3. R&M inputs. **(T-1).**

6.2.1.2. Aircraft and equipment impoundment procedures IAW **Chapter 7** of this instruction. **(T-1).**

6.2.1.3. Functional Check Flight (FCF) program IAW this chapter. **(T-1).**

6.2.1.4. W&B Program IAW this chapter. **(T-1).**

6.2.1.5. Hot Refuel/Defuel and Aircraft-to-Aircraft Refuel Programs. **(T-1).**

6.2.1.6. **(Added-AFMC)** The AF Repair Enhancement Program (AFREP) IAW AFI 21-123 as required. (T-2).

6.2.1.6.1. **(Added-AFMC)** Wing/Group AFREP manager will be a SNCO or civilian equivalent who has an extensive maintenance background. The AFREP manager is the central focal point for all AFREP initiatives; including circuit card repair (CCR). **(T-2).**

6.2.2. Review and analyze aircraft aborts, IFEs, and incidents involving damage to equipment or injury of personnel to determine if trend analysis, cross-tell or MSEP focus is warranted. **(T-1).**

6.2.3. Comply with the configuration management program requirements IAW **Chapter 15** of this instruction. **(T-1).**

6.2.4. In coordination with PS&D, comply with TCTO Program requirements IAW **Chapter 15** of this instruction, TO 00-5-1 and TO 00-5-15. **(T-1).**

6.2.5. In conjunction with MMA, develop a local Job Standard (JST)/work package for both gaining and losing aircraft and equipment transfer inspection IAW **Chapter 15** of this instruction. **(T-1).**

6.2.6. Coordinate with AVDO and MMA on all AFTO Form 103s. **(T-1).**

6.2.7. Manage OTIs. **(T-1).**

6.2.8. Augment evaluations at the request of the WS. **(T-1).** Flightline weapons loading inspections/evaluations are the responsibility of WS evaluators.

6.2.9. Evaluate unit maintenance management procedures, including locally developed forms, publications, OIs, checklists etc., for accuracy, intent, and necessity as referenced in this AFI. **(T-1).**

6.3. QA Superintendent Responsibilities. In addition to the applicable Flight CC/Chief duties in **Chapter 2** of this instruction the QA SUPT will:

6.3.1. Develop and maintain a master training plan to train all QA Inspectors, and include augmentees, if applicable. **(T-1).**

6.3.2. Develop and monitor the MSEP using a MAJCOM-approved QA database and provide supervisors access to MSEP data. **(T-1).**

6.3.3. Notify the appropriate agencies when deficiencies are found in (AF, MAJCOM/Lead Command, WG, GP) instructions. **(T-1).**

6.3.4. Review maintenance-related instructions, supplements, operating instructions, forms and local/functional checklists every two years or when source data changes, for accuracy, intent and necessity. **(T-1).**

6.3.4.1. The QA SUPT will document the review once complete. **(T-1).**

6.3.5. Review profile JSTs annually or when source data changes for accuracy, intent and necessity. **(T-1).**

6.3.5.1. The QA SUPT will document the review once complete. **(T-1).**

6.3.6. Ensure management and special inspections are performed. **(T-1).**

6.3.7. Ensure the GP portion of the FOD Prevention Program is conducted IAW **Chapter 11** of this instruction. **(T-1).**

6.3.8. Oversee and implement the GP Impoundment Procedures IAW **Chapter 7** of this instruction. **(T-1).**

6.3.9. Coordinate on all requests for locally manufactured, developed, and modified tools and equipment, and maintain records for approved requests. **(T-1).**

6.3.9.1. This includes pictures or drawings and a description of the use for each item.

6.3.9.1.1. If a TO contains the option for these tools or equipment, QA does not need to coordinate or maintain the records on that tool as long as the tool remains approved by the TO.

6.3.9.1.2. Locally manufactured, developed or modified equipment for weapons loading, maintenance and the armament systems flight must be coordinated through the WWM before routing to QA. **(T-1).**

6.3.10. Verify IPI requirements from MAJCOM and sources outlined in TO 00-20-1 and publish combined MXG IPI listing every 2 years as a minimum or when source data changes. **(T-1).**

6.3.11. Develop KTL/RIL to supplement MAJCOM listings in conjunction with the Operations Officer/MX SUPT (if required). **(T-1).**

6.3.11.1. Provide copies of approved KTL/RIL to all affected organizations. **(T-1).**

6.3.12. Ensure Acceptable Quality Level (AQL) Standards are developed for all tasks including key tasks and routine inspections not included on the MAJCOM AQL. **(T-1).**

6.3.13. Ensure agendas and presentations are compiled for the MSEP summary. **(T-1).**

6.3.14. Review wing RFAs IAW **Chapter 1** and **Chapter 15** of this instruction. **(T-1).**

6.3.15. Designate a Chief Inspector. **(T-1). Note:** ARC may elect to appoint a Chief Inspector or distribute these responsibilities to individual inspectors as appropriate.

6.3.16. Designate individuals to be the Technical Order Distribution Office (TODO) and Product Improvement Manager (PIM). **(T-1).**

6.3.17. Designate individuals to be the W&B and FCF Program managers. **(T-1).**

6.3.18. Monitor the ASIP IAW **Chapter 11** of this instruction. **(T-1).**

6.3.19. Maintain DOP program oversight IAW **Chapter 11** of this instruction. **(T-1).**

6.3.20. When hot refueling is performed by maintenance personnel, ensure Hot Refueling Program is accomplished IAW TO 00-25-172 and MAJCOM supplements. **(T-1).**

6.3.21. **(Added-AFMC)** Establish procedures to support Red Ball maintenance in conjunction with MXG/CC, MOC, AMXS, MXS (EMS and CMS) and Supply in the local supplement. **(T-2).**

6.3.22. **(Added-AFMC)** As the selecting/hiring official for QA inspectors, ensure the individual is a qualified subject matter expert (SME) in the functional area (i.e., avionics, AGE, aircraft maintenance, fabrication, munitions, etc.) and meets position requirements. **(T-2).**

6.4. Chief Inspector Responsibilities. The Chief Inspector is responsible to the QA SUPT for ensuring functions listed below are performed and is responsible for applicable Section NCOIC/Chief duties in **Chapter 2** of this instruction. The Chief Inspector will:

6.4.1. Use assigned inspectors to provide on-the-spot assistance to correct problems. **(T-1).**

6.4.2. Spot-check TOs, inspection work cards, checklists, job guides and WUC manuals during evaluations and inspections for currency and serviceability. **(T-1).**

6.4.3. Assist MMA with investigations and studies. **(T-1).**

6.4.4. Review QA database and MSEP inspection summary inputs for accuracy and content. **(T-1).**

6.4.5. Initiate actions when additional attention is required to resolve adverse maintenance trends or training problems. **(T-1).**

6.4.5.1. Actions include preparing cross-tell information bulletins and messages for GP/CC release to other similarly-equipped units and higher headquarters.

6.4.6. Review and compile inputs for updating the IPI listing. **(T-1).**

6.4.6.1. Maintain a copy of the MXG/CC or equivalent approved IPI listing with the signature and date of review/certification. **(T-1).**

6.4.7. Review Category II major discrepancies for trends quarterly. **(T-1).**

6.4.7.1. If frequency or severity of identified discrepancies warrant inclusion of that item into a specific TO governing an action or inspection, the QA Chief Inspector must submit an AFTO Form 22 or develop a local work card, local page supplement or checklist IAW TO 00-5-1. **(T-1).**

6.4.8. Establish procedures for QA Inspectors to document completed inspections. **(T-1).**

6.4.9. Perform inspections on GITA IAW **Chapter 11** of this instruction. **(T-1).**

6.4.10. Construct and maintain a master standardized AFTO Form 781-series forms binder IAW TO 00-20-1. **(T-1).**

6.4.11. Develop an aircrew briefing checklist specifically for high-speed taxi checks (see **paragraph 6.15** of this instruction). **(T-1).**

6.4.12. Review MSEP data monthly to identify high-missed carded items from PEs and QVIs. **(T-1).** A high-missed carded item is defined as any work card item missed at least three times during a one-month period. The Chief Inspector will:

6.4.12.1. Coordinate with MMA to identify any relationships with repeat, recur and CND trends. **(T-1).**

6.4.12.2. Include this data in the monthly MSEP summary. **(T-1).**

6.4.13. Conduct EPEs on each inspector. **(T-1).**

6.4.13.1. EPEs will be conducted while the Chief Inspector assesses one PE and one technical inspection (QVI/SI). **(T-1).**

6.4.13.2. Each QA Inspector, permanent or augmentee, must pass both EPEs prior to performing unsupervised evaluations and inspections. **(T-1).**

6.4.14. Document QA Inspector training in the Training Business Area (TBA). **(T-1).**

6.5. Quality Assurance Inspector Responsibilities. QA Inspectors will:

6.5.1. Evaluate flightline and back shop maintenance tasks and inspections to include items identified by the KTL/RIL. **(T-1).**

6.5.2. Enter inspection and evaluation reports into the MAJCOM-approved QA database. **(T-1).**

6.5.3. Perform QA review of Dull Swords, TCTOs, OTIs, modification proposals, DRs , AFTO Form 22s, instructions and supplements. **(T-1).**

6.5.4. Provide training/instruction as applicable to address deficiencies identified during evaluations/inspections. **(T-1).**

6.5.5. Evaluate forms and MIS documentation to evaluate compliance IAW MXG written procedures described in **Chapter 2** of this instruction. **(T-1).**

6.5.6. Evaluate maintenance TO files that are kept on the aircraft (G files). **(T-1).**

6.6. Quality Assurance Inspector Training. As a minium, the local QA Inspector Training Plan will include the applicable items listed below to ensure QA program standardization. **(T-1).**

6.6.1. Training must cover inspection and evaluation techniques, documenting inspection worksheets and actions to prevent personnel injury or property/equipment damage. **(T-1).**

6.6.1. **(AFMC)** Training must cover the evaluation and inspections of functional area(s) (e.g., Avionics, AGE, PMEL, Munitions, etc.) or programs (e.g., weight and balance, FCF) and be documented IAW AFI 36-2650. **(T-2).**

6.6.2. All EPEs must be tracked in the MIS and/or MAJCOM-approved QA database. **(T-1).** **Note:** Additional requirements for Nuclear Weapons Certifying Officials are located in AFI 21-204.

6.6.3. QA Inspectors inspecting outside of their AFSC will be task qualified on a Work Center Job Qualification Standard (WJQS) in TBA for the KTL requirements they evaluate. **(T-1).**

6.6.3.1. Chief Inspectors will identify other critical tasks requiring AF Form 797 qualification (QA WJQS) within TBA as required. **(T-1).**

6.6.3.2. For all other tasks, QA Inspectors must be familiar with the requirements/procedures of tasks they evaluate. **(T-1).**

6.6.3.2.1. CUT for QA Inspector is not allowed for 2W1 maintenance tasks. Only 2W1 personnel will perform these inspections (N/A to ARC). **(T-1).**

6.6.3.2.2. **(Added-AFMC)** Only qualified 2W0 7 Level personnel will inspect 2W0 maintenance tasks. **(T-2).**

6.6.4. All QA Inspectors will complete egress certification IAW **Chapter 4** of this instruction before evaluating egress tasks (if applicable). **(T-1).**

6.6.5. QA Inspectors may evaluate welding operations and processes. However, QA Inspectors will not evaluate completed welds unless certified IAW TO 00-25-252. **(T-1).**

6.6.6. QA personnel who conduct engine run evaluations are not required to maintain the engine run proficiency requirements outlined in **Chapter 11** of this instruction. **(T-1).**

6.6.7. Inspectors evaluating Low Observables (LO) maintenance must complete applicable LO TD courses and be certified in core training tasks contained in Attachment 3 of the 2A7X5 CFETP (N/A to ARC). **(T-1).**

6.6.8. QA Inspectors must be trained on all associated safety requirements prior to performing inspections on fuel systems or fuel systems repair facilities IAW TO 1-1-3. **(T-1).**

6.6.9. QA Inspectors evaluating NDI technicians during PEs must be a trained and qualified 2A7X2 (or civilian equivalent) on the method being evaluated. **(T-1).**

6.7. Maintenance Standardization and Evaluation Program (MSEP). The purpose of the MSEP is designed to provide unit's with a method of evaluating technical compliance and measure how well they comply with established standards.

6.7.1. Units will develop a MSEP and conduct local inspections to ensure their programs, processes, maintenance technician proficiency, equipment condition and other focus areas are in compliance with AF, MAJCOM and local directives. **(T-1).** The unit level MSEP is not applicable to contract maintenance activities unless required by the contract SOW or PWS.

6.7.1.1. The MSEP will be developed in conjunction with inputs from assigned squadron Operations Officers/Superintendents and Group Leadership and will be executed by QA. **(T-1).**

6.7.1.2. The MXG/CC will focus the unit program on problem areas where improvements are needed. **(T-1).**

6.7.1.3. The following types of evaluations, inspections and observations support the MSEP: PEs, QVIs, SIs, Management Inspection (MI)s, Detected Safety Violation (DSV)s, Technical Data Violation (TDV)s, Unsatisfactory Condition Report (UCR)s, and when directed, other inspections.

6.7.1.3.1. These inspection terms may differ based on MAJCOM-approved QA databases. If so, MAJCOMs will provide terms and definitions within their supplement to this AFI.

6.7.2. Unit MSEP Focus Areas. QA shall assess how units are meeting compliance goals and will identify areas of opportunity for improvement. **(T-1).** A unit's MSEP will focus on:

6.7.2.1. Compliance with and currency of TOs and directives. **(T-1).**

6.7.2.1.1. Ensure personnel at all levels are responsible and accountable for enforcing mandatory standards and ensuring all applicable TOs and directives are complete, current and used.

6.7.2.2. Aircraft, systems and equipment forms documentation. **(T-1).**

6.7.2.2.1. Ensure forms used to document any maintenance related action for aircraft, systems or equipment are documented IAW 00-20 series TOs, specific equipment TO requirements, and other applicable directives and supplements.

6.7.2.2.2. MSEP will validate compliance with the MXG's or equivalents' written procedures to ensure aircraft/system forms, equipment forms and MIS documentation

are complete, accurate, and accomplished for each shift as referenced in **paragraph 2.4.58** of this instruction. **(T-1).**

6.7.2.3. Aircraft, Systems and Equipment Inspections. **(T-1).**

6.7.2.3.1. Ensure aircraft and equipment, including munitions, are inspected IAW TOs and directives.

6.7.2.4. Compliance and Management of Safety, Environmental, Bioenvironmental, Housekeeping, and FOD Programs. **(T-1).**

6.7.2.4.1. Personnel at all levels are responsible for minimizing risk to equipment, personnel and the environment.

6.7.2.5. Training. **(T-1).**

6.7.2.5.1. Verify training is correctly documented and ensure individuals are qualified/certified to perform evaluated tasks.

6.7.2.6. Unit-Directed Programs. **(T-1).**

6.7.2.6.1. Verify units' programs are in compliance with local directives.

6.7.2.7. Key Task List (KTL). **(T-1).** The KTL is an AF, MAJCOM or unit developed list of required inspections that cover tasks that are complex and tasks affecting safety of flight.

6.7.2.7.1. MAJCOMs will identify minimum KTLs for each MDS.

6.7.2.7.1. **(AFMC)** Include the following tasks on the KTL as applicable:

6.7.2.7.1.1. **(Added-AFMC)** Major aircraft maintenance inspections (phase, periodic, and isochronal). **(T-2).**

6.7.2.7.1.2. **(Added-AFMC)** Engine final inspection (jet engine intermediate maintenance [JEIM]). **(T-2).**

6.7.2.7.1.3. **(Added-AFMC)** Engine, after installation to aircraft. **(T-2).**

6.7.2.7.1.4. **(Added-AFMC)** Engine controls (throttle) at time of installation. **(T-2).**

6.7.2.7.1.5. **(Added-AFMC)** Anytime maintenance is performed on the variable stator vane system on GE F110-100/-129 engines (JEIM). **(T-2).**

6.7.2.7.1.6. **(Added-AFMC)** Final aircraft gun system installation prior to panel installation. **(T-2).**

6.7.2.7.1.7. **(Added-AFMC)** Final gun system inspection (in-shop). **(T-2).**

6.7.2.7.1.8. **(Added-AFMC)** Engine blade blends (All engine types). **(T-2).**

6.7.2.7.1.9. **(Added-AFMC)** Engine bay inspection. **(T-2).**

6.7.2.7.1.10. **(Added-AFMC)** A-10 white area. **(T-2).**

6.7.2.7.1.11. **(Added-AFMC)** The Center/Wing/Group may add additional tasks to the KTL. Develop Standardized AQLs for all MAJCOM KTLs and review every 24 months. **(T-2).**

6.7.2.7.2. All maintenance actions/functions listed on the KTL require mandatory call-in to QA each time the maintenance action/function is accomplished. **(T-1).**

6.7.2.7.2.1. QA evaluators will respond and perform an evaluation. **(T-1). Exception:** The MXG or designated representative may waive the inspection.

6.7.2.7.2.1.1. QA will track all KTLs called in, waived or completed and maintain a list of MXG-designated KTL waiver authorities. **(T-1).**

6.7.2.7.3. QA will review and update the KTL list at least every 2 years to ensure it encompasses those maintenance actions/functions directly affecting quality of maintenance. **(T-1).**

6.7.2.8. Routine Inspection List (RIL). **(T-1).** The RIL is an AF, MAJCOM, or unit developed list of routine inspections that must be performed. Frequency is determined by MXG/CC or equivalent.

6.7.2.8.1. QA shall consolidate Operations Officer/MX SUPT inputs/suggested changes to the RIL and obtain MXG/CC approval. **(T-1).**

6.7.2.8.2. Additional RIL requirements, for nuclear capable units, are located in AFI 21-200.

6.7.2.8.3. Tasks will not be removed from the RIL without issuing authorities' approval (e.g., AF, MAJCOM, MXG/CC). **(T-1).**

6.7.2.8.4. The RIL must contain the following if applicable to the unit:

6.7.2.8.4.1. Pre-flight. **(T-1).**

6.7.2.8.4.2. Thru-flight. **(T-1).**

6.7.2.8.4.3. Basic post-flight. **(T-1).**

6.7.2.8.4.4. HSC inspections. **(T-1).**

6.7.2.8.4.5. Aircraft forms/MIS documentation. **(T-1).**

6.7.2.8.4.6. Equipment forms/MIS documentation. **(T-1).**

6.7.2.8.4.7. Aircraft and munitions flightline accountability/CAS documentation. **(T-1).**

6.7.2.8.4.8. Aircraft ground handling. **(T-1).**

6.7.2.8.4.9. Launch and recovery. **(T-1).**

6.7.2.8.4.10. Servicing tasks. **(T-1).**

6.7.2.8.4.11. Technical data. **(T-1).**

6.7.2.8.4.12. CTK Program. **(T-1).**

6.7.2.8.4.13. TMDE calibrations when the performing work center is not a PMEL IAW TO 00-20-14. **(T-1).**

6.7.2.8.4.14. AGE maintenance. **(T-1).**

6.7.2.8.4.15. AGE flightline use. **(T-1).**

6.7.2.8.4.16. Housekeeping. **(T-1).**

6.7.2.8.4.17. Vehicles. **(T-1).**

6.7.2.8.4.18. Aircraft washes/aircraft corrosion inspections. **(T-1).**

6.7.2.8.4.19. Supply discipline (e.g., TNB, DIFM). **(T-1).**

6.7.2.8.4.20. Equipment washes/ equipment corrosion inspections. **(T-1).**

6.7.2.8.4.21. Environmental compliance. **(T-1).**

6.7.2.8.4.22. NWRM accountability and forms documentation. **(T-1).**

6.7.2.8.4.23. TCTO Program. **(T-1).**

6.7.2.8.4.24. Time-Change Program. **(T-1).**

6.7.2.8.4.25. FHP management. **(T-1).**

6.7.2.8.4.26. **(Added-AFMC)** Munitions build-up. **(T-2).**

6.7.2.8.4.27. **(Added-AFMC)** Flight control rigging procedures and primary flight control rigging tasks as designated in aircraft MDS specific technical data. **(T-2).**

6.7.2.8.4.28. **(Added-AFMC)** TCTO accomplishment. **(T-2).**

6.7.2.8.4.29. **(Added-AFMC)** Aircraft weapons systems reconfiguration activities (installation/removal of racks, adapters, launchers, pylons, etc.). **(T-2).**

6.7.2.8.4.30. **(Added-AFMC)** Aircraft external tank reconfiguration procedures. **(T-2).**

6.7.2.8.4.31. **(Added-AFMC)** Aircraft modification program compliance and conformity. **(T-2).**

6.7.2.8.4.32. **(Added-AFMC)** Oil Analysis Program (to include sampling procedures, documentation, etc.). **(T-2).**

6.7.2.8.4.33. **(Added-AFMC)** Uninstalled engine test cell operations, Auxiliary Power Units, Auxiliary Power Plants and Jet Fuel Starters. **(T-2).**

6.7.2.8.4.34. **(Added-AFMC)** Aircraft Fuel System Repair Operations (prior to tank closure, etc.). **(T-2).**

6.7.2.8.4.35. **(Added-AFMC)** Aircraft pressurization/depressurization. **(T-2).**

6.7.2.8.4.36. **(Added-AFMC)** Aircraft jacking operations. **(T-2).**

6.7.2.8.4.37. **(Added-AFMC)** Aircraft engine run operations. **(T-2).**

6.7.2.8.4.38. **(Added-AFMC)** Foreign Object. **(T-2).**

6.7.2.8.4.39. **(Added-AFMC)** Equipment Management. **(T-2).**

6.7.2.8.4.40. **(Added-AFMC)** Safety (Industrial & Flightline). **(T-2).**

6.7.2.8.4.41. **(Added-AFMC)** Engine Management. **(T-2).**

6.7.2.9. QA will coordinate with the Munitions Activity (Munitions Flight CC/Chief; or Operations Officer/MX SUPT in the Munitions Squadron (MUNS)) and will develop quarterly standards for the following areas:

6.7.2.9.1. Munitions accountability. **(T-1).**

6.7.2.9.2. Munitions storage practices, security and safety. **(T-1).**

6.7.2.9.3. Munitions inspections. **(T-1).**

6.7.2.9.4. Munitions materiel handling and test equipment. **(T-1).**

6.7.2.9.5. Munitions stockpile management. **(T-1).**

6.7.2.9.6. Tactical munitions reporting system. **(T-1).**

6.7.2.9.7. Munitions infrastructure (e.g., adequacy of lightning protection and grounding systems, bonding of facility doors, adequate power conversion equipment). **(T-1).**

6.7.2.9.8. Munitions training programs. **(T-1).**

6.7.3. Unit MSEP Evaluation and Inspection (E&I) Plan. QA will develop an E&I Plan showing areas, types and numbers of inspections and evaluations to complete during the month. **(T-1).**

6.7.3.1. The E&I Plan, and changes to it, will be coordinated through each squadron Operations Officer/MX SUPT and approved by the MXG/CC. **(T-1).**

6.7.3.2. The E&I Plan will be reviewed and updated monthly based on trends in the maintenance complex and will be adjusted to meet the MXG/CC's focus areas**. (T-2).**

6.7.3.3. When developing the E&I Plan, the QA SUPT will:

6.7.3.3.1. Address areas of concern identified by maintenance managers and the WWM. **(T-1).**

6.7.3.3.1.1. **(Added-AFMC)** Consider historical PEs, QVIs, and other inspections data (especially any items having a pass rate of less than 80 percent); not mission capable (NMC) causes; aborts and trends; in-flight emergencies (IFE) and trends; high component or system failure rates; repeat/recurring/CND discrepancies trends; Deficiency Report (DR)/ Service Report (SR) trends; suspected training deficiencies; technical data violations (TDVs), detected safety violations (DSVs), and tasks outlined in aircraft -6 TOs. **(T-2).**

6.7.3.3.2. Tailor the plan for each squadron, flight or section. **(T-1).**

6.7.3.3.2.1. **(Added-AFMC)** Identify the assessment type (i.e., task, specific item, procedure or process) and minimum number (determined by the documented methodology (e.g., ANSI- Z1.4 2003) or rationale used in the program administration section of the E&I Plan) of Personnel Evaluations (PE), Quality Verification Inspections (QVI), and Routine Inspection List (RIL) and assessment areas to be conducted monthly. **(T-2).**

6.7.3.3.3. Coordinate and distribute the E&I Plan. **(T-1).**

6.7.4. Evaluation Criteria.

6.7.4.1. Acceptable Quality Levels (AQL). AQLs denotes the maximum allowable number of minor findings that a process or product may be charged for the task to be rated "Pass" and are used to minimize subjectivity in assessing tasks identified by the MSEP.

6.7.4.1.1. MAJCOMs may develop standardized AQLs by weapon system and establish procedures to review at least annually.

6.7.4.1.2. GP/CCs will establish AQLs for tasks/inspections not included on the MAJCOM AQL listing. **(T-1).**

6.7.4.1.2.1. AQLs need to be derived/revised from QA performance-based data.

6.7.4.1.3. AQLs/baselines for nuclear maintenance, cruise missile maintenance and nuclear weapons handling tasks are defined in AFI 21-200.

6.7.4.2. Discrepancy Categories.

6.7.4.2.1. Category I (CAT I). A required inspection/TO/AFI procedural item missed or improperly completed. This category is a specific AFI requirement, work card item or TO step, note, caution or warning for a specific condition or action. Use sub-classifications of major or minor to indicate the discrepancy's relative severity.

6.7.4.2.2. Category II (CAT II). An obvious defect, which could have been readily detected by a technician or supervisor, but is not a specific AFI requirement, work card item or TO step, note, caution or warning for that specific evaluated task. Use sub-classification of major or minor to indicate the discrepancy's relative severity.

6.7.4.3. Findings.

6.7.4.3.1. A major finding is defined as a condition that would endanger personnel, jeopardize equipment or system reliability, impact safety of flight or warrant discontinuing the process or equipment operation.

6.7.4.3.2. Any major discrepancy will result in an automatic inspection failure. **(T-1).**

6.7.4.3.3. The QA Inspector will intercede and declare a major finding when one additional action "would" result in one of the following; endanger personnel, jeopardize equipment or system reliability, impact safety of flight or warrant discontinuing the process or equipment operation. **(T-1).**

6.7.4.3.3.1. The QA Inspector will write up the major finding even though the jeopardizing action was never taken due to their intercession. **(T-1).**

6.7.4.4. A minor finding is defined as an unsatisfactory condition that requires repair or correction, but does not endanger personnel, impact safety of flight, jeopardize equipment reliability or warrant discontinuing a process or equipment operation.

6.7.4.4.1. CAT II minors shall be documented for trends, but must not be counted against the AQL. **(T-1).**

6.7.4.4.2. FO contained in tool kits or found in cargo areas of aircraft which pose no FOD threat are classified as a minor finding since it would require more than one additional action to meet the definition of a major finding.

6.7.5. Observations. This category represents observed events or conditions with safety implications or technical violations not related to an evaluation or inspection, are considered unsafe, in violation of established procedures, or in the case of equipment, unfit for operations. Observations include: DSVs, TDVs and UCRs. The MAJCOM-approved QA database is used to document any of the following conditions:

6.7.5.1. DSV. An observed unsafe act by an individual.

6.7.5.1.1. The QA Inspector must stop the unsafe act immediately. **(T-1).**

6.7.5.1.2. The QA Inspector will not document a separate DSV on an individual undergoing a PE since the unsafe act automatically results in a "Fail" rating on the PE. **(T-1).**

6.7.5.1.2.1. The QA Inspector will use DSV verbiage in the PE summary when a safety violation is committed during a PE. **(T-1).**

6.7.5.2. TDV. An observation of any person performing maintenance without the proper technical data available, available but not in use or not following the correct sequence of steps (if directed).

6.7.5.2.1. The technician must have knowledge of all general directives associated with the job prior to performing the task. **(T-1).** However, those general directives need not be present at the job site.

6.7.5.2.2. Do not document a separate TDV on an individual undergoing a PE, but use TDV verbiage in the PE summary since failure to use technical data automatically results in a "Fail" rating.

6.7.5.3. UCR. An unsafe or unsatisfactory condition, other than a DSV, chargeable to the work center supervisor.

6.7.5.3.1. UCRs will be documented even when it is not possible to determine who created the condition. **(T-1).**

6.7.6. Evaluations. An evaluation represents the direct evaluation of a logistics action, inspection, or training conducted/performed by an individual or team. Evaluations are used to evaluate job proficiency, degree of training, and compliance with technical data or instructions.

6.7.6.1. Personnel Evaluations (PE). A PE is an over-the-shoulder (direct) evaluation of a maintenance action or inspection. Individuals performing, supervising or evaluating maintenance tasks are subject to a PE. PEs may be performed on individuals working alone or as part of a team.

6.7.6.1.1. Rate PEs “Pass or Fail” based on established AQLs/standards. **(T-1).**

6.7.6.1.1.1. **(Added-AFMC)** Ensure personnel performing maintenance on aircraft/equipment receive a PE every 24 months. For failed PE, conduct a follow-up evaluation on the same task within 30 days (extensions may be given

on a case by case bases, but not to exceed 60 days). **(T-2).**

6.7.6.1.2. Document the PE in the MAJCOM-approved database. **(T-1).**

6.7.6.1.3. PEs will be accomplished on all technicians who perform maintenance based on the MAJCOM-established frequency. **(T-1).**

6.7.6.1.4. Personnel in any AFSC certified to perform nuclear maintenance or logistics operations (e.g., limited general maintenance, transfer, transport, etc.), will also comply with applicable PE requirements in AFI 21-200. **(T-1).**

6.7.6.1.5. Types of PEs.

6.7.6.1.5.1. Individual Evaluations. This is a QA over-the-shoulder (direct) evaluation of a technician or supervisor performing a job.

6.7.6.1.5.2. Team Evaluations. This is a QA over-the-shoulder (direct) evaluation of technicians and supervisors performing a team task.

6.7.6.1.5.2.1. A team task is one requiring more than one person to complete the task (e.g., refueling, ECM pod up/down loading, bomb build-up, towing, weapons maintenance, pylon installation).

6.7.6.1.5.2.2. Team evaluations must accurately assess the proficiency of each individual under evaluation. **(T-1).**

6.7.6.1.5.2.3. Refer to AFI 21-200 for nuclear weapons maintenance and handling evaluations.

6.7.6.1.6. QA Inspectors will conduct PE's on each NDI technician, for each NDI method annually (every 2 years for the ARC) to ensure effective trending on NDI methods. **(T-1).**

6.7.6.2. Performing a PE. When performing a PE, the QA Inspector will brief the individual or team on the evaluation and how it will be rated. **(T-1).**

6.7.6.2.1. The QA inspector will determine what task will be evaluated. **(T-1).**

6.7.6.2.2. The PE will include an evaluation of: the individual's training records, SCR (if task requires), tool box, TMDE, and TOs used to perform the task. **(T-1).**

6.7.6.2.3. The evaluation starts when the individual or team begins the task, or portion of the task to be evaluated, and is completed when the task or previously determined portion of the task is finished. **(T-1).**

6.7.6.2.4. Provide feedback to the individual or team and supervision upon completion. **(T-1).**

6.7.6.3. Rating PEs. QA Inspectors rate each evaluation based on AQLs/standards. The rating applies only to the specific task evaluated and not to other tasks that a technician or supervisor is qualified to perform. Upon completion of a failed evaluation, the QA Inspector must provide on-the-spot feedback. **(T-1).** Determine ratings as follows:

6.7.6.3.1. Pass: Number of discrepancies does not exceed AQL/standards.

6.7.6.3.2. Fail: An evaluation that results in any of the following:

6.7.6.3.2.1. Number of discrepancies exceeds the established AQL/standards.

6.7.6.3.2.2. A technician fails to detect a major discrepancy while complying with an inspection or TO requirement.

6.7.6.3.2.3. A technician fails to comply with a technical data step that could affect the performance of the equipment involved or cause injury to personnel.

6.7.6.3.2.3.1. QA Inspectors will notify indivduals immediately during the PE that a TDV was committed. **(T-1).**

6.7.6.3.2.3.2. Do not document a separate TDV on an individual undergoing a PE, since failure to use technical data automatically results in a "Fail" rating.

6.7.6.3.2.4. A technician demonstrates a lack of technical proficiency, system knowledge or demonstrated knowledge commensurate with skill grade.

6.7.6.3.2.5. Training/certification not documented.

6.7.6.3.2.6. A technician commits a safety violation.

6.7.6.3.2.6.1. Use the word "Safety" when a safety violation is committed during a PE.

6.7.6.3.2.6.2. Do not document a separate DSV on an individual undergoing a PE since the unsafe act automatically results in a "Fail" rating on the PE.

6.7.6.3.2.7. A technician fails to document maintenance actions in appropriate equipment records.

6.7.6.3.2.8. For nuclear weapons maintenance, an unsatisfactory rating must be given when any deficiencies or applicable unsatisfactory conditions exist IAW Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3263.05, *Nuclear Weapons Technical Inspections*, or AFI 21-200. **(T-0).**

6.7.7. Inspections: An inspection represents inspections of equipment, programs and processes to ensure compliance with established standards. Inspections are rated as "Pass" or "Fail". Inspections include:

6.7.7.1. Quality Verification Inspections (QVI). A QVI is an inspection of equipment condition, or a maintenance process, an assessment following a maintenance inspection, servicing or repair action, or verification that a technician or supervisor properly completed an inspection or repair action.

6.7.7.1.1. QVIs shall not be conducted after equipment operation when such operation could invalidate indications of proper job accomplishment.

6.7.7.1.2. Limit QVIs to the same inspection card deck or technical data required for the job. This inspection does not require disassembling parts, removing stress panels or like actions.

6.7.7.1.3. A QVI required for -6 TO inspections may be accomplished by checking a portion of the required card or area.

6.7.7.1.4. The QVI report should reflect deficiencies by the individual who accomplished the task and identify specific discrepancies.

6.7.7.1.5. Document these discrepancies in active equipment records and forms (i.e., AFTO Form 781A, AFTO Form 244, *Industrial/Support Equipment Record*).

6.7.7.1.6. Rate QVIs "Pass" or "Fail" by comparing the number of discrepancies with the established AQLs/standards.

6.7.7.1.6.1. Pass: Number of discrepancies does not exceed established AQL/standard.

6.7.7.1.6.2. Fail: An inspection that results in any of the following:

6.7.7.1.6.2.1. A technician fails to detect a major discrepancy while complying with an inspection or TO requirement.

6.7.7.1.6.2.2. Number of CAT I minor discrepancies exceeds the established AQL/standard.

6.7.7.1.6.2.3. A technician is not signed off in training records as task qualified.

6.7.7.1.6.3. Document the QVI in the MAJCOM-approved QA database.

6.7.7.1.6.3.1. Each QVI is chargeable to the technician or supervisor who signed off/cleared the "corrected by" block or "inspected by" block of the applicable maintenance form or equipment record.

6.7.7.1.6.3.2. When evaluating the technician who signed off the "inspected by" block, evaluate only the items normally verified by signing off the "Red-X".

6.7.7.1.6.3.3. Only one evaluation is scored for each inspection.

6.7.7.2. Management Inspection (MI). Perform these inspections to follow-up on trends, conduct investigations or conduct research to get to the root cause of problems. GP/CCs, SQ/CCs or work center supervisors may request MIs. MIs may encompass PE/QVI trends and other inspection data, NMC causes, aborts and trends, in-flight emergency trends, high component or system failure rates, suspected training deficiencies, and tasks outlined in aircraft -6 TOs. MI results are reported to the requester. MIs can be non-rated and may be counted in QA trends. The MAJCOM-approved QA database will be used to document MIs. **(T-1).**

6.7.7.3. Special Inspections (SI). SIs are inspections not covered by QVIs, PEs or MIs. SIs may include, but are not limited to, aircraft and equipment forms inspections, document file inspections, CTKs, TO files, vehicle inspections, housekeeping, safety practices, FOD Program, etc. SIs may be condition, procedural or compliance oriented.

6.7.7.3.1. The MAJCOM-approved QA database will be used to document special inspections. **(T-1).**

6.7.7.3.2. When rating an SI, rate as "Pass" or "Fail" based on established AQLs/standards.

6.7.8. Discrepancy Reporting. Report all discrepancies to the applicable work centers.

6.7.8.1. QA will provide an authoritative source reference for all reported discrepancies (e.g. work cards, job guides, WUC manuals, checklists, occupational safety requirements, TOs, and other applicable references). **(T-1).**

6.7.9. Units will grade their MSEP evaluations using objective ratings based on the following five-tier rating system:

6.7.9.1. Outstanding: 95-100% **(T-1).**

6.7.9.2. Excellent: 90-94.99% **(T-1).**

6.7.9.3. Satisfactory: 80-89.99% **(T-1).**

6.7.9.4. Marginal: 70-79.99% **(T-1).**

6.7.9.5. Unsatisfactory: 0-69.99% **(T-1).**

6.7.9.6. Inspections and evaluations performed (e.g., PE, SI, QVI) are rated "Pass/Fail". **Exception:** Unless otherwise directed by AFI 21-200 and AFI 21-204 for Nuclear Weapons PEs and Certification Program.

6.7.9.7. Ratings are calculated by dividing the total number of inspections passed by total completed. For example, QA inspects 10 aircraft preflights with the following results: 9 "passes" and 1 "failure". Divide the total "passes" by the total inspections (9/10=0.90) 90 percent for an "Excellent" rating.

6.7.9.7.1. Deduct 0.5 percentage points from overall percentage grade for each TDV, DSV, and UCR. For example, a squadron earns an overall rating of 90 percent, "Excellent", however, QA observed 4 TDVs and 3 DSVs. Multiply the sum (7) by 0.5 and subtract the product (3.5) from the original 90 percent. The adjusted total is 86.5 percent; therefore, the squadron is rated "Satisfactory".

6.7.10. A cumulative MXG score will be determined by dividing the Group's total number of inspections and evaluations passed by the total inspections and evaluations completed. **(T-1).**

6.7.10.1. Deduct 0.5 percentage points for each TDV, DSV, and UCR from the overall percentage grade, using same formula in **paragraph 6.7.10.7.1** of this instruction**.**

6.7.11. Monthly Summary. QA shall publish and distribute the monthly summary to the MXG/CC or equivalent and inspected organizations. **(T-1).**

6.7.11.1. For security purposes, classified portions of the MSEP will be published separately from the main summary. **(T-1).**

6.7.11.2. QA will compile the summary from inspection data and load crew evaluation statistics (provided by WS).

6.7.11.3. The MSEP summary should include visual information, graphs, narratives, quality trends identified through inspections and evaluations, discussion of common problem areas and descriptions of successful programs or initiatives.

6.7.11.4. The following areas must be addressed in the summary:

6.7.11.4.1. Compliance with and currency of TOs and directives to include unit. **(T-1).**

6.7.11.4.2. Aircraft and equipment forms documentation. **(T-1).**

6.7.11.4.3. Compliance and management of Safety, Environmental, Housekeeping, and FOD Programs. **(T-1).**

6.7.11.4.4. Training Program. **(T-1).**

6.7.11.4.5. Key Task List (KTL). **(T-1).**

6.7.11.4.6. Routine Inspection List (RIL). **(T-1).**

6.7.11.4.7. TDVs, DSVs, and UCRs. **(T-1).**

6.7.11.4.8. Munitions Program. **(T-1).**

6.7.11.4.9. TMDE QP Activity Summary (if TMDE lab assigned).**(T-1).**

6.7.11.4.10. High-missed carded items. **(T-1).**

6.7.11.4.10.1. A high-missed carded item is defined as any work card item missed at least three times during a one-month period.

6.7.11.4.10.2. Units should use the high-missed carded items to enhance maintenance training programs, detect trends and improve the quality of maintenance.

6.7.11.4.10.3. MMA will review items to identify any relationships with repeat, recur and CND trends. **(T-1).**

6.7.11.4.11. Narrative Report: The monthly narrative report must contain an analysis of the MSEP results, a summary of significant CAT I and II discrepancies, technical inspections and recommendations for improvement. **(T-1).**

6.7.11.4.11.1. Prior to preparing the narrative report, QA will conduct a study of trends. **(T-1).**

6.7.11.4.12. Trend Analysis. QA will review previous reports to determine if inspected areas have improved or declined. **(T-1).**

6.7.11.4.12.1. Consistent high scores in any category may indicate the programs emphasis is not focused on the unit's actual problem areas. Low scoring areas may require a reassessment of the corrective actions taken by management. Continuous communication between MMA, unit leadership, maintenance supervision, and QA personnel is essential.

6.7.11.4.12.2. Highlight trends and root causes in the summary.

6.7.11.4.12.2.1. **(Added-AFMC)** Establish and document procedures to follow-up highlighted trends and/or root causes to closure. **(T-2).**

6.7.11.4.12.2.2. **(Added-AFMC)** Ensures the work center develops and implements a corrective and preventive action process. (e.g., AF CPI Practical Problem Solving Method (PPSM), 5 Whys, etc.) **(T-2).**

6.7.12. MSEP Meetings. The MXG or equivalent will conduct quarterly meetings to review a summary of the last three months of MSEP data. **(T-1).**

6.7.12.1. The MXG/CC or equivalent shall chair the meeting. **(T-1).**

6.7.12.2. Attendees must include, as a minimum, SQ/CCs, Operations Officers/MX SUPTs, WWMs, Chief Inspector, and senior analysts. **(T-1).**

6.7.12.3. **(Added-AFMC)** MSEP Summary. The MSEP summary shall be distributed to HQ AFMC/A4MM. **(T-2).**6.7.13. (Added) HQ AFMC/A4MM Command QA Functional Manager shall: **(T-2).**

6.7.13. **(Added-AFMC)** Oversee the AFMC MSEP, and serve as POC for AFMC QA functions.

6.7.13.1. **(Added-AFMC)** Ensure development and review of Commanders Inspection Program Self-Assessment Communicators (SACs) IAW AFI 90-201 AFMC Sup.

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

6.7.13.3. **(Added-AFMC)** Approve unit QA databases.

6.7.13.4. **(Added-AFMC)** Host and chair the Quality Assurance Working Group (QAWG).

6.7.13.5. **(Added-AFMC)** QAWG members include unit QA Chiefs/reps. Additionally, HQ AFMC/IGL, HQ AFMC MFMs/SME, COR and designated union representatives may attend as required.

6.7.13.6. **(Added-AFMC)** QAWG will conduct a technical interchange meeting every 2 years in person (funding permitting) and participate in teleconferences at least bi-monthly. **(T-2).**

6.8. MAJCOM-approved QA database. Units will use their MAJCOM-approved QA database to capture MSEP data. **(T-1).** MAJCOMs will ensure the data fields contained in the database include:

6.8.1. Work center: Input the shop code whose process was inspected.

6.8.2. Inspector: Enter the employee number of the inspector.

6.8.3. Employee: Enter the employee number or equivalent of the person inspected.

6.8.4. Date: Enter the date the inspection was completed.

6.8.5. Time: Enter the time of day when the inspection took place (24-hour clock).

6.8.6. Shift: Enter the shift during which the actual work was performed.

6.8.7. Type Inspection Performed: This code reflects the inspection performed. (e.g., PE, SI, QVI)

6.8.8. WUC/LCN or Type Event Code (TEC): This code reflects the event being evaluated. (e.g., CTK, PH)

6.8.9. AQL/standards: The number of discrepancies allowed for a particular item or process (task).

6.8.10. Inspection Rating: “Pass” or “Fail”.

6.8.11. Equipment: Enter the type of equipment assessed.

6.8.12. Equipment ID: Enter the equipment ID. Example of this field would be A/C serial number 91-0387, SG01, etc.

6.8.13. Discrepancy Category: Identify discrepancies as: Major, Minor (CAT I, CAT II).

6.8.14. Remarks: The narrative of inspector findings.

6.8.15. Total items inspected (e.g., number of tools, number of pages of forms, etc.).

6.8.16. **(Added-AFMC)** Cause Code of the discrepancy. **(T-2).**

6.8.17. **(Added-AFMC)** Forward a copy to HQ AFMC A4MM for review and approval. **(T-2).**

6.9. QA Product Improvement Programs (PIP). QA runs PIP for the maintenance complex. Combined with daily maintenance data reporting,the PIP monitors and reviews maintenance data to identify opportunities to improve R&M of aircraft and equipment. PIP includes the following programs:

6.9.1. Deficiency Reporting.

6.9.2. AFTO Form 22.

6.9.3. Source, Maintenance, Recoverability (SMR) code change request(s).

6.9.4. Configuration Management Program; AF Form 1067, *Modification Proposal*; and TCTOs.

6.9.5. Product Improvement Manager (PIM). The MXG/CC or equivalent will assign a PIM within their organization with responsibilities as specified in this chapter. **(T-1).** The PIM promotes deficiency reporting and provides a sound PIP based on inputs from maintenance activities. The PIM interacts with assigned AFETS personnel, Field Service Representatives (FSR) and MAJCOM/Lead Command as applicable to remain cognizant of ongoing and new improvement initiatives. The PIM emphasizes and promotes product improvement initiatives and ensures maintenance personnel are familiar with them by circulating flyers/newsletters, visiting commander's calls, presenting the program at maintenance orientation briefings and making routine visits to maintenance areas.

6.9.5.1. Deficiency Reporting. DR is the process of reporting prescribed by TO 00-35D-54. Maintenance processing of warranty items is located in TO 00-20-3. The PIM's will:

6.9.5.1.1. Monitor the DR process to ensure items are properly loaded in the MIS database. **(T-1).**

6.9.5.1.2. Ensure compliance with acceptance inspection reporting requirements on DRs for aircraft returning from depot or contractor maintenance. **(T-1).**

6.9.5.1.3. Ensure DRs are submitted using Joint Deficiency Reporting System (JDRS) at **https://jdrs.mil**. **(T-1).**

6.9.5.1.4. Review the DR prior to releasing to the ALC or AFMC Maintenance Wings IAW TO 00-35D-54. **(T-1).**

6.9.5.1.5. Verify each report against pertinent publications and assign the appropriate precedence and category. **(T-1).**

6.9.5.1.6. Screen reported deficiencies for possible unit-unique contributing factors and initiate management action on unsatisfactory conditions resulting from local procedures or a lack of technical capability. **(T-1).**

6.9.5.1.7. Perform/coordinate a technical review of DRs returned to the unit without an adequate response to determine whether resubmitting with additional information is warranted. **(T-1).**

6.9.5.1.8. Perform exhibit-processing oversight by coordinating with the ALC and the LRS to ensure proper exhibit control and handling. **(T-1).**

6.9.5.2. Technical Order Improvement Program (AFTO Form 22). The PIM will:

6.9.5.2.1. Ensure proper evaluation is performed and forms are properly filled out and processed IAW TO 00-5-1. **(T-1).**

6.9.5.2.1.1. WS will review and approve all AFTO Form 22s for weapons loading TOs and will fill in Block 9 and indicate "Approval" /"Disapproval" in Block 1. **(T-1).**

6.9.5.2.2. Ensure control numbers are assigned and forward all AFTO Form 22s via e-mail transmission or to the appropriate action agency and provide a courtesy copy to the initator. **(T-1).**

6.9.5.2.3. Maintain an AFTO Form 22 suspense file. **(T-1). Note:** An approved AFTO Form 22 does not provide authority to deviate from current TO procedures; TO changes must be posted to implement approved AFTO Form 22s.

6.9.5.2.4. Conduct a technical review of disapproved AFTO Form 22 to determine whether to resubmit with additional information. **(T-1).**

6.9.5.3. SMR code change request. Submit an SMR code change request IAW TO. 00-25-195, *Air Force Technical Order System Source, Maintenance, and Recoverability Coding of Air Force Weapons, Systems, and Equipment.* The PIM will:

6.9.5.3.1. Track the status of SMR change requests. **(T-1).**

6.9.5.3.2. Conduct a technical review of SMR change requests returned from depots and item managers with an unsatisfactory answer to determine whether to resubmit with additional information. **(T-1).**

6.9.5.3.3. Coordinate repair evaluation meetings when approved SMR change requests affect several agencies. **(T-1).**

6.9.5.3.4. Serve as focal point for base-level repair and manufacturing capability. **(T-1).**

6.10. Configuration Management (CM) and Modification Management. QA is responsible for CM and Modification Management. This includes reviewing, submitting and tracking unit modification proposals being worked by MAJCOMs/Lead Commands and ensuring proper implementation of approved modification instructions or TCTOs.

6.10.1. QA will manage/document modifications IAW **Chapter 15** of this instruction, AFI 63-131, TO 00-20-2 and TO 00-5-15. **(T-1).**

6.10.2. QA will establish a process for updating the Integrated Maintenance Information System (IMIS) for weapon systems (e.g. F-15E) that require manual updates for TCTO configuration. **(T-1).**

6.10.3. **(Added-AFMC)** The PIM will:

6.10.3.1. **(Added-AFMC)** Evaluate the overall unit configuration management program by reviewing technical, managerial, and documentation aspects of the program. Report any deficiencies to appropriate local manager or as directed in TO 00-5-15, Air Force Time Compliance Technical Order Process, and AFMC instructions. Immediate action, urgent action, and safety TCTOs require particular attention and emphasis. **(T-2).**

6.10.3.2. **(Added-AFMC)** Monitor and document initial compliance on TCTOs and determine depth and frequency of inspection coverage. Coverage is directly related to the complexity of the TCTO as well as to how critical the system or the component is to be modified. **(T-2).**

6.10.3.3. **(Added-AFMC)** Support verification, validation and TCTO kit proofing, OTIs and command-directed modifications. **(T-2).**

6.10.3.4. **(Added-AFMC)** Along with the TCTO monitor, attend all TCTO planning and reconciliation meetings. **(T-2).**

6.10.3.5. **(Added-AFMC)** Ensure all test aircraft that do not meet TCTO applicability criteria due to installed modifications are identified and tracked in a comprehensive database system. This non-applicability list will reference the waiver of compliance signed by the MXG/CC. **(T-2).**

6.10.3.6. **(Added-AFMC)** Coordinate with the MOF PS&D and the combined flight test (CFT) modification manager (when necessary), the PIM will ensure all aircraft that are de-modified have a conformity check (de-mod reconciliation) complied with to ensure aircraft TCTOs are reinstated (As applicable). **(T-2).**

6.11. Technical Order Distribution Office (TODO). The TODO ensures TOs are managed IAW AFI 63-101/20-101, *Integrated Life Cycle Management*, TO 00-5-1 and TO 00-5-15. TO 00-5-1 provides criteria for establishing levels of TO distribution activities. Additionally, TODOs shall control electronic technical data configuration IAW **Chapter 8** of this instruction. **(T-1).** Establish the PMEL TODO under the control of the TMDE Flight. **(T-1).** The TODO will:

6.11.1. Coordinate with QA SME for each incoming TCTO to determine applicability. **(T-1).**

6.11.1.1. All TCTOs received from outside agencies need to be routed through QA for the review process.

6.11.1.2. TCTO applicability is determined by aircraft serial number for aircraft, engine serial number for engines, and by part number or other specific criteria for commodities.

6.11.1.3. TCTOs need to be manually or electronically date stamped to reflect the date the electronic or hard copy is received.

6.11.1.3.1. Date stamping all TCTOs both manually on a hard copy and/or electronically with the date received indicates QA has reviewed the TCTO and that applicability has been determined.

6.11.1.3.2. TCTO electronic date stamping can be accomplished by utilizing a locally-developed spreadsheet containing the minimum following information; TCTO number, MDS, receiving TODO name, applicability determination and the date received, all of which must be associated with the corresponding TCTO. This date received will be entered by the QA TODO responsible for tracking TCTOs. **(T-1).**

6.11.1.3.2.1. If used, the TCTO tracking spreadsheet will be electronically secured and controlled by the receiving QA office. **(T-1).**

6.11.1.3.3. Only date-stamped TCTOs are authorized for use. **(T-1).**

6.11.1.4. Post TCTO file copies IAW TO 00-5-1. **(T-1).**

6.11.1.4.1. TCTO file copies may be posted/distributed in electronic format provide all requirements of TO 00-5-1 and AFMAN 33-363 are sustained. Electronic TCTO distribution is automated for Enhanced Technical Information Management Systems (ETIMS)/IETM.

6.11.1.5. For hard copy TCTOs, provide a file copy of the TCTO to PS&D. **(T-1).**

6.11.1.6. Ensure personnel assigned as TODO/Technical Order Distribution Account (TODA) managers meet requirements set forth in TO 00-5-1 and AFI 63-101/20-101. **(T-1).**

6.11.2. Manage the QA Central TO File. **(T-1).**

6.11.2.1. As a minimum, the QA Central TO File must contain copies (paper copies for paper-only TOs or local access to digital TOs) of general and procedural TOs and copies of all TCTOs pertaining to the assigned aircraft and equipment owned, operated or maintained. **(T-1).**

6.11.2.2. The file is kept to meet QA requirements, not to duplicate TOs held by maintenance work centers.

6.11.3. Manage TO accounts using ETIMS IAW TO 00-5-1. **(T-1).**

6.11.4. Limit use of Local Work Cards (LWC), Local Job Guides (LJG), Local Page Supplements (LPS) or Local Checklists (LCL) to accomplish maintenance on AF equipment. **(T-1).** Locally prepared technical instructions will not be used to circumvent approved technical data (see TO 00-5-1). **(T-1).**

6.11.4.1. The TODO will review and manage all locally developed products IAW TO 00-5-1 and MAJCOM supplements for safety and adequacy of procedures. **(T-1).**

6.11.4.2. LWCs, LJGs, LPSs and LCLs need to be reviewed for currency when source reference data changes.

6.11.4.3. TODO will develop local publications IAW AFI 33-360 to ensure compliance with these policies. **(T-1).**

6.11.5. Prepare a list of all changes and revisions to indexes, TOs, inspection work cards and checklists. **(T-1).**

6.11.5.1. This list will include TO number and date received. **(T-1).**

6.11.5.2. The TODO will date stamp the cover page of all paper TOs, changes, supplements, LWCs, LJGs, LCLs and Computer Program Identification Numbering (CPIN)s to reflect the date the hard copy is received. **(T-1).**

6.11.5.2.1. This list will be included in the wing's weekly maintenance plan and flying schedule or electronically linked. **(T-1).**

6.11.5.2.2. Supervisors need to review the list of changes and ensure all personnel are aware a change or revision has been received.

6.11.5.3. "Immediate" action TCTOs must be implemented upon receipt, and "Urgent Action" TCTOs, safety supplements and interim supplements must be brought to the attention of supervisors within 24 hours of receipt. **(T-1).**

6.11.6. Ensure all authorized technical data variances are kept with aircraft/equipment historical records until no longer applicable (aircraft/equipment historical record requirements listed in **Chapter 15** of this instruction). **(T-1).**

6.11.7. If designated as Lead TODO (primary as designated in block 6 of the AFTO Form 43 per TO 00-5-1), will conduct a management inspection on other maintenance TODOs/TODAs in the maintenance complex at least annually along with performing spot checks of TO files. **(T-1).**

6.11.7.1. As part of this inspection, the TODO will confirm TODO/TODA personnel and Library Custodian have completed the mandatory minimum requirements of TO System training. **(T-1).**

6.11.7.2. The Lead TODO(s) shall work with other TODOs and TODAs (and Client Support Administrators CSAs/Functional Systems Administrators (FSA)s if required) to ensure eTools are configured with current software to support TO and maintenance documentation. **(T-1). Note:** Network configuration for eTools is available in TO 31S5-4-ETOOL-1-WA-1. Additional user support available through the Air Force Technical Order Functional Support Team, **af.etimstofst@us.af.mil** or DSN 872-9300.

6.11.8. Control the electronic data configuration on applicable eTools IAW **Chapter 8** of this instruction. **(T-1).**

6.11.8.1. TODOs will ensure eTools are locked down in the event of a mishap, until it is determined which eTool was used on the affected aircraft/equipment. **(T-1).**

6.11.9. Maintain records of ACPINS IAW TO 00-5-1 and TO 00-5-16. **(T-1).**

6.11.9.1. TODOs shall set up software sub-accounts with each appropriate shop/section and ensure each shop/section has the most current software on hand. **(T-1).**

6.11.9.2. TODOs will include ACPINs or equivalent system in the routine and annual checks required by TO 00-5-1. **(T-1).**

6.12. One-Time Inspections (OTI) program. The OTI program is managed by the MXG IAW TO 00-20-1. OTIs are normally look-only actions to verify the existence of suspected equipment conditions or malfunctions.

6.13. Functional Check Flights (FCFs) to include Operational Check Flights (OCFs).

6.13.1. Check Flights are performed to ensure an aircraft is airworthy and/or capable of accomplishing its mission. Additional guidance may be found in AFI 11-401, *Aviation Management*; AFI 11-202 V3, *General Flight Rules*; AFI 13-201, *AF Airspace Management*; TO 1-1-300, *Maintenance Operational Checks and Check Flights*; TO 00-20-1; and applicable -6 TOs and -1 Flight Manuals.

6.13.1.1. OCFs should be kept to a minimum and are not used to replace -6 TO FCF requirements. OCFs must be flown by experienced aircrews (not required to be an FCF qualified aircrew), must be briefed by QA for aircraft condition, and accomplished following the same maintenance criteria as FCFs. **(T-1).**

6.13.2. The QA FCF Program Manager will:

6.13.2.1. Establish local FCF procedures IAW TO 1-1-300 and checklists for any specific local aircraft requirements to include configuration, administration, control, and documentation of the FCF Program. **(T-1).**

6.13.2.1.1. Coordinate these procedures with OG Standardization/Evaluation and publish them in a wing publication/supplement IAW AFI 33-360. **(T-1).**

6.13.2.2. Coordinate with the appropriate squadron for an FCF pilot/aircrew and provide squadron operations with the aircraft tail number, reason for the FCF and anticipated takeoff time. **(T-1).**

6.13.2.3. Maintain an information file for briefing aircrews. **(T-1).**

6.13.2.3.1. As a minimum, this file must contain unit directives concerning FCF procedures and an FCF checklist for each MDS assigned. **(T-1).**

6.13.2.3.1.1. **(Added-AFMC)** Information file will also include:

6.13.2.3.1.1.1. **(Added-AFMC)** Mission profile for each type of assigned aircraft, consisting of checks to be accomplished, presented in consecutive order. **(T-2).**

6.13.2.3.1.1.2. **(Added-AFMC)** TO 1-1-300, *Acceptance/Functional Check Flight And Maintenance Operational Checks*. **(T-2).**

6.13.2.3.1.1.3. **(Added-AFMC)** List of authorized FCF crew members signed by the OG/CC. **(T-2).**

6.13.2.4. An FCF checklist will be used for each FCF. **(T-1).**

6.13.2.5. Ensure all FCFs are debriefed with the appropriate debrief function. **(T-1).**

6.13.2.5.1. During debriefing, the FCF checklist and aircraft forms will be reviewed to determine if all requirements have been accomplished. **(T-1).**

6.13.2.5.2. After completing the review, the FCF checklist will be sent to PS&D for inclusion in the aircraft jacket file. **(T-1).**

6.13.2.6. Maintain a copy of the AF Form 2400, *Functional Check Flight Log***,** or equivalent automated product for deficiency and trend analysis. **(T-1).**

6.13.2.6. **(AFMC)** Review the log monthly for trends indicating problems requiring further analysis or corrective actions. Identify deficient areas and forward to the MXW/CC and OG/CC for required review or action. **(T-2).**

6.13.3. FCF-qualified QA Inspectors will:

6.13.3.1. Ensure the FCF aircrew is briefed on the purpose and extent of the flight, previous maintenance problems and discrepancies recorded on the aircraft or engines related to the FCF. **(T-1).**

6.13.3.2. Ensure aircraft W&B documents are reviewed. **(T-1).**

6.13.3.3. Ensure AF Form 2400 or an equivalent automated product is maintained to provide information for evaluation and analysis. **(T-1).**

6.13.3.3.1. Include the date and time of the FCF, aircraft serial number, reason for FCF, name of debriefer and name of aircraft commander. **(T-1).**

6.13.3.3.2. The AF Form 2400 or equivalent automated product will also indicate if the aircraft was released for flight, reasons for any non-release, action taken and date completed and the date maintenance documents were forwarded to PS&D or records section. **(T-1).**

6.13.3.4. Ensure all maintenance actions are completed and all AFTO Form 781-series forms are documented IAW MDS specific -6 TO and TO 00-20-1 or electronic equivalent. **(T-1).**

6.13.3.5. All maintenance actions on transient aircraft requiring FCF must be reviewed by QA prior to FCF. **(T-1).**

6.13.3.5.1. If the aircraft MDS/type is not assigned at the transient base, then the owning unit must provide a qualified FCF pilot/crew and maintenance as required. **(T-1).**

6.13.4. Flight Requirements. The mandatory requirements for FCF are outlined in TO 1-1-300 and the applicable -6 TO. FCF profiles are determined by the maintenance requirement causing the FCF. The decision to fly a full profile FCF is the decision of the MXG/CC. The FCF profile will be tailored for the discrepancy causing the FCF by applying the following guidance:

6.13.4.1. Require a clean configuration whenever FCFs are flown for flight controls, fuel controls or engine changes. **(T-1).**

6.13.4.2. Do not remove fixed wing pylons, fixed wing tip tanks and fixed external stores unless they interfere with fuel scheduling, aerodynamic reaction, air loading, signal propagation, etc. **(T-1).**

6.13.4.3. Do not fly FCFs in conjunction with other missions or training requirements, unless authorized in TO 1-1-300. **(T-1).**

6.13.5. FCF Release. An FCF release occurs upon the successful completion of all requirements as determined by the FCF aircrew. The final decision to release rests solely

with the aircraft commander. An aircraft may be released for flight if a malfunction occurs during an FCF, which is not related to the condition generating the FCF and the original condition checks good.

6.13.5.1. An FCF conditional release may occur when the aircraft does not successfully complete FCF requirements due to a specific system malfunction. The FCF aircrew, in coordination with maintenance, determines a FCF conditional release if the malfunction may be corrected without generating another FCF. If upon review of the corrective action, the FCF aircrew accepts the maintenance action as a satisfactory repair of the malfunction, they may release the aircraft from FCF.

6.13.6. MAJCOMs will issue instructions for FCF procedures away from home station.

6.13.6. **(AFMC)** 1 (Added) While performing an FCF away from home station, the applicable requirements for FCFs of the transient/host base must be followed. The transient/host base QA office must be contacted and should be the focal point for all FCF requirements. **(T-2).**

6.14. Inflight Operational Checks. Inflight operational checks (as applicable) will be accomplished IAW TO 1-1-300, TO 00-20-1 and applicable -6 and -1 TOs. **(T-1).**

6.14.1. Document inflight operational checks IAW TO 00-20-1.

6.15. High Speed Taxi Checks. The MXG/CC and OG/CC may authorize high speed taxi checks when a maintenance ground operational check requires aircraft movement at higher than normal taxi speeds (with qualified FCF aircrews) to operationally check completed maintenance.

6.15.1. High speed taxi checks (as applicable) will be accomplished IAW TO 1-1-300 instead of FCFs. **(T-1).**

6.15.1.1. Process aircraft forms through QA using FCF procedures. **(T-1).**

6.15.1.2. QA will develop an aircrew briefing checklist specifically for high speed taxi checks, to include the required FCF briefing items and pertinent warnings, cautions, etc. **(T-1).**

6.15.2. Configure aircraft with the minimum -1 operational fuel requirements. **(T-1).**

6.15.3. Ensure aircraft is prepared for flight and the Exceptional/Conditional Release is signed off prior to conducting high speed taxi checks. **(T-1).**

6.16. Weight and Balance (W&B) Program. QA will manage this program IAW TO 1-1B-50, *Basic Technical Order for USAF Aircraft Weight and Balance*. **(T-1).**

6.16. (AFMC)Weight and Balance (W&B) Program. The weight and balance authority is the MXG/CC or equivalent. **(T-2).**

6.16.1. W&B manuals for Class I and II aircraft are maintained in a central file. **(T-1).**

6.16.1.1. The Lead Command will standardize the method of supplemental handbook storage and physical location for like-MDS aircraft.

6.16.1.1. **(AFMC)** [DEV] Weight and balance handbook storage and physical location will be determined by MXG/CC or equivalent for test/mission unique aircraft.

6.16.2. QA will manage W&B on commercial derivative aircraft IAW **Chapter 6** of this instruction. **(T-1). Note:** The contractor is responsible for managing W&B programs on CLS-supported aircraft.

6.16.3. The W&B Program Manager will ensure:

6.16.3.1. Sufficient personnel are qualified on assigned aircraft IAW TO 1-1B-50. **(T-1).**

6.16.3.2. All assigned aircraft are weighed IAW applicable directives. **(T-1).** The W&B Program Manager will:

6.16.3.2.1. Keep W&B documents required by TO 1-1B-50 for each assigned aircraft. **(T-1).**

6.16.3.2.2. Use the Automated Weight and Balance System (AWBS), and maintain a back-up copy of all W&B documents. **(T-1).**

6.16.3.3. Procedures are established for routing completed TCTO and modification information for W&B changes. **(T-1).**

6.16.3.4. Essential W&B data and changes to the basic weight and moment are available for appropriate mission planning (e.g., Standard Configuration Loads, updates to supplemental handbook). **(T-1).**

6.16.3.4. **(AFMC)** Form F

6.16.3.5. Periodic serviceability inspections are accomplished on unit-stored/maintained W&B equipment (as applicable). **(T-1).**

6.16.3.6. Coordination with Operations Officer/MX SUPT in developing a W&B Preparation Checklist if the aircraft -5 TO is not comprehensive enough for the task. **(T-1).**

6.16.3.7. The SCR reflects W&B certification. **(T-1).**

6.16.4. W&B Qualified QA Inspector Responsibilities. The W&B Qualified QA Inspector will:

6.16.4.1. Verify scale readings and accomplish/oversee the actual computations. **(T-1).**

6.16.4.2. Supervise the preparation, leveling and weighing of the aircraft IAW MDS specific –2 and –5 series TOs and TO 1-1B-50. **(T-1).**

6.16.4.3. Inspect W&B documents before flight when locally-accomplished modifications affect the basic aircraft weight and moment. **(T-1).**

6.16.4.4. Review computations for accuracy. **(T-1).**

6.17. (Added-AFMC) Chafing Awareness Program. This program is mandatory for fighter aircraft units and other MDS IAW applicable MDS technical data. QA must monitor and track instances of wire, harness and metal line/tube chafing. A randomly selected 10 percent of assigned aircraft are inspected when notification is received of a potential chafing problem involving like model, lot number or block of aircraft. **(T-2).**

6.17.1. **(Added-AFMC)** The Chief Inspector shall recommend initiating an OTI if the sampled aircraft indicates a chafing problem or the detected chafing is an operational safety hazard. The MXG/CC will be the final approval authority on the scope of the OTI. **(T-2).**

6.17.2. **(Added-AFMC)** QA will develop local chafing inspection work cards if there are no requirements in the Dash-6 TOs, for periodic, pre-flight, thru-flight and basic post-flight inspections. Ensure local work cards cover at least 50 percent of accessible areas, focusing on known chafing areas. **(T-2).**

6.17.3. **(Added-AFMC)** QA will utilize a database for the purpose of tracking wire and harness chafing problems identified through OTIs and maintenance cross-tell reports. Consult the database before expending man-hours performing inspections. **(T-2).**

Chapter 7

IMPOUNDMENT PROCEDURES

7.1. Aircraft and Equipment Impoundment. Aircraft 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. Impounding aircraft and equipment enables investigative efforts to systematically proceed with minimal risk relative to intentional/unintentional actions and subsequent loss of evidence.

7.1.1. **(Added-AFMC)** Coordinate with the applicable Safety Staff to determine reporting requirement IAW 91-204, when property damage to aircraft, equipment, commodities, or resources exceeds the Class D threshold ($20,000).

7.2. Specific Guidance. MXG/CCs, or equivalent, will ensure compliance with the procedures in this chapter and will develop a local Impoundment Program. **(T-1).** Local program procedures, requirements and responsibilities will be captured in a local supplement to this instruction. **(T-1)**.

7.2.1. QA is the OPR for the Impoundment Program and will develop local impoundment checklists. **(T-1).**

7.2.1. **(AFMC)** Unit QA will ensure development of a local operating instruction for local procedures to include local impoundment checklists (see Table 7-1) for use, notification, release officials, specific forms entries, appointment and responsibilities of impoundment investigating officials, special handling or tagging of parts from impounded items sent through the repair cycle and conducting impoundment investigations across organizations. **(T-2).**

Table 7.1. (Added-AFMC) Impoundment Actions.

	Impoundment Actions	Status
1	Impoundment authority directs impoundment and assigns an impoundment official.	
2	Enter a Red X in the applicable forms and MIS indicating the reason for impoundment and the name of individual assigned as impoundment official.	
3	Notify the MOC of impoundment decision.	
4	Select a team of highly qualified technicians to determine cause of problem that led to the impoundment.	
5	Control access to impounded aircraft or equipment and determine if an entry control point (ECP) is required. If ECP is established, use an access control log.	
6	Determine necessary controls required for aircraft and equipment records.	
7	Review aircraft or equipment forms and MIS for historical data related to the malfunction causing impoundment.	
8	Ensure maintenance is limited until the cause of impoundment is determined.	
9	Ensure parts removed are carefully controlled.	
10	Once the cause of the malfunction has been determined and corrected, determine if an OCF or FCF is necessary or required.	
11	Ensure QA is intimately involved in the impoundment process and has reviewed all actions taken to correct the malfunction.	
12	QA determines the need for cross-tell based on the potential effect to other aircraft and equipment.	
13	Brief release authority on findings and corrective actions, and request release from impoundment.	
14	Impoundment release authority clears or directs the impoundment be cleared in the applicable aircraft or equipment forms.	

7.2.2. The MXG/CC and MXG/Deputy Commander (CD) (or equivalents) are the Impoundment Release Authorities. **(T-1).**

7.2.2.1. In the event of a dual MXG/CC and CD absence, the MXG/CC or CD will appoint an individual in writing as the designated Impoundment Release Authority for the period of the dual absence. **(T-1).**

7.2.2.2. **(Added-AFMC)** The MXG/CC or CD will appoint an individual in writing as the designated Impoundment release authority at deployed location(s) under their control. The owning MXG/CC, MXG/CD, or equivalent, is the impoundment release authority for aircraft transiting to enroute locations. (T-2).

7.2.3. The Impoundment Release Authority determines the need for a one-time flight and will coordinate appropriate authorization IAW TO 00-20-1. **(T-1).**

7.2.4. **(Added-AFMC)** Impoundments may be transferred from an aerospace vehicle and/or an equipment item to a sub-component once the sub-component is removed (engine, gun

system, etc. determined to be causal for asset impoundment and is removed from the aircraft).

7.2.5. **(Added-AFMC)** Units will ensure procedures are developed to address the following impoundment program requirements:

7.2.5.1. **(Added-AFMC)** Procedures to safeguard CVR/FDR data upon aircraft impoundment for potential safety related incidents. **(T-2).**

7.3. Impoundment Authorities.

7.3.1. Impoundment Authorities are designated by the MXG/CC (or equivalent) and will be tracked on the SCR. **(T-1).** Impoundment Authorities will:

7.3.1.1. Select the Impoundment Official. **(T-2).**

7.3.1.2. Determine if impoundment is warranted when:

7.3.1.2.1. An aircraft landing gear fails to extend or retract due to an unknown condition. **(T-1).**

7.3.1.2.2. The aircraft has been confirmed as being contaminated with chemical, biological, or radiological materials. **(T-1).**

7.3.1.2.3. An aircraft sustains FO damage from an unknown cause. **(T-1).**

7.4. Impoundment Official Responsibilities. The Impoundment Official is designated as the single POC for impounded aircraft or equipment and will hold the minimum rank of MSgt. **(T-1).** The Impoundment Official will:

7.4. (AFMC)Impoundment Official Responsibilities. QA will act as a technical advisor to the impoundment official for group impoundment procedures. **(T-2)** The Impoundment Official will:

7.4.1. Be responsible for controlling and monitoring the investigation of impounded aircraft or equipment. **(T-1).**

7.4.2. Use established checklists to guide the sequence of actions. **(T-1).**

7.4.3. Control and track access of personnel to impounded aircraft or equipment. **(T-1).**

7.5. Mandatory Impoundments. Aircraft and/or equipment will be impounded:

7.5.1. When the Impoundment Authority determines extraordinary measures are required to address any degradation of aircraft airworthiness or serious aircraft/equipment anomaly. **(T-1).**

7.5.2. Following an aircraft ground or flight-related mishap as defined in AFI 91-204 and AFMAN 91-223, *Aviation Safety Investigations and Reports*. **(T-1).**

7.5.3. When support equipment is known or suspected to have been a factor in a mishap or may have contributed to injuries. **(T-1).**

7.5.4. Following an uncommanded flight control movement. **(T-1).** Following impoundment for uncommanded flight control movement, the MXG/CC and OG/CC will determine the need for an FCF/OCF. **(T-1)**.

7.5.5. Following an inadvertent ordnance release or explosive mishap. **(T-1).**

7.5.6. 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. **(T-1).**

7.5.7. Following aircraft engine anomalies to include but not limited to:

7.5.7.1. Unselected propeller reversal. **(T-1).**

7.5.7.2. Flameout/stagnation (for single engine aircraft). **(T-1).**

7.5.7.3. Unselected power reversal. **(T-1).**

7.5.7.4. Engine case penetrations, ruptures, or burn-through from an internal engine component. **(T-1).**

7.5.7.5. When an aircraft experiences a loss of thrust sufficient to prevent maintaining level flight at a safe altitude. **(T-1).** This includes all cases of multiple engine power loss or roll back.

7.5.7.6. Engine damage due to a foreign object and source of FO is determined to be internal to the engine. **(T-1).**

7.5.7.7. Engine damage which occurs during transport. **(T-1).**

7.5.8. Following an in-flight fire. **(T-1).**

7.5.9. When an aircraft experiences an in-flight loss of all pitot-static system instruments or all gyro stabilized attitude or direction indicators. **(T-1).**

7.5.10. When there is evidence of intentional damage, tampering, or sabotage. **(T-1).**

7.5.11. When physiological incidents attributable to aircraft systems or cargo occur. **(T-1).**

7.6. Impoundment Procedures.

7.6.1. When the Impoundment Authority directs impoundment, a Red X symbol will be placed in the applicable AFTO Form 781A for aircraft, applicable engine work packages for uninstalled engines or AFTO Form 244 for equipment (or electronic form equivalents) with a statement indicating the reason for impoundment and the name of the assigned Impoundment Official. **(T-1).**

7.6.2. The MOC will be notified when an impoundment decision has been made. **(T-1).**

7.6.2. **(AFMC)** MOC/PS&D will track impounded aircraft by JCN using the Julian date followed by 5326-5330. Use the work unit code/Ref Des of the specific item that caused the impoundment. **(T-2).**

7.6.3. Aircraft or equipment records will be controlled at the discretion of the Impoundment Official. **(T-1).** When required, the Impoundment Official will:

7.6.3.1. Obtain and secure the current aircraft forms and the aircraft jacket file for aircraft, applicable engine work packages for uninstalled engines, or the AFTO Form 244 for equipment (or electronic form equivalents). **(T-1).**

7.6.3.2. Notify the MIS DBM administrator to isolate the aircraft or equipment serial number in order to prevent any changes and maintain the integrity of the historical data until the aircraft or equipment is released. **(T-1).**

7.6.3.3. Request and collect any training records, required to complete the impoundment investigation. **(T-1).**

7.6.3.4. On aircraft impounded for potential safety related incidents, ensure the Cockpit Voice Recorder (CVR)/Flight Data Recorder (FDR) circuit breakers are pulled immediately after engine shutdown or before applying external power to safeguard CVR/FDR data, if equipped. **(T-1).**

7.6.3.5. Ensure impounded aircraft/equipment is identified by cordon with cones, ropes or placards indicating impound condition and aircraft location. **(T-1).**

7.6.4. Impoundment Official will limit maintenance actions on impounded aircraft or equipment until the cause is determined. **(T-1).**

7.6.4.1. The Impoundment Official will determine what maintenance can be performed in conjunction with the maintenance required to release the aircraft or equipment from impoundment. **(T-1).**

7.6.4.2. Parts removed from impounded aircraft or equipment will be carefully controlled. **(T-2).** This is to ensure that parts, once confirmed as the cause for impoundment, are available to be processed as DR exhibits.

7.6.5. The Impoundment Official will select a team of qualified technicians dedicated to determine the cause of the problem that led to the impoundment. **(T-1).**

7.6.5.1. Impoundment team members will be relieved of all other duties until released by the Impoundment Official (N/A to ARC). **(T-2).**

7.6.6. Once the cause of the malfunction or failure has been positively determined, the Impoundment Official will brief the Impoundment Release Authority on findings, corrective actions, and requests release of the aircraft or equipment from impoundment. **(T-1).**

7.6.7. If the cause of the discrepancy could potentially affect other aircraft or equipment in the fleet, QA will provide cross-tell information for up-channeling to the MAJCOM and the designated Lead Command IAW AFPD 10-9. **(T-1).**

7.6.8. Clear impoundments from forms/MIS IAW TO 00-20-1. **(T-1).**

7.6.9. If the cause of a reported malfunction cannot be determined or a positive corrective action cannot be confirmed, the Impoundment Release Authority will determine if further actions are required (e.g., requesting depot assistance, further troubleshooting, FCF/OCF). **(T-2).**

7.6.10. MAJCOMs will publish guidance outlining impoundment and release procedures for transient aircraft.

7.6.10. **(AFMC)** See AFMC Sup para 7.6.10.2.

7.6.10.1. At locations where no MXG/CC or designated representative is available, the aircraft assigned MXG/CC may temporarily delegate Impoundment and Release Authority to the deployed Maintenance Supervisor.

7.6.10.2. **(Added-AFMC)** Unit QA will ensure development of a local operating instruction to include, procedures for off-station aircraft impoundment while transient, home station notification, release officials, forms entries, appointment and

responsibilities of impoundment investigating officials, special handling or tagging of parts from impounded items sent through the repair cycle and conducting impoundment investigations across organizations. **(T-2).**

7.7. Rules of Impoundment Specifically for Explosive-Related Events/Mishaps. When an inadvertent release or an explosive mishap is reported, the following procedures will apply:

7.7.1. In-flight:

7.7.1.1. When the involved aircraft returns to the de-arm or parking area, the aircraft will be impounded. **(T-1).** Limit maintenance actions to those required to make the aircraft safe.

7.7.1.2. The MXG/CC, MOC, Munitions Control, WWM, QA and Wing Safety will be notified of the impoundment action. **(T-1).**

7.7.1.3. The aircraft with unsafe munitions will be parked and isolated in an area approved by the weapons safety office and airfield management. **(T-1).**

7.7.1.4. Investigate and report the incident IAW AFI 91-204. **(T-1).**

7.7.2. Ground:

7.7.2.1. The senior ground crew member will be in charge of the aircraft or equipment until relieved and will ensure involved persons remain at the scene. **(T-2).**

7.7.2.2. Protect other aircraft or equipment located near the incident if an explosive hazard exists. **(T-1).**

7.7.2.3. Do not change the position of any switches except as needed for safety. **(T-1).**

7.7.2.4. Limit maintenance actions to those actions required to make the aircraft or equipment safe. **(T-1).**

7.7.3. Preserve mishap evidence to the maximum extent possible. **(T-1).** An example would be segregating an aircraft gun versus destroying it if it poses no immediate danger. This allows for evaluation of all the evidence and the ability to recreate the mishap conditions.

7.7.4. If an incident, malfunction, or mishap is suspected to have occurred or caused by in-use, installed, or otherwise configured munition (live or inert), or a 20 or 30MM gun system jam creating a safety condition, notify the Global Ammunition Control Point (GACP) Air Force Life Cycle Management Center, Munition Division (AFLCMC/EBH) Munitions Rapid Response Team (MRRT): DSN: 777-4865; COMM: (801) 777-5155 and the MAJCOM munitions staff. **(T-1).**

7.7.4.1. Refer to AFI 91-202 for additional information about the MRRT team. **Note:** The MRRT team can also provide units technical assistance in resolving recurring 20 or 30MM gun system jams and malfunction isolation.

7.7.5. For impoundments involving nuclear loaded weapon systems (see **paragraph 7.5.6** of this instruction) also follow applicable requirements/criteria outlined in AFI 91-107. **(T-1).**

Chapter 8

TOOL AND EQUIPMENT MANAGEMENT

8.1. 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. To ensure standardization among maintenance units, commanders and key leaders are responsible for executing an effective tool program. MAJCOMs will identify small unique unit tool and equipment management requirements in a supplement, addendum or deviation as described in the purpose statement of this AFI. DFT/CFT will adhere to local tool control policies and procedures provided in the MXG/MO in-brief (see **paragraph 5.2.1.9** of this instruction) when working on aerospace equipment possessed by the unit. **Note:** For the purpose of this instruction Tool Accountability System (TAS) is the generic term used to describe a computer program/software that provides inventory control over CTK/tool room content and not the AF Tool Accountability System formerly referred to in this AFI.

8.1. (AFMC)Small unique units designated as NSOs will: Follow guidance in AFI 21-101 AFMC Sup Addendum A.

8.2. Guidelines for Program Management. Wings will document procedures for the control and management of all tools/equipment used for aircraft/aerospace equipment maintenance or which enter the flightline or aerospace equipment maintenance industrial areas, to include all wing organization's (e.g. Hospital, CE, vehicle Mx, Security Forces, etc.), to provide mission support in a wing level publication IAW AFI 33-360. **(T-1).** The MXG/CC, or equivalent, is the OPR for development of this publication and will coordinate with all wing organizations that work in, or enter, the above mentioned areas to ensure they have established tool/equipment control procedures documented in the wing publication. **(T-1).** As a minimum, guidance will address the following:

8.2. (AFMC)Units will use the Blanket Purchasing Agreement (BPA) for acquiring tools. https://org.eis.afmc.af.mil/sites/HQAFMCA4/A4M/Hand_Tools/ (T-2).

8.2.1. Standardized procedures for security, control, and accountability of tools and equipment. **(T-1).**

8.2.1.1. Chits are not authorized.

8.2.1.2. **(Added-AFMC)** Include standardized procedures for clecos. **(T-2).**

8.2.2. Inventory requirements. **(T-1).** As a minimum, units will conduct and document an annual inventory of all tools and equipment. **(T-1).**

8.2.3. Procedures for warranted tool management. **(T-1).**

8.2.3. **(AFMC)** Warranty/Quality Tool Program. The purpose of the warranty/quality tool program is to ensure high quality; industrial-strength warranted tools are available for use in aircraft and equipment activities. Warranty tools will be purchased using the BPA or through local contracts with a warranty tool vendor. Units desiring to establish a warranty tool program must coordinate their program through both the supply and contracting squadrons.

Detailed management procedures are contained in AFI 23-101. **(T-2)** The following general guidelines apply:

8.2.3.1. Procedures to tag/segregate unserviceable warranty tools will be addressed in the local wing publication. **(T-1).**

8.2.3.2. **(Added-AFMC)** Procedures for etching/de-etching of tools. Ensure method does not void warranty. **(T-2).**

8.2.3.3. **(Added-AFMC)** Office responsible for maintaining replacement tools (if applicable) and number of tools stocked. **(T-2).**

8.2.4. Procedures for control and management of replacement, expendable and consumable hand tools, HAZMATs, and other items contained in CTKs. **(T-1).**

8.2.5. Procedures for transfer of tools/CTKs at the job site (on-site transfers). **(T-1).**

8.2.5.1. Ensure tool accountability and control is maintained when transfer occurs between the individuals. As a minimum the individuals involved in the transfer will accomplish a joint inventory and document accordingly. **(T-1).**

8.2.6. Procedures for lost or missing tools. **(T-1).**

8.2.6.1. **(Added-AFMC)** Procedures for aircraft that have already taxied or are flying when tools, equipment, TOs, or any object is lost and was used on the aircraft. **(T-2).**

8.2.7. Assignment of Equipment Identification Designators (EID) for CTKs, non-CA/CRL equipment, and assignment of CTK numbers for tools. **(T-1).**

8.2.8. Procedures for issue, marking, and control of PPE, tools or equipment (e.g., hearing protectors, reflective belts, headsets, etc.) assigned/issued to individuals. **(T-1).**

8.2.8. **(AFMC)** At a minimum, these markings will identify the individual. **(T-2).**

8.2.9. Procedures to ensure positive accountability and control of rags. **(T-1).**

8.2.9.1. 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.

8.2.9.1.1. Cheesecloth is considered a rag; however, paper products/paper towels are not considered rags.

8.2.9.1.1. **(AFMC)** Procedures if paper product is used, identify if and when they will be controlled. **(T-2).**

8.2.9.2. Rags should be uniform in size and color.

8.2.9.3. Marking or identifying each shop rag with a CTK number is not necessary.

8.2.10. Procedures to limit numbers of personnel authorized to procure tools. **(T-1).**

8.2.11. Procedures for control of locally manufactured or developed tools and equipment. **(T-1).**

8.2.12. Procedures for FSRs/DFTs/CFTs when working on equipment within the unit. **(T-1).**

8.2.13. Standardized procedures and responsibilities for decentralizing CTKs, tools, and equipment outside tool room/support section to meet mission requirements. **(T-1).**

8.2.13.1. Inventory and accountability requirements described in this AFI apply equally to all decentralized CTKs tools, and equipment. **(T-1).**

8.2.14. Procedures for control of response equipment permanently stored/located in trailers or vehicles. **(T-1).**

8.2.15. Procedures for requiring a second party or on-duty supervisor inspection of CTKs when conditions warrant a single person shift. **(T-1).**

8.2.15.1. The same individual that signs out a CTK cannot sign it back in. **(T-1).**

8.2.16. Procedures for controlled access to tool rooms. **(T-1).**

8.2.17. **(Added-AFMC)** Procedures for long term tool kit (CTK) storage. **(T-2).**

8.2.18. **(Added-AFMC)** Procedures for control of equipment issued/dispatched to work areas. **(T-2).**

8.2.19. **(Added-AFMC)** Procedures for control of shop machine accessories/attachments. **(T-2).**

8.2.20. **(Added-AFMC)** Procedures for control of tooling included in TCTO/Mod Kits. **(T-2).**

8.2.21. **(Added-AFMC)** Procedures for loaned tools to include issue, tracking, duration, and verification. **(T-2).**

8.2.22. **(Added-AFMC)** Procedures for training personnel on tool control and accountability measures. **(T-2).**

8.3. General Program Guidelines.

8.3.1. The Flight CC/Chief will designate CTK custodians in writing. **(T-1).**

8.3.1.1. CTK custodians are responsible for tool, HAZMAT, and consumable asset accountability and control. **Exception:** A separate person may be designated as the HAZMAT monitor.

8.3.2. Flight CC/Chiefs and/or Section NCOICs/Chiefs (or equivalents) will determine the type, size, contents and number of CTKs required for their work centers. **(T-1)**.

8.3.2.1. The WWM will make this determination for load crew CTKs, when assigned. **(T-1).**

8.3.2.2. **(Added-AFMC)** Consider deployment tasking's, TDYs, and special test project requirements when making CTK determinations. Ensure user input is considered when determining quantity, content and layout of tool kits. **(T-2).**

8.3.3. Design CTKs to provide for quick inventory and accountability of tools. CTKs and tools will be clearly marked with the EID (follow guidance below). **(T-1).**

8.3.3.1. **(Added-AFMC)** If a tool is to be permanently removed from a CTK/TK ensure any previously assigned World Wide Identification (WWID) markings are de-etched (reference warranty procedures if applicable). **(T-2).**

8.3.4. CTK contents will be standardized to the maximum extent possible within functional elements of a squadron that have similar missions (e.g., aircraft flights/sections and Combat Armament Support Team (CAST)s). **(T-1).**

8.3.5. Each tool, item of equipment, or consumable contained in a CTK will have an assigned location identified either by inlay cuts in the shape of the item, shadowed layout, label, or silhouette. **(T-1).**

8.3.5.1. No more than one item will be stored in a cutout, shadow, or silhouette except for tools issued in sets such as drill bits, allen wrenches, apexes, or paired items (e.g., gloves, booties). **(T-1).**

8.3.6. A Master Inventory List (MIL) will be required for each CTK or series of identical CTKs. **(T-1).**

8.3.6. **(AFMC)** Tools will be described on the MIL to accurately depict the actual size or type to ensure positive tool control, i.e. screwdriver, common, 6 inches; socket, 3/8 drive X 5/8. Flight/section chiefs or equivalent will ensure MIL is updated, approved and signed at least annually. **(T-2*)*.** Flight commanders/flight chiefs or equivalent must review and sign the MIL. For weapons load crew CTKs, the WWM will approve and sign the MIL. A copy of the MIL will also remain in each CTK/equipment kit at all times for inventory purposes. **(T-2).**

8.3.6.1. The WWM will approve/sign a single MIL to be used as the standard for all Load Crew CTKs on like mission-design-series aircraft; a copy will be maintained in each support section. **(T-1).**

8.3.6.2. When items such as dispatchable support equipment or dispatchable special tools are issued separately and contain multiple parts, an inventory of the multiple items must be provided with the equipment or special tools. **(T-1).**

8.3.6.3. When a TAS is used, the MIL resides in the TAS, but a hard copy of the MIL must reside with each dispatchable CTK. **(T-1).**

8.3.6.4. If identification tags or dust caps are attached to tools/equipment, they will be secured in a manner that will preclude any possibility of FOD. **(T-1).**

8.3.6.4.1. Items not permanently attached, will be marked/etched with the appropriate CTK number. **(T-1).**

8.3.6.4.2. All items will be listed on the MIL. **(T-1).**

8.3.6.5. Consumables may be placed in CTKs. If so, they will be identified on the MIL as consumables. **(T-1).** Examples of consumables include; safety wire, adhesive, wire bundle lacing, solder, etc.

8.3.6.5.1. Do not include common hardware items such as bolts, nuts, and/or screws unless they are required as tools.

8.3.6.5.2. **(Added-AFMC)** If not using the MIL or TAS to document missing/removed tools then use AFMC Form 61, *Missing/Removed Tools and Equipment*, to annotate missing/removed tools. **(T-2).**

8.3.6.6. Tool sets will be identified on the MIL by total number of items in the set (e.g., allen wrench set - 9 each allen wrenches + container for a total of 10). **(T-1).**

8.3.6.7. Missing, removed and/or broken tools/items will be documented in the TAS if they cannot be replaced immediately. **(T-1).**

8.3.6.7.1. In addition, for dispatchable CTKs, dispatchable support equipment, and dispatchable special tools containing multiple parts, missing, removed and/or broken tools/items will be documented on a MAJCOM/locally generated form, or on the hard copy MIL. **(T-1).**

8.3.6.7.1.1. If a MAJCOM/locally generated form is used, the form will be kept with each dispatchable CTK, dispatchable support equipment and dispatchable special tools. **(T-1).**

8.3.6.7.1.2. Pencil/pen may be used for hard copy MIL documentation and erased/lined through when cleared.

8.3.6.7.2. The EID will be removed from any permanently removed item/tool. **(T-1)**.

8.3.6.7.3. A permanently removed (without planned replacement) item/tool constitutes a change to the inventory and requires a new MIL.

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

8.3.7. Equipment and accessories that do not present a FOD potential and will not leave the work center, support section, or tool room, need not be included in a CTK; however, this equipment must have designated storage locations established. **(T-1).**

8.3.7.1. Designated locations may be work areas or stations.

8.3.8. The CTK Custodian will establish designated locations for test equipment and common accessories (e.g., waveguides, attenuators, fittings, cables, adapters) that are not part of a CTK. **(T-1).**

8.3.8.1. As a minimum, designated locations will be labeled to identify the contents. **(T-1)**.

8.3.8.2. Industrial shop machinery accessories/attachments (e.g., blades, arbors, chucks, gears) need not be controlled as tools; however, these items will be maintained in designated storage locations for accountability. **(T-1).**

8.3.8.2.1. As a minimum, storage cabinets/drawers will be labeled to identify the contents. **(T-1).**

8.3.9. Tools/expendable items used for titanium engine blade blending or oxygen system maintenance will be kept in special purpose kits separate from other tools. **(T-1).**

8.3.9.1. In addition to normal CTK identification, the titanium engine blade blending kits will be marked “For Titanium Engine Blade Blending Only”. **(T-1).**

8.3.9.2. In addition to normal CTK identification, oxygen system maintenance kits will be marked “For Oxygen System Use Only”. **(T-1).**

8.3.10. Discard removable (e.g., slide on) pocket clips and spare parts from tools when possible (flashlights, continuity testers, small screwdrivers, etc.) prior to placement in tool kits. **(T-1).**

8.3.10.1. Do not disassemble/damage tools for sole purpose of removing clips (e.g., tape measures, rubber switch guards, etc.).

8.3.11. Tools not controlled through CTK procedures are NOT authorized on the flightline, or in any maintenance area (e.g., personal Mini Maglite® flashlights, Leatherman®, Buck Knives®, etc.). **(T-1).**

8.3.11.1. Personally-purchased tools are not authorized. **(T-1).**

8.3.12. Flashlights, lanterns, portable lighting devices and light sources will conform to the requirements of TO 00-25-172 when used during servicing operations; TO 1-1-3 when used during fuel cell maintenance; and AFMAN 91-201 when used in explosive environments. **(T-1). Note:** Aircraft and equipment TOs may dictate additional restrictions.

8.3.13. **(Added-AFMC)** Tool Replacement Procedures. A stock of spare tools is authorized to replace broken, worn, or missing tools to prevent unnecessary work delays. Spare and consumable tools are highly pilferable and pose an increased fraud, waste, and abuse potential. **(T-2)** MXG/CC (MXW/CC or equivalent functional authority for maintenance) will establish strict controls to include the following:

8.3.13.1. **(Added-AFMC)** Inventory and document all replacement tools quarterly. **(T-2).**

8.3.13.2. **(Added-AFMC)** Replacement tools will not be issued until the receipt of the unserviceable tool or AFMC Form 310 has been received. **(T-2).**

8.3.13.3. **(Added-AFMC)** Replacement tools must be marked with the CTK WWID prior to issue. **(T-2).**

8.3.13.4. **(Added-AFMC)** If previously issued serviceable tools are to be used as replacement tools, completely de-etch any prior assigned markings before placing in spare tools storage. **(T-2).**

8.4. TMDE Management Guidelines. Support Sections will designate a TMDE Monitor who will act as the focal point for managing the TMDE calibrations requirements for the owning work center. **(T-1).** The TMDE Monitor will:

8.4.1. Establish procedures for turn-in and pick-up of TMDE requiring calibration. **(T-3).**

8.4.2. Coordinate emergency calibration requirements. **(T-3).**

8.4.3. Review quarterly TMDE schedules and annual master ID lists within 5 duty days of receipt from servicing PMEL. **(T-3).**

8.4.3.1. Forward any corrections to the servicing PMEL within 3 duty days to have the PAMS/MIS updated. **(T-3).**

8.4.4. Take necessary actions to minimize the late delivery of TMDE for scheduled calibration. **(T-3).** Servicing PMEL will notify OWC of overdue TMDE under established procedures. **(T-3).**

8.4.5. Use PAMS or equivalent MIS (as coordinated with supporting PMEL) to control TMDE processed for maintenance. **(T-3).**

8.4.6. Ensure TMDE submitted for calibration has all required documentation complete, the AFTO Form 350 (as applicable) provides adequate malfunction description and accessories/items required for calibration accompany the TMDE to include batteries (as applicable). **(T-1).**

8.4.7. Ensure classified TMDE is protected IAW AFI 31-401. **(T-1).**

8.4.8. Ensure TMDE shipped off base for calibration or repair and return is shipped by traceable means and IAW AFI 24-203. **(T-1).**

8.4.8.1. The TMDE Monitor will maintain a file consisting of all supporting documentation for each type of shipment. **(T-1).**

8.4.8.2. Safeguard any IUID marks during calibration/TMDE activities to the extent possible. In the event the UII is damaged during calibration activities, the TMDE Monitor will notify the responsible Equipment Custodian and/or EAE to replace the mark with the same UII. **(T-1).**

8.4.9. For deployment purposes, ensure equipment, tools, and HAZMAT items are properly identified, prepared, and documented IAW AFI 10-403. **(T-1).**

8.5. Tool Accountability. Flight CC/Chiefs and Section NCOICs/Chiefs, through CTK Custodians, are responsible for tool and equipment accountability and control (knowing where tools are and who has responsibility for them). When a person signs for a tool or piece of equipment, they are accountable for the item until it is returned to the tool room and accountability transfers back to the CTK Custodian (through a representative or tool room employee).

8.5.1. All units must use a MAJCOM-approved TAS for accountability and control of tools and equipment. **(T-1).** Contractors and MEOs are not required to use the MAJCOM-approved TAS unless specified in the Performance Work Statement/Statement of Work. **Note:** AFE Sections follow instructions given in AFI 11-301, Volume 1, *Aircrew Flight Equipment (AFE) Program*.

8.5.1.1. Units are required to electronically back up their respective TAS database at least once a month. **(T-1).**

8.5.1.1.1. This backup must be kept physically and electrically separate from the computer that houses the tool control database. **(T-1).**

8.5.1.2. Units will use a TAS to:

8.5.1.2.1. Track the issuance and receipt of all assigned tools, equipment, tool kits, HAZMAT items, TOs (does not apply to TOs, equipment and HAZMAT kept in a shop and not dispatched). **(T-1).**

8.5.1.2.1.1. HAZMAT items issued for one time use (oil cans, hydraulic cans, mixing compounds) are supply items and do not have to be tracked in the TAS. However, HAZMAT and supply procedures need to be followed.

8.5.1.2.2. Track authorizations/restrictions for special tools/equipment (by individual). **(T-1).**

8.5.1.2.3. Track CTK and Support Section inspections. **(T-1).**

8.5.1.2.4. Track spare, lost, damaged, and/or removed tools. **(T-1).**

8.5.1.2.5. Develop and manage tool/equipment inventories. **(T-1).**

8.5.1.2.6. Develop and manage deployment kits (import/export). **(T-1).**

8.5.1.3. If the TAS is not available (such as at a deployed location), units will use the AF Form 1297, *Temporary Issue Receipt*, a MAJCOM, or locally approved form for accountability and control of CTKs, equipment, and tools. **(T-1).**

8.5.1.3. **(AFMC)** If an automated system is not available, units may use AFMC Form 62, *CTK Inventory and Control Log*, to sign in and out CTKs/TKs and use AFMC Form 61 to document Missing/Removed tools. **(T-2).**

8.5.1.4. Units using the AF legacy TAS that experience problems should contact the AFMC, AFLCMC/HICA at DSN 596-5771/Comm (334) 416-5771 for assistance. Units utilizing other authorized tool control system (e.g. TC-Max) contact the applicable system support activity for assistance.

8.5.2. The CTK Shift Supervisor will account for all dispatchable/decentralized CTKs, tools, and equipment at the beginning and end of each shift. **(T-1).**

8.5.2. **(AFMC)** If an automated system is not available, units may use AFMC Form 62 or computer generated equivalent to document separate shift inventories. **(T-2).**

8.5.2.1. Shift inventories must be documented by both outgoing and incoming personnel. **(T-1).**

8.5.2.2. CTKs present during tool room shift inventories do not need to be opened for inventory.

8.5.3. Users will perform a visual inventory of all dispatchable/decentralized CTKs when issued for use, at the completion of each job or tasks, and when returned to the tool storage facility. **(T-1).**

8.5.3.1. Users will accomplish a CTK inventory prior to operation of any aircraft or equipment when maintenance actions are performed (e.g., engine run, landing gear retraction, flight control operational checks). **(T-1).**

8.5.3.2. Users will perform an immediate and complete inventory of all CTKs when returning to the work area after sheltering for real-world/exercise events. **(T-1).**

8.5.4. At least annually or when the CTK Custodian changes, conduct a comprehensive inventory of all dispatchable/decentralized tools, non-CA/CRL equipment, and CTKs. **(T-1).**

8.5.4.1. The purpose of this inventory is to perform an extensive inspection of all tools and non-CA/CRL equipment, to include condition, identification markings, and accuracy of the MIL/CRL Supplemental Listing.

8.5.4.2. CTK Custodians will ensure all tools are inspected for serviceability IAW TO 32-1-101, *Use and Care of Hand Tools and Measuring Tools*. **(T-1).**

8.5.4.3. CTK Custodians will document these inventories and maintain the most current inventory. **(T-1).**

8.5.5. Electronic Tools (eTools). eTools (desktop and laptop computers, hand held devices, Portable Maintenance Aids (PMA), etc.) are common infrastructure which allow access to electronic TO files, logistics information systems, update TOs, provide automated change requests (similar to AFTO Form 22) and integrate with other MIS. Units will:

8.5.5.1. Manage eTools IAW TO 00-5-1. **(T-1).**

8.5.5.2. Track dispatchable eTools in the TAS. **(T-1).**

8.5.5.3. Ensure only serviceable eTools with current technical data are available for checkout, and any missing plugs/covers/doors are documented IAW **paragraph** 8.3.6.7. of this instruction. **(T-1).**

8.5.5.4. Make maximum use of eTool warranties. **(T-1).**

8.5.5.5. Ensure eTools are used for official and authorized purposes only IAW AFI 33-115. **(T-1).**

8.5.5.6. Establish procedures for shipping TOs, eTools, and associated support equipment with eTools to support mobility requirements. **(T-1)**.

8.5.6. If applicable, units will update Defense Integration and Management of Nuclear Data Services (DIAMONDS) hardware and status IAW TO 11N-3150-8-1, *USAF DIAMONDS Policy and Procedures*. **(T-1).**

8.5.6.1. For accountability, DIAMONDS laptops and hardware must be managed and tracked in the TAS, but do not require placement on unit equipment account IAW TO 11N-3150-8-1. **(T-1).**

8.5.7. Tools which are accountable on a CA/CRL must be marked with a UII. **(T-1).** Units need to safeguard any IUID marks. In the event the UII is damaged, notify the responsible Equipment Custodian and/or EAE to replace the mark with the same UII.

8.6. Tool and Equipment Marking and Identification.

8.6.1. To ensure tool rooms have unique identifiers, wings (or equivalent) must ensure other units within the same wing or PAS code do not duplicate the WWID. **(T-1).** All units must mark their tools and equipment with the standard EID. **(T-1).** Geographically separated units may use the parent wing EID. Replacement spare tools stored in the tool crib do not need to be etched until placement in a specific CTK.8.6.1.1. The EID will consist of nine characters (numbers/letters) of which the first four characters will be a unique World Wide Identification (WWID) code (assigned by AF Directorate of Logistics, Maintenance Division, (AF/A4LM)). **(T-1).**

8.6.1.1.1. The WWID identifies the base (first and second character), unit (third character), and shop (fourth character). The remaining five characters are available for tool/CTK equipment numbering.

8.6.1.1.1.1. The first two characters of the WWID in the EID are based on the wing's/unit's Personnel Assignment System (PAS) base code. Multiple wings (or equivalent) at the same base (i.e., ANG, AFRC, and RegAF) must have different WWID codes. **(T-1).**

8.6.1.1.1.2. The third and fourth characters designate the unit and shop by using

unique/distinguishable characters. To ensure tool rooms have unique identifiers, wings (or equivalent) must ensure other units within the same wing or PAS code do not duplicate the first 4 characters of the EID. **(T-1).**

8.6.1.1.2. Request additional "base" codes from AF/A4LM at **usaf.pentagon.af-a4.mbx.a4lm-m-maintenance-policy@mail.mil,** DSN 222-2342/2343.

8.6.1.2. The unit will establish the remaining five characters (any combination of numbers/letters) for CTKs, tools, and dispatchable equipment identification. **(T-1).**

8.6.1.3. Units must place the 9-digit EID on all CTKs, tools not assigned to a box, and dispatchable equipment that is of sufficient size. **(T-1).**

8.6.1.3.1. The 9-digit EID must be placed on the outside of dispatchable CTKs. **(T-1).**

8.6.1.3.2. Tools located inside the tool box may be marked with less than 9-digits but must contain the 4-digit WWID and will have identifying character(s) that ties the tool back to the CTK. **(T-1).** For example, tools inside an assigned dispatchable CTK "U6JG00001" may be marked "U6JG1." Units may affix non-metallic bar code labels on tools to prevent re-etching as long as the use of the tool and its work environment does not normally result in excessive damage to the label making it unreadable.

8.6.1.3.3. Tools will be marked with the most current EID. **(T-1).**

8.6.1.3.4. All previous CTK identifiers will either be removed or marked out (this does not include PMEL markings). **(T-1).**

8.6.1.3.5. Small tools and/or items that cannot be marked as described above (such as drill bits, allen wrenches in sets, apexes, etc.) will be maintained in a container marked with the EID and an identifying character(s) that ties the tool back to the CTK along with the number of tools contained. **(T-1).**

8.6.1.3.5.1. The container is counted as one of the items.

8.6.1.4. MXG/CCs may require use of the EID in addition to AFTO Form 66 for TMDE routinely (i.e., once per week) dispatched from a work center or use of the AFTO Form 66 alone.

8.6.1.5. For items that physically or mechanically check tolerances that require calibration, do not etch, or stamp an EID in any manner that will affect calibration or the ability to calibrate. **(T-1).**

8.6.1.5.1. If marking is in question consult TO 00-20-14 and/or PMEL to validate applicable marking criteria.

8.6.2. Permanently mark (by etching or other means) grease guns, dispensing cans, spray bottles, pump oilers, and similar containers with the type of grease, fluid, or other liquids and MILSPEC of the contents. **(T-1).**

8.6.2.1. If no MILSPEC exists, the item will be marked with the manufacturer's name, part number/NSN from the applicable Material Safety Data Sheet (MSDS). **(T-1). Note:**

SDSs will replace MSDSs by 1 June 2015. References in this document to "MSDS" apply to both MSDS and SDS.

8.6.2.2. Keep hoses and fittings separate for each type of grease. **(T-1).**

8.6.2.3. If containers are used to hold or apply substances classified as hazardous materials, ensure labeling requirements are IAW AFI 90-821, *Hazard Communication*, 29 CFR 1910.1200(f), *Occupational Safety and Health Standards, Toxic and Hazardous Substances*. **(T-0).**

8.6.3. Prior to etching tools and equipment, consult applicable technical order to ensure no special circumstances apply for the item being etched (e.g. fiberglass handled hammers are etched IAW TO 32-1-101 and safety glasses are etched IAW AFI 91-203). **(T-1).**

8.6.4. CTKs, tools, and dispatchable equipment that may possess a unique serial/tracking number must be marked with an EID number. **(T-1).**

8.6.4.1. If the item cannot be marked, etched, or stamped, annotate the additional designator on the CTK contents list. **(T-1).**

8.6.5. Items that are assembled and are not intended to be disassembled during use, require only one mark/etch/stamp and one entry in the MIL (e.g., scribes, flashlights, grease guns, feeler gauges). **(T-1).**

8.6.6. Remove the EID from unserviceable tools and tools removed from the CTK (with the exception of warranty tools where removal of EID would void the tool warranty) and update the TAS and the MAJCOM/locally generated form or hard copy MIL accordingly. **(T-1).**

8.7. Locally Manufactured, Developed, or Modified Tools and Equipment. All locally manufactured, developed, or modified tools and equipment used on aerospace equipment must be approved by the MXG/CC, their equivalent, or a designated representative. **(T-1).**

8.7.1. This procedure does not apply to local manufacture, modification or design of tools authorized in specific technical data. QA will coordinate on all requests for approval and use of locally designed tools or equipment. **(T-1).**

8.7.2. Work centers will review items and requirements every two years for applicability and current configuration. **(T-1).** See **Chapter 6** and **Chapter 9** of this instruction for additional guidance.

8.7.3. Weapons loading, maintenance and armament systems locally-designed equipment must be coordinated through the WWM. **(T-1).** Weapons loading, maintenance and armament systems locally-designed equipment must meet the following requirements:

8.7.3.1. In the event munitions/armament LME, is not included in technical data or listed on the MMHE Focal Point web site (**https://cs1.eis.af.mil/sites/MMHEFP/SitePages/Home.aspx**), contact the MMHE Focal Point AFLCMC/EBDW, 615 Apalachicola Road, Suite 101, Eglin AFB, FL 32542-6845 to establish/validate LME disposition.

8.7.3.1.1. Units must use MMHE Focal Point-designed munitions/armament LME for new procurements if a design exists and fills the requirement. **(T-1).**

8.7.3.1.1.1. Munitions/armament LME is specialized equipment designed to

interface with or support munitions or armament suspension equipment (e.g., tools, handling dollies, storage racks, maintenance stands, transport adapters). All munitions/armament LME contained on the MMHE Focal Point web site meets applicable AFI 91-203 AFOSH, explosive safety, and USAF standards, and is approved for local manufacture and use at unit level AF-wide. Drawing packages for these items are available to the unit via the MMHE Focal Point web site.

8.7.3.1.1.2. Munitions/armament LME specifically designed to interface with or support munitions that are not contained in technical data or on the MMHE Focal Point web site (e.g., hardened/protective aircraft shelter missile racks, Y-stands, munitions chocks, specialized tools) must be coordinated at unit level and forwarded to the MAJCOM Functional Manager for coordination/evaluation. **(T-1).**

8.7.3.1.1.2.1. If the MAJCOM Functional Manager determines the item has AF utility, the drawings shall be forwarded to ACC/A4WC for review and addition to the MMHE Focal Point Master Project List that results in formal development and placement onto the MMHE Focal Point web site.

8.7.3.1.1.3. Munitions/armament LME not designed to interface with or support munitions that are not contained in technical data or on the MMHE Focal Point web site must be approved by QA. **(T-1).**

8.7.3.1.1.3.1. Units are encouraged to forward any such approved LME for possible inclusion on MMHE Focal Point web site by sending an approved drawing package to the MAJCOM Functional Manager for coordination/evaluation.

8.7.3.1.2. All LME must meet applicable AFI 91-203 AFOSH, explosive safety, and USAF standards. **(T-1).**

8.7.3.1.3. All equipment designated for use with nuclear weapons test and handling must meet requirements in AFI 91-103. **(T-1).**

8.7.3.1.4. All LME must be maintained and inspected for serviceability on a regular basis IAW applicable TO 00-20-series, TO 35D-1-2, Maintenance Instructions WIPB - Miscellaneous Munitions Handling and Support (Munitions Related), and TO 35D-2-2 *Munitions Materiel Handling equipment Miscellaneous And Locally Manufactured – Armament Related*. **(T-1).**

8.7.3.1.4.1. AFTO Form 244, or equivalent, must be maintained for all LME items (racks, stands, adapters, etc.) except hand tools. **(T-1).**

8.7.3.1.4.2. Equipment without technical data must, as a minimum, be inspected every 180 days for corrosion, physical defect, and lubrication as required. **(T-1).**

8.8. Tool Room Operations and Security.

8.8.1. Operations. Tool rooms will be set up to ensure accountability. **(T-1).**

8.8.1.1. Procedures will be established to ensure custodial control. **(T-1).**

8.8.1.2. Tools will not be issued individually from dispatchable CTKs. **(T-1).**

8.8.1.2.1. When a recurring need exists for common tools to be issued individually, (e.g., hammers, screwdrivers, pliers, drills, wrenches) individual issue bins/drawers may be established as a CTK within the tool room. **(T-2).**

8.8.1.3. Process reports for tools that are lost, damaged, or destroyed, due to neglect IAW AFMAN 23-220. **(T-1).**

8.8.2. Security.

8.8.2.1. The tool room must be capable of being locked and afford protective measures such as monitoring, 24-hour coverage, or controlled key access. **(T-1).**

8.8.2.1.1. When all CTKs are not capable of being secured in the tool room, the Section NCOIC/Chief will design a process to prevent the unauthorized use or access to tools and equipment. **(T-1).**

8.8.2.1.2. Due to space and facility limitations, it may not be possible to store oversized tool kits in the tool room.

8.8.2.2. Tool kit locks will be used to provide a physical barrier to opening the container lid, drawer or door and prevent the unauthorized removal of tools. **(T-1).**

8.8.2.2.1. Locks are not required on tools and equipment that are stored within secured tool rooms or work centers.

8.8.2.2.2. Dispatchable tools, equipment, eTools and CTKs must be locked and/or secured when left unattended. **(T-1).**

8.8.2.2.2.1. Tools and equipment will never be secured to the exterior of an aircraft. **(T-1).**

8.8.2.2.2.2. Tool kits located within high traffic, controlled movement areas or that could limit aircraft movement or be exposed to jet blast are required to be locked when unattended/not in use and moved to un-obstructive/exposed location but do not need to be secured to another object if none are readily available. **(T-1).**

8.8.2.2.2.3. Alert Aircraft in Protection Level 1 or 2 Areas and ASA Aircraft in PL-3 Areas. CTKs in these areas that are directly supporting alert aircraft do not have to be locked when unattended and not in use as long as they are inventoried at the beginning of each shift, after each maintenance task, and at the end of each shift.

8.9. Lost Item/Tool Procedures.

8.9.1. Limit authorization to clear Red X's when an item/tool cannot be located to no lower than Operations Officer/MX SUPT. **(T-1).**

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

8.9.2.1. The person identifying the missing item/tool will search the immediate work area for the item/tool. **(T-1).**

8.9.2.1.1. If not found, after completing an initial search the individual will notify the expediter/Pro Super or equivalent. **(T-1).**

8.9.2.2. Place a Red X in the aircraft or equipment forms of all affected aircraft or equipment with a description of the item/tool and a specific, last known, location of the item/tool. **(T-1).**

8.9.2.3. Expediter/Pro Super or equivalent will immediately notify the Flight CC/Chief, Support Section, MOC, and QA. **(T-1).**

8.9.2.3.1. Initiate a thorough search for the item/tool. **(T-1).**

8.9.2.3.2. Initiate the lost tool report if tool is not located during initial search. **(T-1).**

8.9.2.3.3. **(Added-AFMC)** Initiate AFMC Form 310, Lost/Found Item Report, if the item is not found within two hours of search. Maintain reports in QA section for two years. **(T-2).**

8.9.2.4. If it is suspected that the item/tool has fallen into an inaccessible or unobservable aircraft area, perform a NDI or use borescope equipment to locate the lost item/tool. **(T-1).**

8.9.2.4.1. If the item/tool is in an inaccessible area that poses no FOD threat and the action is to leave the item/tool in place, the x-ray (or equivalent) with the identification of the exact item/tool location and copies of all information concerning the lost item/tool are maintained in the aircraft historical file until the item/tool is recovered. **(T-1).**

8.9.2.5. If at any time during the investigation the item/tool is found, notify the Flight CC/Chief, Support Section, MOC, QA, expediter, Pro Super or equivalent, and the owning work center. **(T-1).**

8.9.2.5.1. If the item/tool is found, but is inaccessible, the Operations Officer/MX SUPT may explore other possible actions to include having the unit or a DFT disassemble the aircraft to remove the item/tool.

8.9.2.5.1.1. If the aircraft MDS is one that has a Programmed Depot Maintenance (PDM) or is scheduled for depot modification, any inaccessible lost item/tool will be listed with location on the AFTO Form 345, *Aerospace Vehicle Transfer Inspection Checklist and Certification*, for removal by the depot. **(T-1).**

8.9.2.6. The Operations Officer/MX SUPT will determine when the search for the lost item/tool may be discontinued. **(T-1).** If the item/tool is not found:

8.9.2.6.1. Notify the MOC and the MXG/CC when the search for the lost item/tool has been discontinued. **(T-1).**

8.9.2.6.2. Ensure lost item/tool report is completed IAW locally established procedures. **(T-1).**

8.9.2.6.3. If applicable, ensure the TAS is documented IAW **paragraph 8.3.6.7** of this instruction. **(T-1).**

Chapter 9

MATERIEL MANAGEMENT SUPPORT

9.1. General. This chapter describes materiel management support and general responsibilities and requirements. MAJCOMs will identify specific responsibilities and outline unique DMS requirements necessary to support wing level maintenance and mission generation operations, and establish processes and responsibilities for maintenance units/work centers without DMS support in supplements and addendums to this AFI. DMS personnel assigned within maintenance units will follow the guidance in this instruction as well as the materiel management policy in 23-series publications. **(T-1).** The AF has consolidated materiel management support under the AF Sustainment Center (AFSC). The AFSC provides fleet-wide supply support to all AF weapon systems and leverages consolidated repair facilities and ALCs capability to optimize weapon system availability.

9.1. (AFMC)No additional MAJCOM unique requirements necessary to support wing level.

9.2. Decentralized Materiel Support. When authorized on the MXG UMD, DMS personnel will report to maintenance activities. **(T-1).** DMS personnel coordinate maintenance and materiel management actions, manage supply transactions for their assigned maintenance activity, monitor and track assets in the repair cycle, resolve support problems and report aircraft parts status to maintenance supervision. DMS personnel also support maintenance in processing issue requests, researching sources of supply, entering manual requisitions (part number only), updating exception code lists, and resolving other peculiar maintenance supply problems. Refer to AFI 23-101 for additional guidance.

9.2.1. In units with DMS personnel, unit leadership in coordination with the LRS Superintendent will ensure proper career-field development opportunities for assigned 2S0XX personnel. **(T-1).**

9.2.1.1. Squadron Superintendents will coordinate with the LRS Superintendent to facilitate DMS personnel moves (N/A for ARC). **(T-1).**

9.2.1.2. The LRS Superintendent is responsible for rotation of 2S0XX personnel between LRS and MX activities.

9.2.2. In units/work centers without assigned DMS personnel, the Logistics Readiness Squadron Materiel Management Flight is responsible for centralized materiel management support. Roles and responsibilities for this process are listed in 23-series publications.

9.3. Supply Discipline. Supply discipline is the responsibility of all military and civilian personnel regardless of grade or position. Personnel at all levels need to ensure the practice of good supply discipline IAW AFI 23-111, *Management of Government Property in Possession of the Air Force*.

9.4. Parts ordering. To minimize record discrepancies, all parts ordering will be initiated from the LRS/materiel management activity through the appropriate MIS when an interface with ILS-S exists. **(T-1).** Request supply assistance from LRS/materiel management activity if status is unacceptable. For ordering aircraft parts, DMS or designated personnel will:

9.4.1. Receive required data from maintenance to facilitate the issue request IAW AFMAN 23-122, Sec. 5B. **(T-2).**

9.4.2. Provide MICAP processing support. **(T-1).**

9.4.2.1. Process the MICAP start through the MIS/ILS-S interface and coordinate with the LRS/materiel management activity to upgrade, downgrade and cancel MICAP requirements.

9.4.3. Order transient aircraft parts IAW AFMAN 23-122 and TO 00-20-3. **(T-1).**

9.4.4. Ensure proper use of UJC and Force Activity Designators (FAD) codes. **(T-2).**

9.4.4.1. Use the FAD of the supported unit and process the request utilizing procedures for a FAD override when supporting a unit with a higher FAD. **(T-1).** See AFH 23-123, Vol 2, Pt 1, ILS-S, *Materiel Management Operations* for further details on UJC, FAD, and FAD override option procedures.

9.4.5. Purchase parts and hardware IAW AFI 64-117, *Air Force Government-Wide Purchase Card (GPC) Program*, AFI 23-101, and AFMAN 23-122. **(T-1).**

9.4.5.1. The weapon system program office approves the local purchase of all aircraft parts.

9.4.6. Requestor will ensure validity and completeness of requisition forms and verify "UJC" and "SRD" codes. **(T-2).**

9.4.7. Verify status with the Daily Document Register (D04), Priority Monitor Report (D18) and the Monthly Due-Out Validation Listing (M30) or use printouts of requests made via the supply interface. **(T-2).**

9.4.8. Follow-up with LRS/materiel management activity to resolve AWP problems. **(T-2).**

9.4.9. Compile a list of direct-NRTS items in coordination with MXS back shops and AFREP representatives and provide to the LRS/materiel management activity for inclusion in the master direct-NRTS listing. **(T-1).**

9.4.9.1. DMS or designated personnel will review and update at least semiannually. **(T-1).**

9.4.10. Establish a storage area for reusable containers. **(T-1).** Consolidation with other work centers is authorized.

9.4.11. Schedule and monitor all repair cycle assets through the repair flights based on priority assigned. **(T-2).**

9.4.12. Move repairable assets from work center to work center in an expedient manner. **(T-2).**

9.4.12.1. DMS or designated personnel will ensure proper documentation and containers accompany repairable assets to meet required evacuation time frames IAW AFI 23-101. **(T-1).**

9.5. Backorder review and validation. DMS or designated personnel will:

9.5.1. Verify and monitor backordered requests to prevent unwarranted mission limiting conditions, CANNs, priority abuses and wasted money. **(T-1).**

9.5.2. Track DIFMs. **(T-1).**

9.5.2.1. DIFM inputs are critical to recording and getting credit for proper repair cycle times.

9.5.2.2. DIFM status codes are broken down into three categories; delayed maintenance time, repair time, and AWP time. Repair time is the only time recorded and used to determine the number of assets that should be stocked. Not using the proper codes when they change reduces the number of assets on base. DIFMs should be reduced to as near zero as possible since credit is not given for delayed maintenance or AWP time. See **paragraph 9.21** of this chapter for additional information on DIFM management.

9.5.3. Complete Aircraft Document Reviews (ADR) as outlined in **Chapter 15** of this instruction. **(T-1).**

9.5.3.1. For units with IMDS, reconcile IMDS and Standard Base Supply System (SBSS) records listed in the NFS540 Document Validation Report (DVR) contained in IMDS and explained in AFCSM 21-579, Vol 2.

9.6. Parts processing. DMS or designated personnel will:

9.6.1. Process reparable items. **(T-2).**

9.6.2. Cancel erroneous requests. **(T-3).**

9.6.3. Process reusable containers IAW AFI 24-203. **(T-1).**

9.6.4. Process metals IAW the Precious Metals Recovery Program outlined in AFI 23-101. **(T-1).**

9.6.5. Turn in excess supply parts and materiel to LRS/materiel management activity IAW AFI 23-101. **(T-1).**

9.6.6. Process TRN to record usage of an item and ensure demand levels and percent base repair are updated IAW AFMAN 23-122. **(T-1).**

9.7. Readiness Spares Package (RSP) Review. Maintainers play a critical role in the annual RSP review process. This role includes active maintenance participation in the base level validation process conducted by the LRS and their MAJCOM during the annual RSP pre-review process in preparation for the Weapon System Program Manager final review. Close maintenance-materiel management collaboration is essential to ensure RSPs are properly sized to support contingency maintenance requirements. See AFMAN 23-122 for further details**.**

9.8. Bench Stock. Flight CCs/Chiefs and/or Section NCOICs/Chiefs will determine the contents of their bench stock IAW qualification criteria in AFMAN 23-122. **(T-1).** Examples of bench stock items include: nuts, bolts, cotter keys, washers, resistors, capacitors, light bulbs, sealants and batteries. Bench stock levels are managed and based predominantly on consumption. Monthly and semi-annual bench stock listings are provided by the LRS/materiel management activity. A thorough review of these listings is extremely important to ensure that bench stock supports the mission efficiently and economically.

9.8.1. DMS or designated personnel will:

9.8.1.1. Mark bins containing 50 percent or less of the authorized quantity to facilitate monthly inventories. **(T-1).** Do not include items coded TCTO, unacceptable for AF use, critical, classified or sensitive in bench stocks.

9.8.1.2. Maintain environmentally sensitive items in their original container. **(T-1).** If removed from original container, place items in a sealed package and clearly mark them to prevent misidentification and misuse (e.g., seals, desiccant, filters, circuit cards, sealants).

9.8.1.3. Remove unidentifiable items or items whose serviceability is unknown, from bench stock bins and process them as shop scrap through DLADS. **(T-2).**

9.8.1.4. Control and secure any precious metals displayed. **(T-1).**

9.8.1.5. Set up fixed or mobile bench stocks to provide quick and easy access to bits and pieces needed to support maintenance efforts. **(T-2).** Ensure mobile bench stocks do not present a FOD hazard.

9.8.1.6. Identify and control the issue and turn-in of hazardous materials/items on bench stock listings. **(T-1).**

9.8.2. Work center supervisors will:

9.8.2.1. Semi-annually complete a bench stock joint review with the Customer Support Liaison Element (CSLE), Materiel Control. **(T-1).**

9.8.2.1.1. During these reviews, special emphasis needs to be given to items with no demands in the past year and items with excessive quantities not supported by demands. The continuance of stocking such items is the exception and not the normative process. See AFMAN 23-122 for further details.

9.9. Consumable Readiness Spares Package (CRSP). The CRSP process provides requirement and asset visibility, has automated transfer and deployment procedures, has the capability to provide the correct priority and project-coded replenishment requisitions, and eliminates redundant requirements. Additionally, CRSP procedures provide MAJCOMs with a standard process to support consumable item requirements during contingency operations. Refer to AFMAN 23-122 for CRSP procedures and options.

9.10. Shop Stock. Shop stock includes gas cylinders, random length bar stock, sheet metal, plastic, fabric, electrical wire, and similar items not normally included in bench stocks. Maintain shop stock for day-to-day operations. Monitor shop stock to prevent materiel from becoming excessive or outdated. Shop stock should not normally exceed 90-days usage, or the unit of issue or unit pack, whichever is greater. Store shop stock near/adjacent to bench stock items, if practical, but do not mix them together. Clearly identify materiel as “Shop Stock” and label them with noun, national stock number or part number, unit of issue, and shelf-life, if applicable.

9.11. Operating Stock. Operating stock includes connector dust covers, hydraulic line caps/plugs, and similar items that are normally recovered after use and re-used. Store operating stock near/adjacent to bench stock items, if practical, but do not mix them together. Monitor operating stock to prevent it from becoming excessive or outdated. Retain partially used bench stock items in bench stock and not in operating stock. Identify, tag, and turn in items with no forecasted use IAW AFI 23-101. Clearly identify items as “Operating Stock” and label them with noun, national stock number or part number, unit of issue, and shelf-life as applicable.

9.12. Work Order Residue. Work order residue includes expendable bit/piece items left over from maintenance work orders or bench stock deletions. Store work order residue near/adjacent to bench stock items, if practical, but do not mix them together. Ensure excesses are consolidated for turn-in to LRS at least annually. Clearly identify items as "Work Order Residue" and label them with noun, national stock number or part number, unit of issue, and shelf-life as applicable. Control all work order residues used on or around aircraft, uninstalled engines, and AGE.

9.13. Adjusted Stock Levels. Adjusted stock levels are used when the demand level or consumption is inadequate to support the requirement. A single occurrence of a mission limiting status is not sufficient reason to establish an adjusted stock level but should result in a LRS/materiel management activity review of demand data for accuracy. The using work center, with assistance from LRS/materiel management activity, will prepare the request IAW AFMAN 23-122 and provide adequate justification (e.g. seasonal materiel requirements, long lead-time items, infrequent use components that cause an NMC condition and result in a new procurement or excessive lead-time to restock). Route the request through the applicable Squadron Operations Officer/MX SUPT and MXG/CC (or equivalent) for approval prior to submitting to LRS/materiel management activity. Using work centers will maintain a master file of approved adjusted stock level items and follow-up on all requests until completed. **(T-1).**

9.14. Shelf-life Items. Using work centers will control the quantity and inspect (Type I and Type II) shelf-life items kept in unit bench stock, operating/shop stock and work order residue IAW AFMAN 23-122. **(T-1).** Personnel managing bench, shop, or operating stocks will:

9.14.1. Identify serviceable shelf-life items/locations with a colored and/or highlighted label that clearly states the items expiration date. **(T-2).**

9.14.2. Check expiration dates on issued items and do not accept outdated items. **(T-2).** Refer to AFMAN 23-122 for outdated and/or unserviceable shelf-life items.

9.14.3. Not open shelf-life containers until needed and use the oldest items first. **(T-2).**

9.14.4. Ensure shelf-life materiel stored in other than original containers are marked with original shelf-life expiration codes. **(T-2).**

9.14.5. Recycle, reclaim, or turn-in for disposal, shelf-life items which are loose in the bin and expiration dates cannot be determined. **(T-2).**

9.15. Equipment Items. Flight CCs/Chiefs and/or Section NCOICs/Chiefs will review equipment items needed for mission accomplishment IAW AFI 23-101. **(T-1).**

9.15.1. Equipment Management, LRS/Materiel Management Activity, EME personnel will assist Equipment Custodians in researching and preparing documents for gaining authorizations and ordering equipment items. **(T-2).** Refer to AFMAN 23-122**,** for the required procedures to order and deploy equipment items.

9.15.1. **(AFMC)** See AFI 23-101, EME or Equipment Accountability Element (EAE) personnel assist installation equipment custodians with processing equipment transactions.

9.16. Special Purpose Recoverable Authorized Maintenance (SPRAM). SPRAM assets are fault isolation spares, shop standard spares, training spares, -21 TO spares (AME), test station spares, and stand-alone spares. These assets are Expendability, Recoverability, Reparability Code (ERRC) XD/XF items, which are controlled and managed as in-use supplies.

9.16.1. Flight CCs/Chiefs and/or Section NCOICs/Chiefs will review all SPRAM authorizations annually and certify as valid IAW AFI 23-101, AFMAN 23-122, and AFI 21-103**. (T-1).**

9.17. Supply Assets Requiring Functional Check, Calibration, or Operational Flight Programming. Maintenance sections must identify items requiring functional checks, calibration, or operational flight programming prior to use. **(T-1).**

9.17.1. Maintenance sections will prepare a list of items, (including the repair section's organization and shop code) for items requiring functional checks, calibration, or operational flight programming. **(T-1).**

9.17.1.1. The list will be routed through the Operations Officer/MX SUPT to the LRS. **(T-1).**

9.17.1.2. This list shall be updated/validated IAW AFMAN 23-122. **(T-1).**

9.17.2. The LRS/management materiel activity issues the items to repair sections when assets are initially received on station, when functional checks, calibration, or programming is due or when serviceability is doubtful.

9.17.3. If a part issues requiring a functional check, ensure it is not restricted in the weapon system -6 TO. Refer to TO 00-20-3 for functional check and frequency requirements.

9.18. Time Compliance Technical Order (TCTO) Kit Procedures. TCTO kit management is a shared responsibility between maintenance and supply IAW TO 00-5-15 and AFI 23-101.

9.18.1. Initiate requests for kits, parts and special tool requirements through LRS as outlined in **Chapter 15**.

9.18.2. Transfer TCTO kits with aircraft or equipment. AFMAN 23-122, TO 00-5-15, and TO 00-5-1 contain detailed guidance for the transfer of TCTO kits.

9.18.3. Retain TCTO kits for aircraft returning to the unit for TCTO compliance.

9.19. Supply Points. Supply points may be established within individual work centers when time or resources required to move items dictates the need to do so.

9.19.1. Storage space for the supply points is provided by the supported work center.

9.19.2. Management of the supply point will be documented within a written MOA/MOU between group commanders. **(T-1).** Supply point monitors will be appointed in writing to manage and account for supply point assets. **(T-1).** LRS/materiel management activity will maintain overall accountability and control of supply point assets. **(T-1).**

9.19.3. Supply points must be reconciled semi-annually by the Supply Point Monitor. **(T-1).**

9.19.3.1. One of the semiannual reconciliations will be done at the same time as the annual supply point inventory IAW AFI 23-101. **(T-1).**

9.20. Local Manufacture. Local manufacturing is an essential part of maintenance unit support. The applicable end-item TOs identify items subject to local manufacture and specific procedures for processing are in AFMAN 23-122.

9.20.1. MXG/CCs will publish directives outlining procedures covering the manufacture of items source coded local manufacture IAW **Chapter 2**, **Chapter 4**, and **Chapter 8** of this instruction. **(T-1).**

9.20.2. MXG directives as a minimum will include:

9.20.2.1. Procedures that prevent abuses and specify coordination requirements (e.g., QA and approval authority, EAE. **(T-1).**

9.20.2.2. Identifying the approval authority for local manufacture requests. **(T-1).**

9.20.2.3. Identifying drawing, sample, technical data and DD Form 1348-6, *DOD Single Line Item Requisition System Document*, source requirements as required. **(T-1).**

9.20.2.3.1. Ensure guidance identifies that drawings are obtained from the appropriate repository (e.g. Engineering Data Service Center (EDSC) or Joint Engineering Data Management Information and Control System (JEDMICS)).

9.20.2.4. Establishing coordination process for all the appropriate fabricating sections to determine the bits and pieces required to manufacture the item. **(T-1).**

9.20.2.4.1. Coordinating bit and piece parts requirements and availability with the LRS/materiel management activity.

9.20.2.5. Identifying all work centers that have action on the AFTO Form 350 for items requiring multiple section processing. **(T-1).**

9.20.3. **(Added-AFMC)** Efforts should be made to purchase items in-lieu of local manufacture if practical when the item has been specifically designed and manufactured for the intended use/purpose.

9.21. DIFM Management.

9.21.1. The roles and responsibilities for DIFM management are identified in AFI 23-101. The LRS/materiel management activity provides the D23 or equivalent to assist each repair section in DIFM Management. The D23 is provided in both maintenance location and stock number sequence. Repair sections use the D23 to manage the flow of serviceable and unserviceable DIFM assets in the repair cycle and to ensure the DIFM status and location is updated.

9.21.1.1. If a parts request is backordered and the removal of the unserviceable DIFM item does not further limit or restrict the operational capability of the end item, it will be removed and sent to the applicable support section for either repair, NRTS approval, or condemnation with a subsequent turn-in to LRS/materiel management activity (as a credit DIFM) IAW TO 00-20-3. **(T-1).**

9.21.1.1.1. Repair assets to the fullest extent authorized.

9.21.1.2. Repairable components will be processed, repaired, and returned to the FSC within the required time frame IAW AFI 23-101. **(T-1).**

9.21.1.3. The D23 will not be used to manage serviceable assets.

9.21.2. Repair Cycle Throughput. Throughput is the average time it takes to move individual items through the repair cycle. Timelines for turn-in are outlined in AFI 23-101.

9.21.3. DMS or designated personnel will monitor the status of repair cycle assets. **(T-1).**

9.21.3.1. DMS or designated personnel will process these assets and ensure appropriate DIFM status codes are used IAW AFH 23-123. **(T-1).**

9.21.3.2. Units will establish local procedures for the control of repair cycle assets throughout the maintenance repair cycle IAW AFI 23-101 and AFMAN 23-122. **(T-1).**

9.21.3.2.1. Procedures will include methods of accounting for all components and accessories, procedures for control of assets in AWP or AWM status, and procedures and responsibilities for cross CANN, removal of bits and pieces, and scheduling and control of repair cycle assets. **(T-2).**

9.21.4. AWP and cross-CANN assets will be controlled and managed IAW AFMAN 23-122. **(T-1).**

9.21.4.1. Maintenance activities will closely control reparable assets in AWP status. **(T-1).**

9.21.4.2. Do not consolidate storage areas for AWM and AWP assets.

9.21.4.3. Group commanders will negotiate storage of out-sized units. **(T-2).**

9.21.5. Maintenance Turn-In to Supply. Maintenance is responsible for DIFM items until the item is returned to LRS/materiel management activity.

9.21.5.1. Work centers must properly tag and secure repair cycle assets and place items in a leak–proof containment liner (no leaks/stains/tears/punctures), as required. **(T-1).**

9.21.5.1.1. To prevent spillage, any item containing any type of residual fluid, regardless of hazard classification, will be drained, purged, preserved, capped, plugged and placed in a leak-proof containment liner before placement into a serviceable reusable container for storage or shipment. **(T-1).**

9.21.5.1.2. The work center must comply with packaging, environmental control, purge and preservation requirements as specified in applicable TOs, AFI 24-203, *Preparation and Movement of Air Force Cargo*, AFMAN 24-204, *Preparing Hazardous Materials for Military Air Shipments* and place the proper documentation with the container. **(T-1).**

9.21.5.2. Include AFTO Form 350, Parts I and II, and a condition tag or label with all items turned into supply. **(T-1). Note:** Some DIFM assets may require additional tags.

9.21.5.2.1. Enter the correct action taken code on AFTO Form 350, Part II.

9.21.5.3. Accomplish proper reclamation and demilitarization actions on condemned repair cycle assets IAW AFMAN 23-122 and AFH 23-123, Vol. 2, Pt 1, Sec. 6C.

9.21.5.4. DIFM items (serviceable or unserviceable) will be processed and turned in to LRS IAW AFI 23-101. **(T-1).**

9.22. Tail Number Bins (TNB).

9.22.1. Establishment and management of TNBs is a maintenance responsibility. TNBs are storage locations established and controlled to store issued parts awaiting installation and

parts removed to FOM. TNBs are set up by tail number, serial number, or identification number.

9.22.1.1. DMS or designated personnel will not release parts from the TNB without proper documentation. **(T-2).**

9.22.1.2. Items removed from the TNB that are not installed that duty day will be returned to TNB/DMS. **(T-2).**

9.22.1.3. DMS or designated personnel will inform the Pro Super or Flightline Expediter of TNB assets, which may prevent or satisfy a mission-limiting condition. **(T-2).**

9.22.2. TNB items used to satisfy MICAP conditions are not CANNs. If a TNB asset is issued to satisfy a part request, maintenance personnel will:

9.22.2.1. Reorder the item and notify the expediter of the new document number. **(T-1).**

9.22.2.2. Update the aircraft forms and the MIS. **(T-1).**

9.22.2.3. If a due-out is created prior to transfer of these items, notify the LRS/materiel management activity (or DMS if applicable) to change the "mark-for" field on the due-out detail. **(T-1).**

9.22.3. Seal and store partially completed TCTO kits and parts in the TNB and mark the container or package with the tail number, serial number, or equipment identification number and TCTO number. **(T-1).**

9.22.4. Maintain security and control of TNB assets. **(T-1).**

9.22.5. Track property placed in the TNB by tail number, serial number, or equipment identification number. Each entry will indicate:

9.22.5.1. Date received. **(T-1).**

9.22.5.2. Noun. **(T-1).**

9.22.5.3. Document number. **(T-1).**

9.22.5.4. Status (FOM, Issue/Due-Out Release (ISU/DOR), TCTO, etc.). **(T-1).**

9.22.5.5. Removal information (date, time, signature, and employee number of the person who picked up the property). **(T-1).**

9.22.5.6. Remarks. **(T-1).** Enter “NONE” if no remarks are necessary.

9.22.5.7. Current JCN. **(T-1).**

9.23. CANN actions. See **Chapter 11** of this instruction for CANN procedures and responsibilities.

9.24. Bench Check and Repair Policy. Maintenance sections bench check items as part of the off-equipment troubleshooting process. When workload requires, the Section NCOIC/Chief determines the priority for bench check actions. Specific procedures for bench check and repair policy are provided in TO 00-20-3. The following general guidelines apply:

9.24.1. Order required parts “fill or kill.”

9.24.1.1. If the part is not in stock and a MICAP condition exists, backorder the new request.

9.24.1.2. Determine local repair capability before requisitioning off-base support or going lateral support.

9.24.2. Remove the suspected item, fill out the AFTO Form 350, and annotate it as repair and return. Attach AFTO Form 350 to the item; place the item in the repair cycle; and annotate the name of the repair section on the form.

9.24.3. Bench-check, repair, take NRTS action, or condemn the item.

9.24.3.1. If the item is repaired or otherwise determined to be serviceable, the repair section informs the Support Section the item is available for pick-up so on-equipment maintenance action may resume.

9.24.3.2. If the item cannot be repaired, the repair section informs the Support Section to initiate a backordered request and takes appropriate NRTS and condemnation action on the unserviceable asset.

9.25. Maintenance Turn-Around (TRN) Record Update Processing. Work centers processing TRNs will coordinate with LRS/materiel management activity and follow requirements outlined in AFI 23-101, AFMAN 23-122, and AFH 23-123. **(T-1).**

9.26. Buildup Items. Maintain items requiring build-up prior to use (e.g., wheels and tires) in supply points in a built-up configuration.

9.26.1. Send items to appropriate work centers for build-up and return them to the supply point for re-issue.

9.26.1.1. Use AF Form 1297 or control log to control assets sent for build-up when the supply point is operated by DMS.

9.26.1.2. Validate AF Form 1297 daily if over 10 days old.

9.26.2. Local procedures will be established to control assets when maintenance operates the supply point and assets are sent to another organization for build-up. **(T-1).**

9.27. Deficiency Report (DR) Exhibits. DR exhibit procedures for issue, turn-in, and storage are contained in TO 00-35D-54 and AFI 23-101. DRs shall be inputted into the Joint Deficiency Reporting System (JDRS) at **https://jdrs.mil**. **(T-0).**

9.28. Destruction of TOP SECRET Material. Destruction of TOP SECRET material requires a receipt according to DODM 5200.01, Vol 3, *DOD Information Security Program: Protection of Classified Information* and AFI 31-401. A copy of the destruction certificate will be included with the turn-in documentation. **(T-0).**

9.28.1. Provide sensitive instruments interior container protection. **(T-1).**

9.28.2. Ensure a copy of the LRU/SRU historical record accompanies turn-in of all items. **(T-1).**

9.29. Certifying Items Associated With Explosives. Ensure items such as MERS, TERS, pylons, launchers, rafts, bomb racks, ejection seats, fire suppression bottles, AFE and gun systems and components are certified explosive-free prior to turn-in to LRS and/or Defense

Logistics Agency (DLA) Disposition Services. **(T-1).** Refer to TO 11A-1-60 and AFI 21-201 for specific certification requirements.

9.30. (Added-AFMC) Repair Network Enhancement Program (RNEP)(formerly IREP). MXG/CC is the OPR for the RNEP program. RNEP provides maintenance group senior leadership a forum to evaluate current aircraft weapons systems resource and support status, highlight specific problem areas, focus on local repair initiatives to include the AFREP processes, and discuss ways to improve the overall repair cycle process. **(T-2).**

9.30.1. **(Added-AFMC)** RNEP Meeting. The meeting will be held at least quarterly; chaired by the MXG/CC. Recommended participants (as required) include the following: LRS, FSC, representatives from maintenance units, O&M resource advisors, maintenance analysis, AFREP (if applicable), QA, Aircrew Flight Equipment, and others as determined by the MXG/CC. The responsible asset manager should be the focal point to lead the discussion of the key data about a specific part. MXG/CC will determine RNEP meeting content based on local requirements. **(T-2).**

9.30.1.1. **(Added-AFMC)** Subject Matter Review. One of the objectives of the RNEP meeting is to increase overall base self-sufficiency for repair and reduce the overall cost of operations. Topics discussed vary based on local requirements, but should include key elements of asset management and costs associated with each of the maintenance stock fund divisions. The number of items reviewed in each topic is determined locally. **(T-3)** Units can determine the specific format/visual aids used for presentation and may include the following information:

9.30.1.1.1. **(Added-AFMC)** Asset Profile/Top Projected MICAP Situations. An asset profile is an in-depth review of an asset identified as critical to mission accomplishment or that causes frequent MICAP situations. Data in an asset profile may include number authorized and on-hand, number repaired and not repaired, number of MICAPs, MICAP cause codes, average repair cycle days, average AWP days, monthly demand, item cost, and financial value of assets in the repair cycle. The overall health of the assets should include reasons for MICAP situations and solutions to resolve them. **(T-3).**

9.30.1.1.2. **(Added-AFMC)** Test Station Equipment Profile. Test station in-commission time is critical to efficient repair cycle output. TMDE and other shop deficiencies may have a negative effect on the base repair cycle process. The wing should focus on actions which maximize test station capability. **(T-3).**

9.30.1.1.3. **(Added-AFMC)** Wing Self-Sufficiency Initiatives. Initiatives include discussion of new wing, group and squadron AFREP initiatives and other local self-sufficiency repairs. Discussions must include how initiatives are crossfed to appropriate depot, Lead Command and all other like-MDS bases. Discuss product improvement initiatives and maintenance related to Airmen Power by Innovation (API). **(T-3).**

9.30.1.1.4. **(Added-AFMC)** High Cost Maintenance. Unit funded TCTOs/modifications, high cost work centers, SPRAM back orders, financial value of parts in the repair cycle, etc. **(T-3).**

9.30.1.1.5. **(Added-AFMC)** Top CANN Items. Items with significant CANN histories. Review information which includes the number of times items were CANNed in the last 30 days, average CANN occurrences over the last 6 months, projected get well date, and the time required to CANN the item. **(T-3).**

9.30.1.1.6. **(Added-AFMC)** Unit Aircraft Engine Status Review. A status review summary should include number in work, projected production date, and supply drivers for work stoppage. **(T-3).**

9.30.1.1.7. **(Added-AFMC)** Repair Cycle Bottlenecks. Review any area, which impedes the repair cycle process, such as frozen supply, records, supply, rejects, test station backlogs, personnel deficiencies, manpower shortages etc. Review high-time due in from maintenance (DIFM). **(T-3).**

9.30.1.1.8. **(Added-AFMC)** AWP Summary. Analyze due-outs causes and back order priorities to determine if supply action is required to correct any deficiencies/problems. **(T-3).**

9.30.1.1.9. **(Added-AFMC)** Repair Cycle Throughput. Throughput is the average time it takes to move individual items through the repair cycle. Review/compare the 12-month average versus the current month repair cycle time (RCT) to determine if progress is being made. 2LM reparable items must be processed without delay as established in AFI 23-101. Non-2LM repairable items must be processed within 4 days for serviceable assets and 10 days for unserviceable assets. **(T-3).**

9.30.1.1.10. **(Added-AFMC)** Part Store Issue Effectiveness. Percentage of aircraft parts issued from the flightline part store vs. the main warehouse. Disregard this element when LRS does not segregate aircraft components into a separate warehouse. **(T-3).**

Chapter 10

MUNITIONS POLICY AND WEAPONS LOAD CREW PROGRAM

10.1. AF Munitions Policy. AF munitions policies are contained in AFI 21-200, *Munitions and Missile Maintenance Management*, and AFI 21-201. AF nuclear munitions policy is contained in AFI 21-204.

10.1.1. Live and inert missiles (or electrical simulators) of the same type (i.e. CATM with Air to Air) must not be loaded or flown together on an aircraft for any purpose. **(T-2).** Live and inert (to include training or practice) bombs must not be loaded in/on the same dispenser/rack or flown on an aircraft load together. **(T-2).** Any request to deviate from or waiver to this policy must be coordinated through the WWM, and must be submitted via official message to the MAJCOM Munitions Division, Weapons Safety, and Operations Weapons and Tactics/Training Divisions. **(T-2)**. **Note:** Units that fly rocket pods will not fly TP rockets with any combination of live rockets. **Note:** With SPO/Seek Eagle approval, configurations with inert AGMs can be flown with all types of bombs and rockets. The MAJCOM Munitions Division is the sole approval authority for these deviations/waivers. Test organizations may load and fly live and inert munitions on the same aircraft for test missions only, as long as the flight profile is IAW an approved test directive that has been through a Safety Review Board process and flight clearance through the applicable SPO/Seek Eagle office has been properly obtained.

10.1.2. Request for waiver of, or deviation to, this policy will include as a minimum: (1), an Operational Risk Assessment report and proposed controls to mitigate or eliminate hazards to personnel, damage to aircraft and support equipment or inadvertent employment of live ordnance, and (2), a signed copy of the Test Requirement Plan, Test Plan, or Concept Employment Plan. **(T-2).** Approved requests will remain valid only for the event requested and will not exceed 60 days. **(T-2).**

10.1.3. Captive Air Training Munitions (CATM). Safety pins/streamers for arming keys/safe-arm handles on CATMs may be removed for daily training/flying operations provided positive control and accountability is maintained for these items.

10.1.3.1. CATM AIM-9M arming handles will be permanently removed. **(T-1)**. These components are only removed for foreign or dropped object prevention.

10.1.3.2. Any CATM missiles used for exercises, Load Crew Training and inspections should be configured to the maximum extent possible with all safety devices and components to mirror the parent tactical munitions.

10.2. Unit Committed Munitions List (UCML), Test/Training Munitions List (TTML). Operational units will use UCMLs, Test/Training (AETC and AFMC only (includes ARC associated units in these commands)) will use TTMLs unless they already require a UCML (i.e., NORAD Committed). **(T-1).** The UCML/TTML is a list of Primary Munitions (PM), Support Munitions (SM), and Limited-use Munitions (LM) necessary to meet unit operational/test/training requirements and is published IAW this instruction. The list of PM will not include more than 10 individual munitions or Munitions Family Groups (MFG) combined per mission, design, and series (MDS) aircraft assigned. **(T-2).** The UCML/TTML also

specifies the minimum certified load crews required to meet unit requirements. MAJCOMS may supplement UCML/TTML processing, coordination and appendix requirements.

10.2.1. As a minimum, UCML/TTML's will be updated annually to identify all munitions tasked and/or required to support test/training or OPLANs and Designed Operational Capability (DOC) statements. **(T-1).** Additional munitions may be included on the UCML/TTML as SM or LM munitions if required by the unit or designated by the MAJCOM (A4M performs this in the ANG) to support test, training, or deployment. The UCML/TTML is the base document for aircrew and load crew training munitions forecasts, authorizations and operations. Units will start their UCML/TTML validation in July, and have a coordinated input to the MAJCOM Munitions Division in August. **(T-2)**. MAJCOMs will supply approved UCML/TTML to the units in September. **Note:** Specified months not applicable to ANG process.

10.2.2. Unit changes to the UCML/TTML will be justified by Wing Weapons and Tactics, coordinated and processed through the WWM, Munitions Squadron/Flight, MXG/CC and OG/CC before sending it to higher headquarters and MAJCOM. **(T-2).**

10.2.3. Standard Conventional Load (SCL) lists are not part of the UCML/TTML. They are stand-alone documents.

10.2.4. The WWM determines the minimum number of certified load crews depicted on the UCML. The minimum number should be based on supporting the initial/lead Unit Type Code (UTC) requirements. Additionally, follow-on UTCs tasked simultaneously with the initial/lead UTC will be considered to determine minimum load crew requirements. The WWM determines the number of load crews depicted on the TTML as required to meet training unit syllabus and/or test unit mission requirements. **Note:** WWM will specify in writing the minimum number of load crews required in aggressor units when no UCML/TTML exists. **(T-1)**.

10.3. Weapons Load Crew Training Program (WLCTP). The USAF WLCTP ensures all weapons load crew members obtain and maintain the certification/qualification and proficiency needed to effectively meet safe, secure, and efficient munitions loading/unloading operations supporting their unit's mission. The objective of the WLCTP is to develop and maintain a high state of mission readiness for immediate and effective generation/employment of munitions loaded aircraft. WLCTP provides the basis for accomplishing peacetime missions while maintaining critical wartime capability. The WLCTP is managed by Weapons Standardization.

10.3.1. Weapons Standardization (WS)**.** WS plans and conducts nuclear and conventional weapons load certification and training requirements to support unit tasking and operational plans. WS is comprised of the superintendent, the LSC, lead crews and an academic instructor. WS will manage and govern the Weapons Standardization Program. **(T-1).** In TFI-associated units, the WWM will ensure ARC/RegAF LSC (minimum of two certifying officials) are available to cover weekend loading evaluations. **(T-2).** This arrangement must be in writing (grade, names) and reviewed on an annual basis. **(T-2).** Training, certification and qualification required to load munitions on aircraft are only provided by Weapons Standardization.

10.3.1. **(AFMC)** Weapons Standardization (WS). When multiple LSCs (not to exceed one per MDS) are assigned, a lead LSC will be identified to perform semi-annual evaluations and

ensure standardization of loading. Applicable procedures in this section will be adopted for use by test and evaluation load crews assigned to geographically separated units. **(T-2).**

10.3.2. Weapons Standardization Program. The Weapons Standardization Program is established to ensure munitions loading standardized training, procedures, and policies, are in place to support mission requirements. The Weapons Standardization Program is made up of the WS personnel, weapons academic training, practical training, munitions loading certification, weapons task qualification, and proficiency evaluations. These core elements are managed and governed by the WS. WS will establish and manage a program to train, certify and maintain proficiency for each load crew based on the munitions designated by the UCML/TTML and/or those munitions designated by the WWM for SM's and LM's. **(T-1).**

10.3.3. WS Superintendent (SUPT) Responsibilities. The WS SUPT is responsible to the WWM, and performs Section NCOIC/Chief duties outlined in **paragraph 3.10** of this instruction. The WS SUPT develops and oversees the Weapons Standardization Program, sets standards, develops local policies and procedures, and interprets all technical data and directives governing the Weapons Standardization Program. **Note:** ARC & Air Force Special Operations Command (AFSOC) WS SUPT responsibilities may be performed by the LSC Team Chief. The WS SUPT will:

10.3.3.1. Manage WLT training munitions, components, and accessories. **(T-1).**

10.3.3.1.1. Ensure load crew training munitions are maintained to the same standard and are representative of the parent munitions to the maximum extent possible. **(T-1).**

10.3.3.1.2. If defects exist that preclude the use of training munitions for WLT/DLO, they will be turned in to the Munitions Flight/Squadron for maintenance or replacement IAW AFI 21-201. **(T-1).**

10.3.3.2. Ensure training munitions and munitions items meet unit needs. **(T-1).** The UCML/ TTML will be the source document for WLT munitions requirements and authorizations and the WS SUPT must ensure correct munition variants are requested to support unit taskings. **(T-2)**.

10.3.3.2.1. The WS SUPT will ensure sufficient quantities of load crew training munitions are forecasted for IAW AFI 21-201 and issued assets are serviceable to support both load crew and DLO training programs. **(T-1).**

10.3.3.2.1.1. If sufficient training munitions are not available to support DLO training, coordinate use of assigned items from WS supply point for management flexibility.

10.3.3.2.2. The WS SUPT will review and validate all munitions forecasts submitted by WS and the Armament Flight prior to submission to MAJCOM. **(T-1).** Refer to AFI 21-201 for guidance on submitting the annual non-expendable air-munitions training forecast to the MAJCOM.

10.3.3.2.3. Training munitions. Authorized quantities of training munitions are posted in the "Air Force Standard for Non-Expendable Air-Munitions Training" located on the Air Force Conventional Munitions SharePoint site at **https://cs.eis.af.mil/afmunitions/default.aspx.** These numbers reflect the maximum

munitions required exclusively for weapons load crew certification and recurring training. These munitions are forecasted by and assigned to weapons load training (W1) accounts.

10.3.3.2.3.1. Units may request and justify additional quantities of munitions than specified on these tables but may not be allocated munitions unless sufficient quantities are available and approved.

10.3.3.2.4. Units with multiple MDS will use the authorization for the MDS that provides the greater quantity per item; these authorizations are not cumulative. **(T-1).** For example, if a base has both F-15E and F-16 aircraft assigned and both MDS are tasked on the UCML/TTML for Guided Bomb Unit (GBU)-12 then only two, not four, GBU-12s will be allocated to support both MDS.

10.3.3.2.4.1. If a situation exists where the WLT facilities are physically separated and the WWM determines it negatively impacts load crew training to move munitions from one to the other, then each facility will be authorized the minimum number of tasked training munitions. **(T-2).**

10.3.3.3. Ensure load crews demonstrate proficiency on each type aircraft racks and stations prior to certification on that munition. **(T-1).**

10.3.3.3.1. For conventional munitions capable of multiple carriage, both aircraft parent station and multiple carriage loading are required.

10.3.3.3.2. For nuclear weapons, only the aircraft stations that are maintained in nuclear certified status are loaded.

10.3.3.4. Ensure load crews are familiar with fuze inspection, installation and wiring IAW MDS-33 series TO procedures or TO 11A-1-63, *Munitions Assembly Procedures—Inspection and Assembly of Conventional Munitions*. **(T-1).**

10.3.3.4.1. Conduct this training during initial certification.

10.3.3.5. Ensure EPEs are performed on each LSC/Lead Crew member at least semi-annually to validate standardization of the weapons load training program. **(T-1).**

10.3.3.5.1. Results will be documented on the AF Form 2419 and will be maintained within the WLCMT or MAJCOM approved equivalent. **(T-1).**

10.3.3.5.2. WWM and/or WS SUPT will perform EPEs on LSC members during load crew Semi-Annual Evaluations. **(T-1). Exception:** For the 354th Fighter Wing (FW), EPEs will be accomplished during weapons task qualification training. (**T-1**).

10.3.3.5.3. LSC members perform EPEs on Lead Crew members during load crew MPRL evaluations. **(T-1).**

10.4. Loading Standardization Crew (LSC). The LSC is assigned to WS and reports to the WS SUPT. The LSC administers the Weapons Standardization Program and the WWM and/or WS SUPT evaluate and certify the LSC according to criteria in this AFI.

10.4.1. The LSC Team Chief must be at least a TSgt 2W171. **(T-1).**

10.4.2. The LSC trains, evaluates, and certifies the lead crews and load crews.

10.4.2.1. **(ARC)** : If the LSC Team Chief is performing WS SUPT duties then the WWM will evaluate and certify the LSC. **(T-1)**.

10.4.2.2. The LSC will perform semi-annual evaluations, (quarterly at short tour locations), on all certified load crews on at least one of the unit's PM. **(T-1).** Lead crew members may assist; however, at least one member of the LSC must be present. **(T-1).**

10.5. Weapons Academic Instructor. A WS member is designated to oversee and manage the Weapons Academic Training Program.

10.5.1. The WWM will designate WS members (minimum 7-skill level) as primary (primary instructor will be a permanently assigned individual to WS, minimum grade of TSgt) and alternates, to conduct initial and recurring weapons academic training for all wing 2W1XXs (or equivalent contractor personnel). **(T-1).**

10.5.1.1. The instructors will have a SEI for at least one of the assigned MDS weapons system and familiarized with all UCML/TTML items (SEI is not applicable for ARC personnel). **(T-1).**

10.5.2. The primary academic instructor will manage the Weapons Academics Training Program and associated materiel. **(T-1).**

10.5.3. The primary weapons academic instructor will review the Weapons Academics Training Program annually IAW AFI 36-2650. **(T-1).**

10.5.3.1. The weapons academics instructor is not considered a maintenance instructor.

10.6. Lead Crews. The lead crews are assigned to the WS and assist the LSC in training, evaluating and certifying unit load crews in safe and reliable munitions loading procedures.

10.6.1. For contingency operations or deployed locations a lead crew should deploy to perform WS functions.

10.6.2. If a lead crew is not deployed, the senior 2W1X1 weapons loading person (with WWM coordination) on location will have WS authority. **(T-1).** For example, a new munition or load configuration is required to support operations and crews need to be trained on location (provided Seek Eagle approval has been granted and verified technical data/procedures are available).

10.7. Training Facilities/Aircraft.

10.7.1. Practical training will be conducted in a facility dedicated to load crew training that is of sufficient size to accommodate required aircraft, training munitions and associated support equipment. **(T-1).**

10.7.1.1. Adequate office space and classroom with appropriate heating and cooling are required in the academic and practical training area. See AFMAN 32-1084, *Facility Requirements*, for facility requirements.

10.7.2. Aircraft will have a fully configured and operational (electrical and mechanical) weapons system for load training purposes. **(T-1).**

10.7.2.1. If a permanent load trainer (i.e., Armament Systems Trainer and/or GITA) is assigned, it also will have a fully configured and operational weapons system. **(T-1).**

10.7.2.2. In addition, WS will develop a schedule for periodic maintenance to weapons system components. **(T-1).**

10.7.2.3. **(Added-AFMC)** [DEV] 412TW is authorized the following exceptions:

10.7.2.3.1. **(Added-AFMC)** [DEV] When using the F-16 Block 15 GITA for weapons load crew training:

10.7.2.3.1.1. **(Added-AFMC)** [DEV] Block 50 pylons physically installed on a Block 15 aircraft remain unconnected due to the different connector alignment.

10.7.2.3.1.2. **(Added-AFMC)** [DEV] 1760 capable munitions cannot hook up electrically to the pylon because the connectors are of different design and are not compatible.

10.7.2.3.1.3. **(Added-AFMC)** [DEV] Weapons load training requirements for F-16A, AM, C/D, CG and CJ configurations are completed using the appropriate MDS flight manual to obtain load configurations. The 1F-16C-33-1-2, 1-F-16AM-33-1-2 and all applicable C/AM loading checklists are used for load crew training.

10.7.2.3.2. **(Added-AFMC)** [DEV] When using BRU-61, serial number 2 and 3 for weapons load crew training on F-22 aircraft:

10.7.2.3.2.1. **(Added-AFMC)** [DEV] BRU-61, serial number 2 contains four inert GBU-39s and is different from a standard BRU in that it does not have internal compressors or orifices and contains one additional jimmi cable. The shell and external hardware is the same as a standard BRU capable of facilitating weapons load training.

10.7.2.3.2.2. **(Added-AFMC)** [DEV] BRU-61, serial number 3 is an empty rack and is different from a standard BRU in that it does not have internal electronics, compressors or orifices. The shell and external hardware is the same as a standard BRU capable of facilitating weapons load training.

10.8. Weapons Academics. All 2W1X1s (and civilian equivalents performing in 2W1 capacity) assigned to a wing regardless of duty position, and non-2W1X1 personnel who maintain specific weapons task qualification will complete initial and recurring (not exceeding a 24-month interval) weapons academic training. **(T-1).**

10.8.1. Complete initial academic training before the start of any practical training. **(T-1).**

10.8.1.1. Recurring academic training may also be part of training and recertification for failed loads.

10.8.1.2. Initial and recurring course outlines may be combined.

10.8.1.3. A minimum score of 80 percent must be attained to receive credit for academic testing. **(T-1).**

10.8.2. Coordinate training requirements and course control documents annually through Wing Safety or the safety officer and MT. **(T-1).**

10.8.2.1. Wing Safety will approve all nuclear surety training lesson plans. **(T-1).**

10.8.2.2. The WWM is the final approval authority for course documents. **(T-1).**

10.8.3. Weapons academic training may fulfill the requirements for explosive safety and nuclear surety training if requirements of AFI 91-101 and AFMAN 91-201 are met. Course control documents are tailored to unit and contingency needs and, as a minimum, will include the following items:

10.8.3.1. Local publications that prescribe weapons related operating procedures or directives. **(T-1).**

10.8.3.2. Safety (ground and explosive) and security. **(T-1).**

10.8.3.3. Aircraft, munitions, AGE, SE, TMDE, and munitions trailer familiarization. **(T-1).**

10.8.3.4. Testers, handling equipment and special tools. **(T-1).**

10.8.3.5. Operations in revetments/protective aircraft shelters. **(T-1).**

10.8.3.6. Weapons storage and security system vaults (tasked units). **(T-1).**

10.8.3.7. Applicable command unique training requirements in 36-26XX supplements. **(T-1).**

10.8.3.8. Hazards inherent during CSO. **(T-1).**

10.8.3.9. Task Assignment List (TAL) and applicable -16/-33 TOs (initial academics/ load crew personnel only). **(T-1).**

10.8.3.10. Explain Master Nuclear Certification List, Dull Sword definition and reporting procedures IAW AFMAN 91-221 and other related directives (applies to all units with nuclear certified equipment regardless of mission). **(T-1).**

10.8.3.11. Nuclear weapons systems fault isolation and troubleshooting procedures (if applicable). **(T-1).**

10.8.3.12. Explain procedures for operations involving nuclear weapons, to include safety wiring and sealing, use of Tamper Detection Indicators (TDI), two-person concept, no-lone zone, personnel reliability program (PRP), and AF Form 504 custody transfer procedures (if applicable). **(T-1).**

10.8.3.13. Discuss accident, incident and deficiency reporting. Include in this training: DULL SWORD, AVOID AMBER, AVOID RED, BENT SPEAR, BROKEN ARROW, NUCFLASH, EMPTY QUIVER, Weapons Custody and Control Procedures and Command Disablement Systems (if applicable). **(T-1).**

10.8.4. Weapons Expediter training. Weapons Expediter training will be instructed by the Weapons Academic Instructor. **(T-1).**

10.8.4.1. Initial training is required prior to assuming duties as a Weapons Expediter. **(T-1).**

10.8.4.2. Expediter training will address the following subject areas:

10.8.4.2.1. Basic Expediter duties within this AFI. **(T-1).**

10.8.4.2.2. AF Forms 2430 and AF Form 2434 documentation. **(T-1).**

10.8.4.2.3. Munitions flightline accountability. **(T-1).**

10.8.4.2.4. Emergency procedures. **(T-1).**

10.8.4.2.5. NET Explosive Weight/Explosive Site Planning. **(T-1).**

10.8.4.2.6. Review and monitor JSTs (screen 469, 100, and 122 as a minimum). **(T-1).**

10.8.4.2.7. Aircraft MESLs (as applicable). **(T-1).**

10.8.4.2.8. Maintenance on conventional and nuclear explosives loaded aircraft. **(T-1).**

10.8.4.2.9. MNCL items (as required) and nuclear policies pertaining to flightline activity. **(T-1).**

10.8.4.2.10. **(Added-AFMC)** CAS AIT procedures (after beddown is complete). **(T-2)**.

10.9. Practical Training. Practical training starts when academic training is complete. Practical training is the initial hands-on procedural training given to load crew members. The LSC or lead crews administer practical training to each load crew member on required munitions and aircraft. They ensure practical training duplicates operational conditions to the maximum extent possible and stress requirements such as DLOs, two-person concept, safety wiring and sealing/roto sealing, controlled access and weapon custody receipt and transfer procedures, as required.

10.10. Task Assignment List (TAL). A TAL is a functional grouping of procedural steps from applicable -16/-33 series TOs, by crew position, to be accomplished in sequence by each crew member during a loading operation. TALs are used during training for all loading operations except those for which job oriented procedures have been published (B-2 rotary launcher conventional munitions, and B-52H Conventional Air Launched Cruise Missile (CALCM) pylon and Conventional Stores Rotary Launcher (CSRL) loading/unloading is accomplished procedurally parallel to the -16 procedures). TALs are not a replacement for TO procedures, but are used to standardize procedures and facilitate the training of unit load crews.

10.10.1. TALs will include single, DLO and integrated munitions loading procedures (including gun and chaff/flare loading). **(T-1).**

10.10.2. Units may develop TALs for aircraft armament electrical functional checks (at unit's discretion).

10.10.3. Separate TALs will be developed for weapons qualification tasks performed by non-2W1X1 personnel. **(T-1)**.

10.10.4. MPRLs and semi-annual evaluations are not considered training operations.

10.10.5. Minimum responsibilities of each load crew position (MAJCOM's may develop more detailed TAL's).

10.10.5.1. Two member load crews (CV-22, AC-130H, MC-130E/H/P, HH-60 and MQ-1).

10.10.5.1.1. Crew member number one will be the load crew chief and is in charge of the loading operation. **(T-1).**

10.10.5.1.2. Crew member number two will assist crew member number one in performing the aircraft preparation and loading munitions. **(T-1).**

10.10.5.2. Three member load crews. (AC-130U/W, A/OA–10, F–15, F–16, F-22A, F-35 and MQ-9).

10.10.5.2.1. Crew member number one will be the load crew chief and is in charge of the loading operation. **(T-1).**

10.10.5.2.2. Crew member number two will perform aircraft preparation, load munitions, and assist as required. **(T-1).**

10.10.5.2.3. Crew member number three will perform munitions preparation, operate the bomblift truck, and assist as required. **(T-1).**

10.10.5.3. Four member load crews. (B–1, B–2, and B–52).

10.10.5.3.1. Crew member number one will be the load crew chief and is in charge of the loading operation. **(T-1).**

10.10.5.3.2. Crew member number two will perform the aircraft preparation and assist as required. **(T-1).**

10.10.5.3.3. Crew member number three will perform munitions preparation and assist as required. **(T-1).**

10.10.5.3.4. Crew member number four will operate the bomb lift truck and assist as required. **(T-1).**

10.11. Munitions Aircraft Loading Certification/Decertification.

10.11.1. Certification. These guidelines are used to establish the weapons standardization program. A minimum of one certifying official is required for two-person load crews. A minimum of two certifying officials are required to evaluate three and four-member load crews. Certification and training requirements are as follows:

10.11.1.1. LSC, lead crew and load crew personnel will be certified by position. **(T-1).**

10.11.1.2. Personnel must be certified before loading live conventional munitions, unless loading under the direct supervision of a minimum of two certifying officials. **(T-1).**

10.11.1.3. Personnel must be certified before loading war reserve nuclear weapons. **(T-1).**

10.11.1.3.1. Certified load crews may be evaluated by using war reserve weapons if the weapons are scheduled for loading or movement.

10.11.1.4. LSC, lead crews, and load crews will be certified on all PMs. **(T-1). Exception:** AFGSC units follow **paragraph 3.7.5** of this instruction for nuclear PM requirements.

10.11.1.4.1. The LSC and lead crews are certified on all SMs to provide the cadre for future certification of unit load crews. **(T-1).**

10.11.1.4.2. The LSC is certified (or qualified for items so identified by unit tasking) on unit LMs. **(T-1).**

10.11.1.4.3. The WWM determines the number of additional load crews trained and certified on support and/or limited use munitions. **(T-1).**

10.11.1.5. Load crews can only be certified on up to 15 total MFGs (primary, support, limited). **(T-1).**

10.11.1.6. Dual position (LSC and lead crew) or dual MDS (LSC only) certification is authorized; however, personnel will not be certified on more than 15 UCML/TTML primary MFGs. **(T-1).**

10.11.1.6.1. Proficiency requirements are accomplished on both aircraft IAW this chapter.

10.11.1.6.2. Personnel who are dual position certified will ensure they comply with MPRL and Semi-Annual Evaluations (SAE) requirements in both positions for which they are certified; they will not alternate between the two. **(T-1).**

10.11.1.6.3. In the dual or secondary position, personnel will only load munitions for which they are certified, and will comply with requirements stated above. **(T-1).**

10.11.1.6.4. Only dual certify in the MFGs required to meet mission requirements. **(T-1). Note:** ARC dual position certification of full time technician's or dual MDS (LSC only) certification of load crew members is authorized; however, they will not be certified on more than 15 MFGs. **(T-1).**

10.11.1.7. Load crew member certification is valid worldwide with gaining WWMs concurrence. Reassignment does not necessarily require recertification by the gaining unit if the individual is certified on the same munitions, aircraft, and load crew position; and if MPRL or SAE requirements are current.

10.11.1.7.1. Units will develop procedures to ensure load crew certification status is provided to the individual prior to Permanent Change of Station (PCS) departure. **(T-3).**

10.11.1.8. Units will alternate loading operations on different AME configurations for same munitions. **(T-2).**

10.11.1.9. Personnel certified to load nuclear weapons on aircraft, will perform weapons transfer and tie-down procedures to and from trailers, WS3 vaults, and support stands for which load standardization training has been established and conducted IAW this instruction. **(T-2).** These actions are not required as separate certification items.

10.11.2. Decertification. Document decertification and/or disqualification actions in the WLCMT or MAJCOM-approved equivalent. **(T-1).** Decertify and disqualify individual load crew members if they:

10.11.2.1. Fail to complete a required evaluation (SAE, MPRL, Qualification). **(T-1).**

10.11.2.1.1. If a load crew member is on TDY, emergency leave, incapacitated, or involved in an unannounced local or higher headquarters exercise/contingency operation, do not decertify or disqualify the member providing the current

SAE/MPRL/Qualification requirements (plus all past-due evaluations) are completed within one month of returning to duty (two month for ARC). **Exception**: Members who fail to complete a required MPRL on a certification item within a 6-month period, (3 months for short tour locations), will not be decertified on the particular item(s) until the expiration of the 6-month certification period, at which time practical training must be re-accomplish for recertification. **(T-1)**. **Note**: (ARC only) Provisions in this paragraph also apply when individuals are excused/rescheduled from a Unit Training Assembly (UTA) and when loading operations are cancelled due to inclement weather.

10.11.2.2. Fail to accomplish recurring academic training. **(T-1).**

10.11.2.2.1. All personnel exceeding the 15-month interval will not operate, handle, transport, maintain, or load munitions until academic training is accomplished. **(T-1).**

10.11.2.3. Fail an evaluation due to the following criteria (applies to initial certification, MPRLs, Quarterly's and SAEs):

10.11.2.3.1. Safety Error. **(T-1).** A violation of safety publications, TO warnings, etc., any unsafe act (personal injury or death). Evaluators will immediately intervene to prevent such acts. **(T-1).**

10.11.2.3.2. Reliability Error. **(T-1).** A violation of TO requirements that could reasonably lead to damage/premature failure of equipment, prevent safe reliable operation of weapons system or weapon release, or intervention by the evaluator to prevent such violations.

10.11.2.3.3. Lack of technical proficiency. **(T-1).** Any load crew member failing to demonstrate technical proficiency results in a failed rating.

10.11.2.3.3.1. A crew member exceeding three technical order errors results in a fail rating for lack of technical proficiency.

10.11.2.3.4. Time standard. **(T-1).** Exceeded time standard results in a failed rating for the load crew chief.

10.11.2.3.4. **(AFMC)** [DEV] Within the 412TW, the Wing Weapons Manager will establish time goal for civilians.

10.11.2.3.4.1. If the time standard is exceeded for other load crew member's lack of technical proficiency, the Load Team Chief does not need to be decertified. Time standard will not be applied to flightline evaluations. **(T-1).**

10.11.2.4. When a member is decertified on a munition, the member will be decertified on all items within the MFG. **(T-1).** Personnel may recertify on any MFG item. **Note:** Bomber units may certify by loading methods for nuclear munitions. This will be accomplished by documenting the munition method in block 7 of the 2435. EXAMPLE, AGM-86/B Pylon, AGM-86/B CSRL, B-61/83 RLA, B-61/83 S/B etc.

10.11.2.4.1. For integrated loads, the evaluator may decertify on all munitions or a specific munition loaded. When the same rating is not applied to all munitions loaded during an integrated load, the load crew records will be annotated accordingly. **(T-2).**

10.11.2.4.2. A failure for safety or reliability does not result in complete retraining/recertification for the loading task. At the discretion of the evaluator, sub-task retraining or thorough critique may be used to satisfy retraining/recertification requirements.

10.12. Proficiency Review Period. Immediately following initial certification, crews will load one-third of all munitions monthly for a minimum of three months, after which the LSC or lead crew will recommend to the WS SUPT to place them in the normal bi-monthly evaluation cycle (NA for short tour locations, ARC, and part-time contractors). **(T-1).**

10.13. Minimum Required Proficiency Load. All certified load crews will perform proficiency loads and be evaluated by the LSC or a lead crew. **(T-1).**

10.13.1. Each munition an individual is certified to load, regardless if it is a primary, support or limited use munition, will be loaded at least once within a six month period (three month period for short tour locations). **(T-1).**

10.13.1.1. One third of the required munitions will be loaded bi-monthly (monthly for short tour locations) to demonstrate crew proficiency. **(T-1).**

10.13.1.2. WWM will ensure munitions with multiple configurations such as JDAM MFG, AIM-9 L/M/X are loaded in different months to provide adequate munitions coverage during the year. **(T-1).**

10.13.1.2.1. Dual-status technicians in Classic Associations will load to the above standard. **(T-1)**.

10.13.1.2.2. Traditional Guard and Reserve members in Classic Associations will load to the ARC standard. **(T-1).**

10.13.1.2.3. ARC and RegAF members assigned to Active Associations. All UCML/TTML tasked munitions will be loaded/evaluated within a time-frame not to exceed 12 months. **(T-1).**

10.13.2. MPRL credit may be given during any certified loading operations on the flightline provided complete MPRL requirements are performed and evaluated by WS personnel not to exceed 1 MPRL credit per SAE (quarterly evaluation for short tour locations). MPRL credit during flightline evaluations is only authorized when loading live munitions, Dummy Air Training Missiles (DATM), or D-2 type inert munitions.

10.13.3. In units where no munition training assets exist (Cluster Bomb Unit CBU-105, M129, etc.) difference training will be provided prior to initial certification and during recurring academics training. **(T-1).**

10.13.4. Load crews in air defense/air superiority units perform proficiency loads bi-monthly using all committed primary munitions. **(T-1).**

10.13.5. Nuclear-tasked units. LSC, lead crews, and load crews will load nuclear PMs monthly. **(T-1).**

10.13.5.1. Only one type of munition within a MFG requires loading each month.

10.13.6. Load crew integrity must be used to the maximum extent possible. **(T-3).**

10.13.6.1. **(ARC Only)** : Certified Load Crew Chiefs may perform MPRLs in any position provided they load under the supervision of LSC/lead crew using inert training munitions only. This stipulation applies at home station only. No MPRL credit is given to those individuals during evaluations unless loading in the position for which they are certified. This enables units the flexibility to evaluate remaining crew members when a member may not be available to form a full crew and will only be used as a necessary.

10.13.7. Load crews will annually perform an evaluated load while wearing the ground crew CWDE using 33-1-2/33-2-1 procedures. **(T-2).** Credit may be given during exercises provided operations are evaluated by WS personnel. **(T-2)**.

10.14. Load Crew Semi-Annual Evaluations (SAE). The LSC evaluates each load crew once semi-annually on at least one of the unit PMs (SM or LM if no PM listed); all unit PMs will be used on a rotating basis. **(T-1).**

10.14.1. SAE's are not required for lead crews.

10.14.2. Load crews failing to accomplish semi-annual evaluations on all munitions will be decertified unless exempted IAW provisions in this chapter. **(T-1).**

10.14.3. If an integrated load is accomplished as the SAE (e.g., AIM-9, -120), document the SAE accordingly.

10.14.4. There is no need to document both SAE and MPRL. **Note:** (ARC Only) CSO (A-10, F-15, F-16) and DLO (bombers only) procedures may be used to fulfill these requirements provided the entire load is evaluated.

10.14.5. Certified Load Team Chiefs may perform SAEs in any position provided they load under the supervision of LSC or lead crew using inert conventional training munitions only. This requirement applies at home station only.

10.14.6. No SAE credit will be given to those individuals during evaluations unless loading in the position for which they are certified. **(T-1).** This enables units the flexibility to evaluate remaining crew members when a member may not be available to form a full crew and will only be used as a necessary.

10.14.7. The letter "E" will be placed after the date for the semi-annual evaluation regardless of rating. **(T-1).**

10.15. Documenting Load Crew Certification/Decertification/Qualification.

10.15.1. The LSC will manage load crew certifications, qualifications, SAEs (quarterly evaluation for short tour locations), and MPRLs by means of the WLCMT or MAJCOM approved equivalent. **(T-1).**

10.15.1.1. All decertification and subsequent recertification actions must be documented on AF Form 2435 via WLCMT or MAJCOM approved equivalent process. **(T-1).**

10.15.2. Enter one of the following codes in the month column, as applicable, if required loads are not completed and provisions of this chapter apply: Temporary Duty (TD), Emergency Leave (LV), Incapacitated (ED), Exercises/Contingency (EX), or Weather (WX). **(T-1).**

10.15.2.1. Code outs will not be used as a substitute for ineffective scheduling. **(T-1).** WWM has final decision authority on coding disputes.

10.15.2.2. RPA contractor personnel who deploy immediately after weapons load certification are not required to be coded out monthly.

10.15.2.3. Members who have completed all required training and have an annotated AF Form 2419 are not required to be coded out for the duration of TDY.

10.15.2.3.1. Member will be decertified IAW **paragraph 10.11.2.1.1** of this instruction upon return from TDY. **(T-1).**

10.15.3. Route AF Form 2419 after semi-annual evaluations (quarterly for short tour locations) to the Weapons Section NCOIC/Chief, Operations Officer/MX SUPT, WWM, and the WS SUPT. **(T-1).**

10.15.4. Send printouts from the WLCMT or MAJCOM-approved equivalent product with the crew to TDY locations if loading tasks are to be performed. **(T-1).**

10.15.4.1. The following statement will be added after the last entry on each product: "AF Form 2435 reviewed; the member is certified/qualified on the items listed on this product." **(T-1).** This statement is followed by the signature and date of a WS certifying official. 10.15.5. Academic and practical training will be tracked and documented in a MIS, however the WLCMT or MAJCOM-approved equivalent may be used for this purpose. **(T-2).**

10.16. Weapons Task Qualification. A weapons task qualification is a munitions-related task that does not require certification. Individuals require both initial/recurring weapons academics and initial/annual practical qualification training for these tasks.

10.16.1. All individuals will receive full task qualification training to include use of the checklist. **(T-1).**

10.16.2. Recurring practical training should be conducted during normal flightline operations to the maximum extent possible.

10.16.3. Training is provided, documented and tracked by WS.

10.16.4. Checklist Qualification. Indicates that the person with the checklist is trained, knowledgeable and in-charge of the overall operation or task.

10.16.4.1. Members must possess a minimum 5-skill level to be checklist qualified. **(T-1).**

10.16.5. Full scale inert/training munitions (e.g., BDU-50/TGM-65/CATM-120/M129). If load crew personnel are certified on a munition, they are considered qualified (by position certified, except #1 position) on its inert version.

10.16.5.1. In the event the load crew member is not certified on an SM or LM, then load crew personnel will require annual training on the inert/training version and it will also be tracked as a qualification. **(T-1).**

10.16.6. Two or more qualified personnel in AFSC 2W1X1 (or civilian equivalent) shall be required to perform the following tasks:

10.16.6.1. Practice Bombs: load and unload BDU-33, BDU-48 and MK-106. **(T-2).**

10.16.6.2. Load and unload ammunition in internal and external gun systems (the GAU-8 requires three people). **(T-2). Exception:** Personnel do not load GAU-2, GAU-18, GAU-21, or M240 machine guns and are authorized to unload ammunition only during Hot Gun emergency or gun jams that require safing prior to maintenance actions.

10.16.6.3. Load and unload single 2.75 rockets. **(T-2).**

10.16.6.4. Load and unload Miniature Air Launched Decoy (MALD) (three person minimum). **(T-2).**

10.16.6.5. Load and unload captive AGM-114 missiles (M36). **(T-2).**

10.16.7. Two or more qualified personnel in any aircraft maintenance AFSC shall be required to perform the following tasks (members must be qualified in all aspects of task to be performed; i.e., aircraft prep, rack/launcher prep, munitions prep, etc.):

10.16.7.1. Install and remove impulse cartridges if the task is not accomplished as a part of a loading operation. **(T-2).**

10.16.7.2. Load/unload pyrotechnics. **(T-2).**

10.16.7.3. Install and remove chaff and flare magazines and other defensive countermeasures. **(T-2).**

10.16.7.4. Perform portions of the conventional loading checklist pertaining to delayed-flight or alert, and IPL/safing procedures. **(T-2). Note:** Removal of dome cover(s) is not considered IPL and does not require initial/recurring academics.

10.16.7.5. Perform munitions/missile isolation procedures to facilitate other maintenance on conventional loaded aircraft only. **(T-2).**

10.16.7.6. Install and remove CATM/DATM-9 missiles (must have three personnel minimum and one person must be checklist qualified). **(T-1)**.

10.16.7.7. Install and remove Acceleration Monitor Assemblies (AMA) and Airborne Instrumentation System (AIS) pods. Academics are not required for AMA and AIS pods. (Minimum crew size per TO directives). AMA and AIS qualification training is a one time trained item that will be entered on an AF Form 797. **(T-1)**.

10.16.7.8. **(ANG alert facilities only)** : Install and remove Argon (TMU-72 coolant tank) in AIM/CATM-9. **(T-1).**

10.16.8. A Load Team Chief may perform in any crew member position when loading inert/training munitions if certified on the parent munition. **(T-1).**

10.16.8.1. The two and three members can only perform those positions for which they are certified or qualified. **(T-1).**

10.17. Munitions Load Time Standards. All munitions listed in a single block comprise a MFG for the respective aircraft mission type. The load time standards apply to all operational users of the munitions or aircraft listed and are the minimum proficiency requirements for weapons load crews.

10.17. (AFMC)[DEV] Within the 412 MXG. The Wing Weapons Manager will establish time goal for civilians.

10.17.1. Units may establish more restrictive standards for local use.

10.17.2. Unless otherwise noted in **Table 10.1**, **Table 10.2**, or **Table 10.3**, the WS SUPT shall determine and set load time standards for qualification items, for integrated loads (including nuclear, if tasked), and for loads performed wearing CWDE. **(T-3).**

10.17.3. All items require certification IAW this chapter, unless otherwise indicated.

10.17.4. The standard load times, from the MFG **Table 10.1**, **Table 10.2**, and **Table 10.3** are standard load times for initial and recurring training and evaluations for the respective single store (including full munitions preparation) and installation of impulse cartridges, if required.

10.17.4.1. Except for BRU-57, an additional 10 minutes is allowed for each added aircraft station check on fighter aircraft, if performed as part of an evaluated load.

10.17.4.2. An additional 7 minutes is allowed for each like store added to fighter aircraft loads.

10.17.4.3. Load times are additive when more than one type of munition is loaded on fighter aircraft. For example, if an F-16 is to be loaded with two AIM-9s and a MK-82, the load crew shall be allowed 20 minutes for the first AIM9, 7 minutes for the second AIM-9, and 25 minutes for the MK-82, for a total of 52 minutes.

10.17.4.4. Loads may be accomplished without full munitions preparations; however, more restrictive time standards must be developed.

10.17.4.5. Units may develop optimum time standards for integrated loads (including nuclear, if tasked).

Table 10.1. Fighter Aircraft Munitions Family Group and Munition Load Time Standards (in minutes).

MUNITIONS FAMILY GROUP	A-10	F-15	F-16	F-22	F-35	REMARKS
AIM-9 L/M/X	20	20	20	30	20	Note 6
AIM-120		25	25	40	25	Note 6
AGM-65	25	25	25			Note 1, 2, 6
AGM-88			25			Note 6
AGM-154 (JSOW)		25	25			Note 1, 5, 6
AGM-158 (JASSM)		25	25			Note 1, 6, 9
B-61		90	90			Note 3
CBU-87/89	25	25	25			Note 6
CBU-103/104/105/107 (WCMD)	25	25	25			Note 5, 6
GBU-10/12/51	25	25	25		25	Note 6
GBU-24/27, EGBU-24/27		30	25			Note 1, 6
GBU-28, EGBU-28		35				Note 1, 6, 9
GBU-31/32/38/54/56 (JDAM)	25	25	25	35	25	Note 5, 6
GBU-39/53 (SDB)		25	25	40	25	Note 6, 7
MK81/82/83/84/110 Low Drag (LD)	25	25	25	25		Note 4, 6
MK82/MK84 High Drag (HD)	25	25	25			Note 4, 6
QUALIFICATIONS	A-10	F-15	F-16	F-22	F-35	REMARKS
20MM/30MM/25MM	X	X	X	X	X	
ADM-60 (MALD)			X			
ALE-50/70			X		X	
CHAFF/FLARES	X	X	X	X	X	

M129/PDU-5B	X	X	X			
ROCKETS (2.75)	X		X			
SUU-25	X		X			

Notes:

1. Add 15 minutes for each additional store or LAU-117.
2. Time is for one LAU-117. The time for loading one pre-loaded LAU-88 is 45 minutes; two LAU-88s, 60 minutes; single missile out of container, 35 minutes; for a single missile that must be transferred out of the container, 50 minutes; for three missiles out of the container, 60 minutes; for three missiles in their containers, 90 minutes.
3. Includes a short flight circuit test (FCT), such as F-16, 75060/W-11; or F-15E, A/E24T-199 check. When a long FCT is to be included in a loading operation, add the time standard listed in the applicable -6 tech order to the time standard.
4. Add 5 minutes for each fuze extender used.
5. F-16 add 35 minutes if BRU-57 functional check is performed as part of the load.
6. Add 10 minutes if functional check is to be accomplished as part of the load evaluation.
7. Time standard for a preloaded carriage system is 40 minutes.
8. Add 5 additional minutes when loading AGM-158/GBU-28 on F-15E Station 5

Table 10.2. Bomber Aircraft Munitions Family Group and Munition Load Time Standards.

MUNITIONS FAMILY GROUP	B-1	B-2	B-52 INT	B-52 EXT	REMARKS
AGM-86			85	95	Note 1, 2, 5
AGM-154		40			Note 1, 3, 4, 7
AGM-158	50	50		50	Note 1, 4, 7
B-61/B-83		45	85		Note 1, 2, 6
CBU-87/89	40		40	40	Note 1, 3, 7
CBU-103/104/105/107 (WCMD)	40			40	Note 1, 4, 7
GBU-10/12				40	Note 3, 7
GBU-28		50		40	Note 3, 4, 7
GBU-31/38/54 (JDAM)	40	40		40	Note1, 4, 7
MK-56/60/62/63/65 (Mines)	40	40	25	40	Note 1, 3, 7
MK-82LD/83LD/84LD/M117/BLU-109/110 (GP LD)	40	40	25	40	Note 1, 3, 7
MK82A, MK84A (GP HD)	40	40		40	Note 1, 3, 7
QUALIFICATIONS	B-1	B-2	B-52-I	B-52-E	REMARKS
ADM-160 (MALD)				X	
ALE-50	X				
CHAFF/FLARES	X			X	
M129			X	X	

Notes:

1. Pre-load; time standard 40 minutes for preloaded B-1 CBM, MPRL and SECBM.

   B-52/B-2 add 40 minutes for each additional preload CSRL/RLA or Pylon on the B-52.

2. B-52 post-load for one missile: Add 50 minutes for AGM-86B, 60 minutes for

AGM-86D, and 70 minutes for AGM-86C. Add 5 minutes for each additional missile.

B-2 post-load check add 20 minutes if accomplished as part of the load.

3. Add 3 minutes for each additional store Non MIL-STD-1760E capable store. Exception:

   Add 10 minutes per store for GBU/EGBU 10/12/28.

4. MIL-STD-1760E; Add 5 minutes per additional store. Exception:

   B-52 add an additional 5 minutes per store if MIL-STD-1760E cable installation is required.

   B-1 and B-52, for AGM-158 load, add 20 minutes per additional store.

   B-2, for the AGM-158 load, the first store is 50 minutes; add 20 minutes per additional store.

   The LSC will develop a local time standard for the 8th weapon.

5. Time for single missile loading is 70 minutes per store.
6. Time for single bomb is 40 minutes, add additional 15 minutes per store; B52 add 40 minutes for post load check if part of load. B-2 add 20 minutes if post-load check is performed as part of the load.
7. B-2 add 20 minutes if post load checks are performed part of the load.

   B-1 add 45 minutes if status checks are performed as part of the load. N/A for B-52.

Table 10.3. Remote Piloted/Special Mission Aircraft Munitions Family Group and Munition Load Time Standards.

	MQ-1	MQ-9	AC-130U, W, and J	REMARKS
AGM-114	20	20		Note 1, 2
AGM-176 (SOPGM)			30	
GBU-12		25		Note 1, 2
GBU-38/GBU-54		25		Note 1, 2
GBU-39			45	
QUALIFICATIONS				REMARKS
25MM/30MM			X	
CHAFF/FLARES			X	
	Notes: 1. Add 15 minutes for each additional store or M299. 2. Add 10 minutes if functional check is to be accomplished as part of the load evaluation.			

Chapter 11

ADDITIONAL MAINTENANCE REQUIREMENTS AND PROGRAMS

11.1. Facility Housekeeping and Contamination Control. Units will publish housekeeping and contamination procedures which protect the health of workers and maintain areas as free as practical from surface contamination. **(T-1)**. Units will:

11.1.1. Ensure Bioenvironmental Engineering (BE) approved workplace-housekeeping procedures are employed to prevent the spread of contamination within a work center. **(T-1).**

11.1.2. Emphasize controlling the source of the contamination and ensure workplace personnel follow proper work procedures, PPE use, and hygiene practices. **(T-1).**

11.1.3. Ensure housekeeping procedures will account for the dangers and hazard exposures found in the work center and will be consistent with mitigation methods outlined in AFI 91-203. **(T-1)**.

11.2. Personal Wireless Communications Systems (PWCS) Management.

11.2.1. Maintenance Communications. Reliable, redundant, and effective communications systems are essential for efficient maintenance operations. These systems should provide accurate, timely, secure, programmable frequency and jam resistant communications needed to accomplish the maintenance mission in a fully deployed and isolated mode. The MXG/CC has the overall responsibility to ensure adequate PWCS communication support is available to support mission requirements.

11.2.2. Commanders or designated representative will implement and comply with the PWCS management requirements IAW AFI 33-590, AFI 33-580, *Spectrum Management*, AFI 33-200, and AFMAN 33-153, *Information Technology (IT) Asset Management(ITAM).* **(T-1).** The following general guidelines apply:

11.2.2.1. Allowance for specific radios is shown in AS 660, *Equipment Allowances for Non-Weapon Systems Communications Requirements*, *Repair Cycle Data Listing*. Process requests for specific radio equipment to support maintenance activities IAW AFI 23-101, AFI 33-590, AFI 33-580, AFI 33-200, and AFH 23-123V3, *Air Force Equipment Management*.

11.2.3. A VHF/UHF radio is authorized for use in maintenance operations to facilitate communications between aircraft and maintenance personnel. Additionally, aircrews may relay advance aircraft status information to maintenance personnel using VHF/UHF channels.

11.2.3.1. Maintenance Operations will coordinate procedures for use of these radio communications with operations and other essential wing organizations. **(T-1).**

11.2.3.2. For effective flightline operations, more than one non-tactical radio nets are authorized when large numbers or different types of weapon systems are assigned or when ASs so specify.

11.3. 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. Normally, only maintenance requirements that have a definite potential for personnel injury or damage to equipment will be included in the SCR. Other tasks requiring special training or qualifications may be managed on the SCR. The SCR is used to build personnel rosters for deployments, shift schedules, and assess workforce capability. The MXG/CC and CD are not required to be on the SCR by virtue of their position as the SCR approval authority.

11.3.1. MXG/CC will approve items identified in **Table 11.1**, Note 1. **(T-1).**

11.3.1.1. The Squadron Operations Officer/MX SUPT approves individuals in their primary AFSC based on their experience and technical expertise regardless of their assigned skill or position. 7-skill level personnel may be certified outside their primary AFSC only when specific CUT task qualification is documented in their training records.

11.3.1.2. AFE personnel certified to clear "Red-X" discrepancies must be annotated on the SCR. **(T-1).**

11.3.1.2.1. Requests to add and remove AFE personnel from the SCR will be generated by the AFE SUPT and coordinated through the OG/SUPT and MXG/SUPT prior to addition to the SCR. **(T-2).**

11.3.1.3. The SCR will be reviewed and signed semi-annually by the Squadron Operations Officer/MX SUPT to verify all entries are current and accurate and to ensure task certifications have been completed. **(T-1).**

11.3.1.3.1. The Squadron Operations Officer/MX SUPT will coordinate with the AFE SUPT to validate currency of AFE personnel on the SCR (if applicable). **(T-1).**

11.3.1.4. MXG/SUPT will review and sign SCR actions for those individuals administratively assigned to MO (QA, AFREP, etc.). **(T-1).**

11.3.1.4.1. MXG/SUPT will coordinate with the Field Training Detachment (FTD) CC/SUPT to validate currency of FTD personnel on the SCR. **(T-1).**

11.3.1.5. WWM will review and sign WS SCRs. **(T-1).**

11.3.2. TFI units will establish a process for approving SCR additions in a MOA/MOU to provide visibility across participating organizations. **(T-1).**

11.3.3. The MXG/CC may waive selected 5-skill level personnel, in the rank of SrA or higher, for tasks normally requiring a 7-skill level requirement to facilitate the production effort. Waived 5-skill level personnel should be closely monitored and kept to the minimum required to accomplish mission generation.

11.3.3.1. Operations Officer/MX SUPT or equivalent will retain file copies of approved waivers. **(T-1)**.

11.3.3.1.1. Approved waiver file copies may be discarded if SCR specifically identifies task as waived in the MIS. **Note:** For ANG, the approved waiver file must be maintained by Maintenance Supervision or equivalent until the SCR is updated and signed by the MXG/CC (see **paragraph 11.3.1.1** of this instruction).

11.3.3.2. Certified weapons load crew chiefs (load crew member position number 1) by virtue of their task certification and position, serve as inspectors for weapons loading

tasks only and do not require a waiver (2W0XX certified munitions inspectors are exempt from these requirements).

11.3.4. MAJCOM Waiver Policy. If local conditions require assignment of other than mandatory SCR grade (to include civilian equivalents) and skill level prerequisite requirements, and cannot be fulfilled using the MXG/CC authority stated in **paragraph 11.3.3** of this instruction then the MXG/CC (or equivalent) must request a waiver from the MAJCOM. **(T-2).**

11.3.5. MAJCOMs may add additional mandatory critical tasks or inspections they deem necessary.

11.3.5.1. Identify each task on the SCR by a specific course code.

11.3.6. SCR Documentation. Flight CCs/Chiefs and Section NCOICs/Chiefs will review each individual's qualifications prior to recommending approval to perform SCR tasks to the appropriate approval level. **(T-1)**.

11.3.6.1. AF Form 2426, *Training Request and Completion Notification* or MAJCOM-approved (ANG locally approved) form is used by the work center supervisor to add or remove an individual to the SCR. Additionally, removal from the SCR may be accomplished by lining through the task on the SCR and notifying training section to update the MIS.

11.3.6.1. **(AFMC)** AFMC Form 64, *Request for Placement on Special Certification Roster*, may be used in lieu of AF Form 2426. **(T-2).**

11.3.6.2. The appropriate level of authority approves the individual for addition to the SCR as listed in **Table 11.1**.

11.3.6.3. On approval, the Unit Training Manager IAW AFI 36-2650, loads the approved name into the MIS.

11.3.6.4. Flight CCs/Chiefs and Section NCOICs/Chiefs will retain their copy of AF Form 2426 or MAJCOM-approved form until they verify proper loading. **(T-1)**.

11.3.6.5. Appointment letters are not required if loaded in MIS.

11.3.6.5.1. Work center supervisor, AMU/Flight supervision, Operations Officer/MX SUPT, SQ/ CC, or MXG/CC may decertify individuals at any time and remove them from the SCR.

11.3.7. Units will ensure a current copy of the SCR is taken on all deployments. **(T-2)**.

Table 11.1. Mandatory Special Certification Roster (SCR) and Prerequisites (T-1).

	A	B
ITEM	Mandatory SCR Item Titles	Prerequisites
1	All Systems "Red-X" (no egress, welding, munitions, fuel cell (in-tank work))	MSgt or higher (or civilian equivalent). (Note 1)
2	Exceptional Release (ER)	
3	"Red-X" Down Grade	
4	All Systems IPI (no egress, welding, munitions, fuel cell in-tank work)	
5	Installed Engine Run Certifying Officials	MSgt or higher (or civilian equivalent), or a fully qualified/certified contractor or AFETS/CETS representative and possess one of the following AFSCs: 2A671, 2A571/2/4, and 2A373/7/8. One year minimum engine-run experience on applicable MDS (not applicable at short tour locations). (Note 1) MXG/CC may waive qualified TSgts. MAJCOMs will determine and document AFSC and skill level requirements for 5th Generation aircraft.
6	Aircraft Inlet/Intake/Exhaust Certifying Officials	Qualified/certified 7 or 9- skill level(or civilian equivalent), or a fully qualified/certified contractor, AFETS or CETS representative and possess one of the following AFSCs: 2A6X1, 2A5X1/2/4, 2A3X3/8. One year minimum experience on applicable MDS/TMS (not applicable at short tour locations). (Note 1) MAJCOMs will determine and document AFSC and skill level requirements for 5th Generation aircraft.
7	Flexible Borescope Certifying Officials	
8	Engine Blade Blending Certifying Officials	

9	“Red-X” by Primary AFSC (PAFSC) and MDS (For multiple MDSs, list separately)	SSgt or higher, minimum 7-skill level or civilian equivalent (includes MXG/CC-appointed exceptional SrA per paragraph 11.3.3.). (Note 2)
10	IPI by PAFSC and MDS (For multiple MDSs, list separately)	
11	“Red-X” and/or IPI - Limited	5-skill level personnel certified on limited tasks as determined by the unit (Note 1); 5-level Certified Weapons Load Crew Chiefs on loading tasks only. (Note 2)
12	“Red-X” and/or IPI - CUT (For multiple MDSs, list separately), for tasks outside PAFSC	SSgt or higher, minimum 7-skill level (or civilian equivalent), Use for personnel certified on tasks in other AFSCs through CUT training. (Note 2)
13	NWRM packaging	Minimum 7-skill level (or civilian equivalent) (Notes 4 and 5). Must have sufficient subject matter expertise of packaged item to identify asset, must be tasked qualified on accompanying documentation and must have appropriate security clearance and background investigation for asset.
14	Installed Engine Run by MDS	SrA or higher, minimum 5-skill level (or civilian equivalent), with at least 6 consecutive months experience on MDS for which engine run training is required. (Experience must have occurred immediately prior to course enrollment). (Note 2). The MXG/CC may waive the weapons system experience. MXG/CCs may waive qualified 5-skill level A1C for critical manpower shortages. The time on weapon system may also be waived by MXG/CC.
15	Engine Blade Blending	Minimum 5-skill level 2A3X3/7/8, 2A5X1/2/4, and 2A6X1 or civilian

		equivalent. (Note 2). MAJCOMs will determine and document AFSC and skill level requirements for personnel performing blade blending on 5th Generation aircraft.
16	Hot Refueling PAD Supervisor/"A" Member	Minimum 5-skill level, 2AX5X (or civilian equivalent), with a minimum of 1 year flightline maintenance experience. (Note 2)
17	Hot Refueling Team Member (“B” or “D” member)	Flightline maintenance AFSC, with a minimum of 1 year flightline maintenance experience. (Note 2)
18	Aircraft to Aircraft Refueling Supervisor	Minimum 5-skill level with a minimum of 1 year weapon system experience. (Note 2)
19	Uninstalled Engine Operations (Test Stand and ETS) Run by TMS	SSgt or higher 7-skill level 2A6X1 (or civilian equivalent) with a minimum of 6 months current experience on each applicable TMS, unless previously qualified (N/A to short tour assignments). If previously qualified on a different TMS, the 6-month experience requirement may also be waived. (Note 2). MXG/CC may waive 5-skill level SrA with minimum of 6 months’ time on applicable TMS.
20	Uninstalled Engine Run Certifying Officials by TMS	Fully qualified/certified TSgt or higher 2A671 AFSC, civilian equivalent, contractor, or AFETS/CETS personnel with a minimum of one year engine run experience on the applicable TMS. (One year run experience not applicable to short tour assignments). The MXG/CC may waive qualified SSgts and may authorize MT uninstalled engine run instructors as certifying officials. (Note 1)

21	Aircraft Inlet/Intake/Exhaust Certifications	Minimum 5-skill level, 2A3X3/7/8, 2A5X1/2/4, and 2A6X1 (or civilian equivalent). (Note 2). MAJCOMs will determine and document AFSC and skill level requirements for 5th Generation aircraft.
22	Engine Flexible Borescope Inspections	Minimum 5-skill level 2A3X3/8, 2A5X1/2/4, and 2A6X1 (or civilian equivalent). (Note 2). MAJCOMs will determine and document AFSC and skill level requirements for 5th Generation aircraft.
23	Chief Servicing Supervisor (Heavy Aircraft/Commercial Derivative Aircraft)	Minimum 5-skill level with 1 year weapons system experience. (Note 2). Time requirement may be waived by MXG/CC in short tour/en route locations.
24	Concurrent Servicing Supervisor (Fighter Aircraft)	For A-10, F-15, F-16, F-22A aircraft, minimum 7-skill level with a minimum of 1 year weapons system experience. (Note 2). Time requirement may be waived by MXG/CC in short tour locations.
25	W&B Certified/Clear Red X (refer to TO 1–1B-50)	7-skill level (or civilian equivalent), with a minimum of 1 year time on weapon system (Note 2). Time requirement may be waived by MXG/CC.
26	Impoundment Authority (refer to Chapter 7 of this instruction)	(Note 1)
27	CANN Authority	
28	Auxiliary Power Unit (APU) Operation	3-skill level or higher maintenance AFSC. (Note 2)

29	Calibration Limitation Approval (refer to TO 00-20-14)	SSgt or higher, minimum 7-skill level (or civilian equivalent). (Notes 2 and 3)
30	CDDAR Team Chief	MSgt or higher or civilian equivalent. (Note 1). MXG/CC may waive grade requirement.
31	Weapons Task Qualification Manager (WTQM)	TSgt or higher, minimum 7-skill level AFSC 2A871X or 2AX7X (or civilian equivalent). (Note 1)
32	Weapons Task Qualification Crew (WTQC)	Lead will be SSgt or higher, minimum 7-skill level 2AX7X (or civilian equivalent); other crew member minimum 5-skill level 2AX5X (or civilian equivalent). (Note 2)
33	NSS and T-9/T-10/T-11 /T-12/T-20 sound suppressor Fire Control Panel	SrA or higher, (or civilian equivalent) with AFSC 2A6X1 must have a minimum 6 months experience. (Note 2)
34	Aircraft Rapid/Hot Defueling Supervisor	Minimum 5-skill level, 1 year of flightline experience, with 6 months weapon system experience. (Note 2)
35	Clear Red-X when a lost item/tool cannot be located (refer to Chapter 8 of this instruction)	Operations Officer/MX SUPT or above. (Note 1)
36	Aircraft APU Run Certifying Officials	7-skill level (or civilian equivalent), or a fully qualified/certified contractor or AFETS/CETS representative. (Note 1). MXG/CCs may also waive qualified 5-skill level SSgts.

Notes:

1----Approved by MXG/CC

2----Approved by Operations Officer/MX SUPT

3----Operations Officer/MX SUPT may delegate approval authority to the AMU OIC/SUPT or Flight CC/Chief.

4----Munitions inspectors who are trained and certified may annotate serviceability tags for munitions items (TO 11A-1-10).

5---Appointed by the Unit Commander (or equivalent) of units possessing NWRM

Table 11.1. (AFMC) Mandatory Special Certification Roster (SCR) and Prerequisites.

	A	B
ITEM	Mandatory SCR Item Titles	Prerequisites
5	Installed Engine Run Certifying Officials	MSgt or higher (or civilian equivalent), or a fully qualified/certified contractor or AFETS/CETS representative and possess one of the following AFSCs: 2A671, 2A571/2/4, and 2A373/7/8. One year minimum engine-run experience on applicable MDS (not applicable at short tour locations). (Note 1) MXG/CC may waive qualified TSgts. MAJCOMs will determine and document AFSC and skill level requirements for 5th Generation aircraft. (AFMC see Note 6)
6	Aircraft Inlet/Intake/Exhaust Certifying Officials	Qualified/certified 7 or 9- skill level(or civilian equivalent), or a fully qualified/certified contractor, AFETS or CETS representative and possess one of the following AFSCs: 2A6X1, 2A5X1/2/4, 2A3X3/8. One year minimum experience on applicable MDS/TMS (not applicable at short tour locations). (Note 1) MAJCOMs will determine and document AFSC and skill level requirements for 5th Generation aircraft. (AFMC see Note 6)
7	Flexible Borescope Certifying Officials	
8	Engine Blade Blending Certifying Officials	
15	Engine Blade Blending	Minimum 5-skill level 2A3X3/7/8, 2A5X1/2/4, and 2A6X1 or civilian equivalent. (Note 2). MAJCOMs will determine and document AFSC and skill level requirements for personnel performing blade blending on 5th Generation aircraft. (AFMC see Note 6)
21	Aircraft Inlet/Intake/Exhaust Certifications	Minimum 5-skill level, 2A3X3/7/8, 2A5X1/2/4, and 2A6X1 (or civilian equivalent). (Note 2). MAJCOMs will

		determine and document AFSC and skill level requirements for 5th Generation aircraft. (AFMC see Note 6)
22	Engine Flexible Borescope Inspections	Minimum 5-skill level 2A3X3/8, 2A5X1/2/4, and 2A6X1 (or civilian equivalent). (Note 2). MAJCOMs will determine and document AFSC and skill level requirements for 5th Generation aircraft. (AFMC see Note 6)
37 (Added)	T-38 Flight Control /System Rig Certifier	Minimum 7-skill level or civilian equivalent, 12 months experience adjusting system rigging. Certifies specialized MX rig teams to accomplish flight control, canopy, landing gear, door and other systems rigging. (Note 1)
38 (Added)	T-38 Flight Control/System Rig Team Member	Minimum 7-skill level or civilian equivalent, 12 months experience performing system rigging. Performs flight control, canopy, landing gear, door and other system rigging as team member when directed. Member may be CUT trainee (Note 1)
NOTE: For tankers, airlift, bomber and passenger aircraft include the following items 39-45 on SCR.		
39 (Added)	Landing Gear Retraction Supervisor	(Supervisor) SSgt or higher or civilian equivalent, minimum 7-skill level.
40 (Added)	Landing Gear Retraction Member	(Gear handle operator) minimum 5-skill level, and 1 year flightline experience
41 (Added)	Jacking Supervisor	Minimum 7-skill level or civilian equivalent, 6 months system experience
42 (Added)	Jacking Manifold Operator	Minimum 5-skill level or civilian equivalent, 6 months system experience
43 (Added)	Integral Jacking Member (C-17)	Minimum 6 months C-17 experience (Note 2)

44 (Added)	Integral Jacking Supervisor (C-17)	Minimum SSgt (or civilian equivalent), 6 months minimum C-17 system experience (Note 2)
45 (Added)	Integral Jacking Certifying Official (C- 17)	Minimum 7-skill level or civilian equivalent, with minimum 1 year C-17 experience

Notes:

1----Approved by MXG/CC

2----Approved by Operations Officer/MX SUPT

3----Operations Officer/MX SUPT may delegate approval authority to the AMU OIC/SUPT or Flight CC/Chief.

4----Munitions inspectors who are trained and certified may annotate serviceability tags for munitions items (TO 11A-1-10).

5----Appointed by the Unit Commander (or equivalent) of units possessing NWRM

6----(AFMC) Determination and documentation of AFSC and skill level requirements for 5th Generation Aircraft will be determined by Unit Commanders.

11.4. Aircraft Grounding.

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

11.4.1.1. This section does not apply to conditions which are clearly limited to the affected unit/base (e.g., lost tool, fluid contamination, aircraft/equipment damage of known origin, or other strictly local event). In these circumstances, the affected unit follows the impoundment procedures specified in **Chapter 7** of this instruction.

11.4.2. Initial Investigation. The owning MXG/CC or equivalent will direct QA to develop a local OTI IAW TO 00-20-1 and this instruction. **(T-1)**.

11.4.2.1. The OTI will require an inspection of a representative number of systems or units (aircraft, engines, missiles, or munitions) of the same mission and design to determine if the condition exists on other aerospace equipment within the wing's assigned aircraft/systems or equipment. **(T-1).**

11.4.2.1.1. If initial sampling indicates the discrepancy is widespread and has the potential for personal injury and/or further equipment damage, the MXG/CC will

discuss aircraft grounding with the WG/CC and forward a recommendation to the MAJCOM. **(T-1)**.

11.4.2.2. If there is no repair or corrective action specified in technical data, QA will also submit a technical assistance request through the MAJCOM to the appropriate weapon system program manager IAW TO 00-25-107 or equivalent process. **(T-1)**.

11.4.3. Grounding Authority. The approved procedures for grounding aircraft or stand-down for operational reasons are determined and executed IAW AFI 11-401. **(T-1)**.

11.4.3.1. Notification and final reporting for grounding and release status will be accomplished IAW AFI 10-206, *Operational Reporting.* **(T-1)**.

11.4.3.2. Annotate aircraft grounding in the aircraft forms IAW TO 00-20-1. **(T-1).**

11.5. Ramp Inspection Program. Public Law 99-661 requires a pre-flight safety inspection of all internationally scheduled charter missions for the transportation of members of the Armed Forces departing the United States.

11.5.1. Air Mobility Command (AMC) is lead for the DOD in the management and administration of the Ramp Inspection Program.

11.5.1.1. AMC will publish specific guidance for this Program in a supplement to this instruction.

11.5.1.2. AMC/A4M will coordinate with other MAJCOMs as required to accomplish ramp inspections to ensure the maximum efficiency and utilization of resources.

11.5.1.3. When requested by AMC, MAJCOMs will provide support to reduce the TDY and manpower impact associated with the execution of this program.

11.5.1.3. **(AFMC)** Send request to HQ AFMC/A4M at **AFMC.A4M.workflow@us.af.mil.**

11.6. Red Ball Maintenance. The term "Red Ball" is a traditional descriptor, recognized throughout aircraft maintenance, and defines a situation requiring a sense of urgency and priority actions. Red Ball maintenance normally occurs two hours prior to launch and until aircrew have released the aircraft back to maintenance. The Red Ball maintenance concept is intended to prevent late takeoffs and aborts by having qualified maintenance personnel available (e.g., in a truck or standby in the shop) during launch and recovery operations to troubleshoot, isolate, and repair system malfunctions. Red Ball maintenance does not authorize technicians to take shortcuts or deviate from TOs, disregard personnel safety requirements or fail to properly document the aircraft forms and the MIS for all completed repair actions.

11.6.1. Units will ensure all maintenance repair actions (does not apply to incorrect switch settings due to operator error) are documented in the aircraft forms and MIS during Red Ball, launch, or EOR operations and cleared from the aircraft forms prior to flight. **(T-1).**

11.6.2. Maintenance repair actions must be cleared in the MIS as soon as possible. **(T-1).** It is imperative that maintenance documentation is performed regardless of the timing of the action in the generation and launching of the aircraft.

11.6.3. All grounding inputs must be cleared from the forms prior to flight. **(T-1)**.

11.6.4. If aircraft status changes, an ER must be re-accomplished by a certified individual upon completion of maintenance and before the aircraft is released for flight IAW TO 00-20-1. **(T-1).**

11.6.5. Units will develop written procedures to capture, document, and clear Red Ball maintenance actions in the event the MIS is down. **(T-1).**

11.6.5.1. Procedures must require MIS entry of Red Ball maintenance actions as soon as the MIS becomes operable. **(T-1).**

11.7. Maintenance Recovery Team (MRT): MAJCOMs will publish standardized procedures to recover assigned aircraft at remote locations.

11.7.1. Procedures at a minimum will identify how resources, including personnel, supplies, and equipment will be made available to support transient aircraft recovery.

11.7.2. If required, establish multiple command MOUs/MOAs/collaboration necessary to achieve efficient aircraft recovery.

11.7.3. **(Added-AFMC)** The MXG/CC is responsible for deploying MRTs and equipment to recover aircraft at remote locations, as directed by this instruction. Units will develop checklists. Unit resources, including personnel, supplies, and equipment, will be made available to support en route aircraft recoveries. **(T-2).** The MXG/CC will:

11.7.3.1. **(Added-AFMC)** Ensure adequate equipment resources, as authorized by applicable AS, are available to perform remote aircraft recoveries. **(T-2).**

11.7.3.2. **(Added-AFMC)** Ensure enough individuals are qualified to perform and complete all anticipated tasks, including IPI and Red X sign-offs. Consider the experience level of the individuals you select when the need is identified to troubleshoot repeat/recurring discrepancies, especially those that caused in-flight emergencies or involve safety of flight. The MXG/CC has the authority to grant approval for a single person to sign off their own work when only one individual deploys on an MRT IAW TO 00-20-1. **(T-2).**

11.8. Foreign Object Damage (FOD) Prevention Program. All personnel (military, civilian, and contractors) working in, on, around, or traveling through areas near aircraft, flightline munitions, AGE, engines, or components thereof will comply with FOD prevention. **(T-1)**. FOD prevention training requirements are outlined in AFI 36-2650. This section establishes minimum requirements for a FOD Prevention Program.

11.8.1. The WG/CV is responsible for ensuring an effective FOD prevention program is established.

11.8.2. Definition. FOD: Any damage to an aircraft, engine, aircraft system, component, tire, munitions, or SE caused by a foreign object(s) (FO) which may or may not degrade the required safety and/or operational characteristics of the aforementioned items.

11.8.3. FOD Prevention.

11.8.3.1. On aircraft, uninstalled engines, LRUs and AGE. Openings, ports, lines, hoses, electrical connections, and ducts will be properly plugged or capped to prevent FO from entering the systems. **(T-1).**

11.8.3.1.1. Items that are actively being disconnected, installed, and/or removed will be capped IAW technical data or at completion of the task. **(T-1).**

11.8.3.1.2. At no time will items, (e.g., aircraft forms binders, Video Tape Recorder (VTR) tapes, checklists, tools.), be placed in or on engine intakes. **(T-1). Note:** Does not apply to technicians performing inlet maintenance, inspections and blade blending requiring lights, files, or other tools inside aircraft inlets.

11.8.3.1.3. Inventory all items IAW **Chapter 8** of this instruction. **(T-1).**

11.8.3.2. Technicians will install intake plugs, or tape and barrier paper (as required by technical data) prior to performing maintenance in or around engine intakes. **(T-1).**

11.8.3.2.1. Technicians will ensure engine inlet run-up screens and anti-personnel guards are used IAW applicable weapon system TOs. **(T-1).**

11.8.3.2.2. **(Added-AFMC)** In a test cell facility the bellmouth fixture will be installed as required IAW applicable technical order.

11.8.3.3. Covers (e.g., engine, pitot tube(s) to include ejection seat) need to remain installed on aircraft as close to crew show as possible to prevent FOD, as determined by MDS/local MXG/CC guidance.

11.8.3.4. Technicians should use a light source of sufficient illumination to inspect the aircraft intakes and exhaust for FO/FOD.

11.8.3.5. Technicians will wear a pocketless, zipperless, buttonless bunny-suit, cloth over-booties or stocking feet, and will remove boots whenever physical entry into an aircraft intake or exhaust is required. **(T-1).**

11.8.3.5.1. Suits are not required to be worn if personnel do not physically enter these areas. A rubber mat may be used instead of cloth over-booties or removing boots if MDS technical data directs.

11.8.3.5.2. When performing intake inspections while wearing a CWDE, pockets will be emptied and all accessories removed. **(T-1).**

11.8.3.5.2.1. During exercises/inspections, the CWDE will be removed and the bunny-suit will be utilized. **(T-1).**

11.8.3.5.2.2. CWDE will be worn during "real world" situations only to minimize the potential for FOD and intake damage. **(T-1). Note:** During "real world" situations, if CWDE metal zippers are exposed, cover them with any type of tape and account for the tape upon completion of the inspection.

11.8.3.6. Each base will develop a local flightline clothing policy that addresses wearing of hats, badges, and passes aimed at FOD prevention while considering climate and safety. **(T-1).** As a minimum, it will include the following requirements:

11.8.3.6.1. Restricted area badges will be secured with a subdued non-metallic cord or plastic armband when worn on the flightline. **(T-1).**

11.8.3.6.1. **(AFMC)** Restricted area badges may be secured with any of the following additional type devices: nylon neck cord with breakaway feature, or button with nylon macramé that can be securely affixed to the uniform. The use of metal on

these items should be kept at a minimum, (i.e. clip or spiral key ring) and if used ensure that it cannot be separated from the cord. **(T-2).**

11.8.3.6.2. Restricted area badges will be removed when performing intake/inlet/exhaust inspections if personnel physically enter these areas. **(T-1).**

11.8.3.6.3. Metal insignias/badges will not be worn on the flightline. **(T-1).**

11.8.3.6.4. Wigs, hairpieces, metal hair fasteners, earrings, or any other jewelry/loose items that may fall off without notice, are not authorized on the flightline. **(T-1).**

11.8.3.6.5. Escorts of visiting personnel will ensure FOD prevention measures are taken. **(T-1).**

11.8.3.7. Discard readily removable (slide or pressure fit) pocket clips from tools (e.g., flashlights, continuity testers, small screwdrivers) prior to placement in tool kits. **(T-1).**

11.8.3.7.1. Do not disassemble/damage tools for sole purpose of removing clips, rubber switch guards, etc.

11.8.3.8. All maintenance production areas must have FO containers readily accessible. **(T-1).**

11.8.3.8.1. All vehicles primarily driven on the flightline must be equipped with secured and lidded FO containers. **(T-1). Note:** Permanently affixed FO containers must be approved by Vehicle Management prior to installation IAW AFI 24-302.

11.8.3.9. Control all work order residue used on or around aircraft, uninstalled engines, and AGE. **(T-1).**

11.8.3.9.1. **(Added-AFMC)** Establish and tailor rivet replacement procedures for local operation of assigned weapons systems. Include the procedures as part of the FOD orientation/familiarization for personnel working in these areas. Include work order residue control procedures for all maintenance performed in and around intake areas. **(T-2).**

11.8.3.9.2. **(Added-AFMC)** Aircraft Structural Maintenance shops and Low Observable Aircraft Structural Maintenance shops will develop LCL for intake repairs IAW Chapter 6 of this instruction and TO 00-5-1. All parts and pieces installed and removed from the aircraft will be documented and verified by a 7-level. The checklist will be completed on the job site and turned into QA within 24 hours of repair completion. Aircraft Structural Maintenance and Low Observable Aircraft Structural Maintenance technicians are not required to meet the training requirements of paragraph 11.16. **(T-2).**

11.8.3.10. Rags will be controlled and accounted for IAW **Chapter 8** of this instruction. **(T-1).**

11.8.3.10.1. Rag control applies to all organizations and personnel performing aircraft, missile, munitions, and equipment maintenance.

11.8.3.11. FOD walks are mandatory to remove FO from ramps, runways, maintenance areas and access roads.

11.8.3.11.1. In addition, mechanical/vacuum sweepers, magnetic bars or sweeping by hand are highly encouraged to supplement FOD walks.

11.8.3.12. When FOD is discovered on a transient aircraft, depot input/output or CRF engine, the host FOD monitor or aircrew must notify the owning organization within 24 hours. **(T-1).**

11.8.3.12.1. 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. **(T-1).**

11.8.3.12.2. For depot input/output or CRF engine. If the FOD is found during the receiving inspection at one of the aforementioned locations, it will be tracked/charged (if necessary) to the owning MAJCOM unit. **(T-1).** If discovered any other time at one of the aforementioned locations, it will be tracked/charged to the ALC or CRF. **(T-1).**

11.8.3.12.3. **(Added-AFMC)** When transient/deployed aircraft incur FOD, the host unit will conduct the investigation and notify the owning organization using command-reporting procedures. **(T-2).**

11.8.3.12.4. **(Added-AFMC)** The owning organization is responsible for FOD incidents and investigations on transient aircraft/engines when one of the following conditions apply:

11.8.3.12.4.1. **(Added-AFMC)** When the owning organization's maintainers are deployed with the aircraft and the FOD is a direct result of transient/deployed unit negligence. **(T-2).**

11.8.3.12.4.2. **(Added-AFMC)** FOD discovered by transient alert or by contractor personnel during acceptance inspections will be charged to the base from which the aircraft last departed if a FOD inspection was not accomplished/documented and there were no intermediate stops. **(T-2).**

11.8.3.13. Ensure local FOD Prevention Program addresses the elimination of FOs to include aircraft cockpits and flight decks before and after flight. **(T-1).**

11.8.3.13.1. When an item is lost on or in the vicinity of aircraft or equipment, lost item/tool procedures in **Chapter 8** of this instruction will be followed. **(T-1).**

11.8.3.13.2. The MXG/CC will coordinate with the OG/CC to develop procedures to ensure pilots and aircrew members 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. **(T-1).**

11.8.3.13.3. These procedures will be documented in the wing tool/equipment management publication referenced in **paragraph 10.2** of this instruction. **(T-1).**

11.8.3.14. Use extreme care during engine ground runs. Jet blast and helicopter hover power check areas need to be free of debris that could cause FOD.

11.8.3.15. Special emphasis is required for items such as: remove before flight streamer attachment, safing pin condition, hinge pin security, dust and FO prevention cover

condition/security, and aircraft forms binder condition. Periodically check these types of items for FO prevention compliance.

11.8.3.15.1. Units will account for -21 equipment and covers IAW AFI 21-103. **(T-1).**

11.8.3.15.2. Weapons Expediters must ensure all mission specific safing gear is controlled and accounted for to preclude loss and potential FOD. **(T-1).**

11.8.3.16. Vehicle operators will stop and perform a visual FOD inspection on all equipment and tires prior to entering the flightline areas. **(T-3). Note:** Wing CVs are the waiver authority for this requirement.

11.8.3.17. Grounding wires/points:

11.8.3.17.1. Two allen head screws, or equivalent, will be utilized to secure cable to grounding clip. **(T-1).**

11.8.3.17.1.1. Screw heads will be coated with sealant or screws will be staked in order to prevent screws from backing out. **(T-1).**

11.8.3.17.1.2. Unused screws will be removed. **(T-1).**

11.8.3.17.2. All grounding points will be kept clean of debris at all times and should be a high interest item for FOD walks. **(T-1).**

11.8.3.18. Use of magnetic bars on the flightline is optional. If used, the magnetic bars will be towed by, or attached to vehicles primarily used on the flightline and will be inspected and made FOD free daily. **(T-2).**

11.8.3.19. A locally manufactured tool for removing debris from tire treads is authorized for use and will be identified to the vehicle by using the vehicle ID number. **(T-2)**.

11.8.3.20. Remove metal identification bands from all tubing (except aircraft installed egress system components) and cables on the aircraft.

11.8.3.20. **(AFMC)** Leave inspection and load tolerance tags attached. **(T-2).**

11.8.3.20.1. With the exception of factory-installed ID tags attached to cargo chains/devices to identify the type being used, remove metal identification bands from cargo tie-down chains/devices prior to use around aircraft.

11.8.3.20.2. Do not remove manufacturer installed metal identification bands from hydraulic hoses.

11.8.3.20.3. Mark hydraulic lines IAW TO 42E1-1-1, *Aviation Hose and Tube Manual.*

11.8.3.21. Use X-ray, borescope, and other equipment to locate FO in inaccessible areas.

11.8.4. FOD Prevention Responsibilities.

11.8.4.1. The WG/CV will be assigned as the FOD Prevention Program Manager and will appoint a qualified TSgt (or above) in a maintenance AFSC, civilian equivalent or contractor if designated by SOW or PWS, to the position of FOD Monitor. **(T-1).**

11.8.4.1.1. The appointed individuals name will be posted in a prominent place within the unit on a locally-developed visual aid which also provides contact information. **(T-1).**

11.8.4.2. The WG/CV will:

11.8.4.2.1. Ensure all personnel actively support the FOD Prevention Program. **(T-1).**

11.8.4.2.2. Provide local guidance to ensure each FOD mishap is investigated and action taken to solve any underlying problems. **(T-1).**

11.8.4.2.3. Review all unit FOD mishap reports and analyze the reports and other data for trends identifying areas requiring management action. **(T-1).**

11.8.4.2.4. Coordinate FOD prevention needs with the airfield manager and other agencies when construction is in progress on or near the flightline, or other areas where FOD incidents could occur. **(T-1).**

11.8.4.2.5. Ensure FOD prevention is part of QA inspections. **(T-1).**

11.8.4.2.6. Coordinate with the airfield manager to identify and properly mark FOD check points. **(T-1).**

11.8.4.2.7. **(Added-AFMC)** Develop and implement a FOD awareness and prevention training program. **(T-2)** At a minimum, the training program must address the following:

11.8.4.2.7.1. **(Added-AFMC)** Standardized training documentation requirements. **(T-2).**

11.8.4.2.7.2. **(Added-AFMC)** FOD awareness and prevention practices. **(T-2).**

11.8.4.2.7.3. **(Added-AFMC)** Initial FOD training. Ensure newcomers are trained on work center specific FOD awareness and prevention practices prior to starting work in their assigned work area. **(T-2).**

11.8.4.2.7.4. **(Added-AFMC)** Annual FOD training. Ensure personnel receive annual FOD awareness and prevention training. **(T-2).**

11.8.4.2.7.5. **(Added-AFMC)** Ensure all maintenance, operations, base support, and contractor personnel who work in, around, or drive through maintenance and/or operational areas are trained on FOD prevention. **(T-2).**

11.8.4.3. Tenant Unit FOD Prevention Responsibilities. The host base FOD Prevention Program Manager will incorporate tenant units in the host unit program. **(T-1)**.

11.8.4.3.1. Tenant units should establish their own FOD Prevention Program, but will still participate in the host program and comply with host program requirements. **(T-1)**.

11.8.5. FOD Monitor. The Wing FOD Monitor's office should be located within QA or at the discretion of the WG/CV. **(T-3).** The Wing FOD Monitor, at a minimum, will:

11.8.5.1. Inform all wing agencies of FOD hazards. **(T-1).**

11.8.5.2. Develop wing procedures to document and perform spot checks of selected areas weekly. **(T-1).**

11.8.5.3. Be involved in each FOD investigation and help ensure corrective actions are sound. **(T-1).**

11.8.5.4. Monitor and recommend changes to FOD prevention training. **(T-1).**

11.8.5.4.1. Those units having several types of aircraft assigned will have their FOD prevention training incorporated into one wing/center training program. **(T-1).**

11.8.5.4.2. Units will ensure an initial FOD awareness and responsibilities briefing is given to all newly assigned personnel. **(T-1).**

11.8.5.5. Periodically inspect and report damaged pavement, flightline construction, or other hazards in or near aircraft parking ramps or taxiways to the airfield manager and monitor status to ensure timely repairs. **(T-1).**

11.8.6. FOD Investigation and Reporting.

11.8.6.1. When suspected or confirmed FOD is discovered, the MOC will be notified immediately. **(T-1).**

11.8.6.1.1. Upon notification, the MOC will immediately notify the Wing FOD Monitor. **(T-1).**

11.8.6.1.2. **(Added-AFMC)** MOC will immediately notify Airfield Management when cut or damaged tires are discovered after taxiing or aircraft tows. **(T-2).**

11.8.6.2. Units must make every attempt to determine the root cause of FOD-related mishaps before returning engines and modules to the depot for investigation. **(T-1).**

11.8.6.2.1. If engines/modules are returned to the depot, an information DR will be completed and forwarded IAW procedures outlined in AFI 91-204 and TO 00-35D-54. **(T-1).**

11.8.6.2.2. All FOD-mishap engines and modules returned to the depot must be properly marked on the outside of the packaging as a FOD-mishap asset. **(T-1).**

11.8.6.2.3. Mark container or package in red with the following statement, "FOD mishap investigation required." **(T-1)**.

11.8.6.3. FOD incidents are classified as preventable and non-preventable. Only preventable FOD over $50K (parts and labor) are to be chargeable to the FOD rate. FOD is considered preventable except when the damaged can be attributed to the following:

11.8.6.3.1. Caused by natural environment or wildlife. This includes hail, ice, animals, insects, sand, and birds. Report this type of damage IAW AFI 91-204. Do not include these in the FOD rates.

11.8.6.3.2. From internal engine materiel failure, as long as damage is confined to the engine.

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

11.8.6.3.3.1. **(Added-AFMC)** Coordinate with the applicable Safety Staff to determine reporting requirement IAW 91-204, when property damage to aircraft, equipment, commodities, or resources exceeds the Class D threshold ($20,000).

11.8.6.3.4. Found during depot overhaul for maximum operating time.

11.8.6.4. Additionally, the following apply:

11.8.6.4.1. Engine damage caused by improper anti-ice/de-ice procedures by either flight or ground crews are considered preventable.

11.8.6.4.2. Engine or airframe damage caused by gunnery or rocket mission ricochets are considered non-preventable provided mission parameters were not exceeded and range cleaning was sufficient.

11.8.6.4.3. Engine and propeller damage caused by rocks, stones, wood, or other objects ingested during low hover operations or unimproved runway landings are considered non-preventable, provided mission parameters were not exceeded.

11.8.6.4.4. MAJCOMs will determine reporting criteria for FOD incidences that result in a blade blending requirement IAW applicable tech-data.

11.8.6.4.4. **(AFMC)** Damage beyond blend repair, where hardware may be suspect for cause, and/or further unserviceable damage exists beyond the 1st stage fan will be considered reportable FOD. FOD found on the 1st stage fan which can by blended IAW with applicable tech-data may be considered non-reportable. **(T-2).**

11.8.6.5. Preventable FOD over $50K incurred at ETS or on trim pad will be chargeable. **(T-1).**

11.8.6.6. Appropriate MAJCOM offices will assist in resolving any questionable FOD issues, (i.e., preventable or non-preventable).

11.8.6.6. **(AFMC)** HQ AFMC/A4M Command Engine Manager shall assist in resolving questionable FOD issues. **(T-2).**

11.8.6.7. The Wing FOD Monitor will provide an initial report of all FOD incidents to the MAJCOM FOD monitor within 24 hours of occurrence. **(T-1).**

11.8.6.7.1. A follow-up report will be required every 45 days until closeout. **(T-2).** Use the FOD report format as listed in **Attachment 6** of this instruction.

11.8.6.7.2. MAJCOMs will determine FOD standards, MDS specific flying hour source data, period of time for calculation, reporting procedures, and meeting frequency for units that exceed standards in their supplement to this AFI.

11.8.6.7.2. **(AFMC)** Wing FOD monitor shall provide initial FOD reports via e-mail to AFMC/A4M workflow as soon as the damage is known, but NLT 24 hours after occurrence. **(T-2).**

11.8.6.7.2.1. **(Added-AFMC)** Wing FOD monitor shall provide a final report via e-mail to AFMC/A4M workflow upon completion of the FOD investigation. The Wing FOD monitor shall maintain reports for a minimum of 24 months (may be electronic). Use the FOD report format as listed in **Attachment 6**. **(T-2).**

11.8.6.7.2.2. **(Added-AFMC)** Wing FOD Monitor shall submit a completed AFMC Form 40, Foreign Object Damage Report, to HQ AFMC/A4M workflow by the 15th of each starting month of the quarter (Jan, April, July, Oct). **(T-2).**

11.8.6.7.2.3. **(Added-AFMC)** If the FOD incident is deemed a mishap IAW AFI 91-204, the Wing FOD monitor will still report the FOD incident then work in tandem with the Wing SE office to properly report the mishap. **(T-2).**

11.8.6.7.2.4. **(Added-AFMC)** All Defense Contract Management Agency (DCMA) managed units at contracted facilities will report FOD incidents to the Command FOD manager IAW this instruction on AFMC possessed/assigned aircraft. **(T-2).**

11.8.6.8. FOD rates are computed by MDS as follows: Number of Preventable FODs (damage exceeding $50K) ÷ Aircraft Flying Hours X 10,000 = FOD Rate. **Note:** ALCs compute FOD rates as follows: Number of Preventable FODs (damage exceeding $50K) ÷ Aircraft Flying Hours X 1,000 = FOD Rate. ALCs compute aircraft flying hours by using acceptance flights, functional check flights, ground runs, and the number of un-installed ETS starts.

11.8.7. FOD Prevention Committee Meeting. This meeting is mandatory for units that exceed the MAJCOM-established standard. **(T-1).**

11.8.7.1. The WG/CV will chair the meeting, if required, and will determine minimum required attendees. **(T-1).** The purpose of this meeting is to identify negative trends and develop and execute action plans to resolve them.

11.8.7.1. **(AFMC)** Additionally, the following will be considered for minimum attendance at the FOD Prevention Committee Meeting: Center FOD Monitor, the designated Union representative, Center or Wing Maintenance Training, Flight test representative, Contracting (As applicable), Center tool control manager, and the ABW/CV. **(T-2).**

11.8.7.1.1. The MXG/CC (or equivalent) will chair the meeting in the absence of the WG/CV. **(T-2).**

11.8.7.2. Meeting agenda items should include issues that resulted in the wing exceeding the FOD standard, such as:

11.8.7.2.1. Total number of airframe, engine, and tire FOD incidents during the reporting period. Indicate quantity and cause. Current status of all other pending incidents will be discussed.

11.8.7.2.2. Mechanical/vacuum sweeper status.

11.8.7.2.3. Review and refinement of the existing FOD prevention program.

11.8.7.2.4. New directives/actions established to minimize FOD.

11.8.7.2.5. Status and condition of engine run-up screens as applicable.

11.8.7.2.6. Results of X-rays for FOs during engine bay inspections, acceptance inspections, and PH inspections. Maintenance trends should be discussed when an increase in FO is discovered during these X-rays.

11.8.7.2.7. Identification of potential FOD sources.

11.8.7.2.8. Lost tools/items.

11.8.7.2.9. Increased potential for FOD within the next 30-60 days.

11.8.7.2.10. Dropped objects. Pay particular attention to those that result in downstream FOD.

11.8.7.2.11. Breakdown of FOD inspections/assessments.

11.8.7.2.12. Cockpit FO incidents.

11.8.7.2.13. Recognition of personnel making significant contributions to FOD prevention (e.g. golden bolt program, FOD poster contests, or other FOD recognition programs locally-developed at each unit).

11.8.7.2.14. **(Added-AFMC)** In addition to the agenda items, the minutes will include as a minimum a list of attendees and absentees. Attendees list will identify the wing FOD monitor and provide functional address symbol and duty phone number for all personnel. Meeting minutes will be made available to FOD committee members. **(T-2).**

11.8.8. 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.

11.9. Dropped Object Prevention (DOP) Program. A dropped object is any aircraft part, component, surface, LO coating exceeding 8 inches in any dimension or other item lost during aircrew operations (unless intentionally jettisoned) from engine start to engine shutdown. Inadvertently released munitions are not considered dropped objects and will be reported IAW AFI 91-204. **Note:** Missing Chaff/Flare/Decoy end-caps are not reportable dropped objects.

11.9.1. Responsibilities. All units, which fly, service, or maintain aircraft, need to develop a DOP Program with the following provisions:

11.9.1.1. MAJCOM DOP monitors or aircraft functional managers will act as OPR for all dropped object inquiries IAW MAJCOM established standards.

11.9.1.2. The WG/CV serves as the Wing DOP Program Manager and will appoint a Wing DOP Monitor. **(T-1).**

11.9.2. Investigation. The DOP Monitor will investigate each dropped object incident. **(T-1).**

11.9.2.1. Every effort needs to be made to determine the precise cause to ensure positive corrective action is accomplished. Anytime 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).**

11.9.2.2. Investigation results will be distributed to each appropriate work center for inclusion in personnel training and education programs. **(T-1).**

11.9.3. Reporting. Units will follow MAJCOM DOP Program reporting procedures. **(T-2)**.

11.9.3. **(AFMC)** Wing DOP monitor shall provide an initial dropped object report via e-mail to AFMC/A4M workflow within 24 hours of occurrence and final dropped object report NLT 45 days after occurrence. In addition, if it involves casualties, property damage, or if adverse publicity is likely, report IAW AFI 10-206. The safety office shall be notified of all dropped objects within 24 hours of occurrence. The Wing DOP Monitor shall maintain reports for a minimum of 24 months (may be electronic). The DOP report format listed in **Attachment 7** shall be followed. **(T-2).**

11.9.3.1. Transient Aircraft. The host Wing DOP Monitor will be responsible to investigate dropped objects from a transient aircraft. **(T-1).**

11.9.3.1.1. The host Wing DOP Monitor will provide the home station Wing DOP Monitor with sufficient data to generate a report for trending and tracking purposes. **(T-1).**

11.10. Aircraft Structural Integrity Program (ASIP). The ASIP includes requirements for collection and evaluation of aircraft usage data to update or confirm the original design or baseline spectrum and to adjust maintenance intervals on an individual aircraft basis. The Loads/Environment Spectra Survey (L/ESS) data is collected via flight data recorders of instrumented aircraft to evaluate the loads spectrum. The Individual Aircraft Tracking (IAT) data is collected via flight data recorders or manual forms such as "bubble sheets" and the data is used to make maintenance/inspection/force structure decisions. Both the L/ESS and IAT aircraft usage data programs are established by applicable MDS-specific TOs and AFI 63-140 and require coordinated action by a number of base-level maintenance activities to achieve the required data capture rates. An effective ASIP aircraft usage data collection program is essential to establish, assess and support inspections, maintenance activities, repairs and required modification/replacement actions. MAJCOMs will:

11.10.1. Publish ASIP roles and responsibilities for each assigned weapon system IAW AFI 63-140.

11.10.1. **(AFMC)** For roles and responsibilities see AFI 63-140 paragraph 4.3.

11.10.1.1. **(Added-AFMC)** The POC for AFMC is AFMC/A4MM.

11.10.2. Ensure operational units continuously meet authorized reporting requirements established by SPOs.

11.10.2. **(AFMC)** For operational requirements see AFI 63-140 paragraph 4.4.

11.10.3. Document causes and corrective actions for units that fail to meet reporting requirements and retain until resolved or relief of the reporting requirement is granted from the SPO in writing.

11.10.3. **(AFMC)** For operational requirements see AFI 63-140 paragraph 4.4.

11.11. Identification Friend or Foe (IFF) Program.

11.11.1. MAJCOMs will establish an IFF Program for aircraft in their command (if equipped).

11.11.1. **(AFMC)** For IFF program see paragraph 11.35.

11.11.1.1. MAJCOM programs will identify additional requirements necessary to ensure status of IFF systems meets mission requirements.

11.11.1.1. **(AFMC)** For additional program requirements see paragraph 11.35.

11.11.2. The MXG/CC will appoint an IFF Program Manager for IFF systems cryptographically keyed by MXG personnel (if equipped). **(T-1).**

11.11.2.1. Equipped aircraft will be checked prior to its first sortie of the day during contingency operations. **(T-1).**

11.12. Radar Warning Receiver (RWR)/Radar Threat Warning (RTHW) Testing.

11.12.1. MAJCOMs will identify weapon systems with enhanced on-board diagnostics and internal testing capabilities which do not require external testing in their supplement to this instruction (if equipped).

11.12.1. **(AFMC)** For weapons systems with enhanced on-board diagnostics and internal testing capabilities see paragraph 11.12.2.1.

11.12.1.1. MAJCOMs will determine non-contingency system functional check requirements necessary to ensure RWR/RTHW systems are maintained operationally ready to meet mission requirements IAW the MDS MESL or equivalent.

11.12.1.1. **(AFMC)** For non-contingency system functional checks see paragraph 11.12.2.2.

11.12.2. The MXG/CC will appoint a RWR/RTHW Manager (if equipped). **(T-1).**

11.12.2.1. The RWR/ RTHW Manager will coordinate test procedures with the Wing Electronic Warfare Officer (EWO) and the MXS, if applicable. **(T-2).**

11.12.2.2. The RWR/RTHW Manager will ensure each unit accomplishes the required minimum number of checks as defined below. **(T-1).**

11.12.2.2.1. For contingency missions, the RWR/RTHW Manager will coordinate with the EWO/Electronic Combat Officer (ECO) who will determine system check requirements and specific threats to be simulated. **(T-3).**

11.12.3. When an aircraft is found to have a malfunctioning RWR/RTHW system prior to flight, the AC determines the course of action based on operational needs and requirements.

11.13. Cannibalization Program.

11.13.1. General. CANN actions may be necessary when a condition prevents the accomplishment of a mission and the required assets are not immediately available from supply. Prior to performing a CANN action, verify the required component cannot be sourced from LRS, TNB or back shop. When authorizing a CANN, the expenditure of man-hours and potential damage to equipment need to be weighed against the expected benefit. High risk CANNs should not be performed unless priority aircraft are involved or lack of ready equipment will impede mission accomplishment. See **Table 1.1** of this instruction and AFTTP 3.3. for additional guidance.

11.13.2. Definition. CANN is the authorized removal of a specific assembly, subassembly, or part from one weapon system, 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. Weapon systems, support systems, or equipment include: aircraft, missiles, drones, RPA, uninstalled engines, uninstalled engine modules, aircrew and/or launch crew training devices, C-E equipment, AGE, TMDE, serviceable uninstalled pods, and guns.

11.13.3. Responsibilities. CANN Authorities (CA) will be approved by the MXG/CC or equivalent and tracked in the MIS and SCR (see **Table 11.1** of this instruction). **(T-1).**

11.13.3.1. CA will be SNCOs, officers or civilian equivalents. **(T-1).** These personnel are typically Pro Supers.

11.13.3.2. Those who are authorized to approve CANNs will not further delegate their responsibility. **(T-1).**

11.13.4. If an assembly is cannibalized to satisfy a condition caused by lack of bits and pieces (e.g., washers, nuts, and bolts), the assembly is counted as a CANN and the bits and pieces are considered transfer actions. Bits and pieces removed from an end item (without removing the assembly) for installation on another end item are considered individual CANN actions.

11.13.5. When a required part cannot be delivered and installed on time, the CA may approve the CANN of parts before the initiation of CANN documentation (e.g., Red Ball maintenance). The CA will give this approval only after confirming the part is not readily available in LRS, TNB, forward supply points, or back shops. **(T-1).**

11.13.5.1. The CA will notify the appropriate supply activity to change the “mark-for” components in the document number. **(T-1).**

11.13.5.2. The CA will also ensure complete documentation is accomplished for each CANN action. **(T-1).**

11.13.6. When TCIs, serially-controlled items, items affecting compliance of a TCTO, or other components with inspection requirements that align to specific hourly, calendar, or event limits are considered for CANN, the CA will coordinate with PS&D or EM to ensure adequate time remains on the item to justify the CANN and to ensure appropriate records are updated. **(T-1).**

11.13.6.1. If the CANN action takes place, the performing work center will update the MIS and notify PS&D or EM. **(T-1).**

11.13.7. Installed engines are not end items; installed engines are considered a LRU (e.g. similar to a radar component, gun, seat, canopy, radio, multifunction display unit, etc.).

11.13.7.1. If a functional LRU is removed from one end item to put on another end item to fill a “hole” which was caused by a supply requisition, (the requisition could be against the LRU), then this is considered a CANN.

11.13.8. Restrictions.

11.13.8.1. Egress system component Cartridge/Propellant Activated 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.

11.13.8.2. To ensure system integrity and validation of the explosive CAD/PAD listing, cannibalization of egress explosive components and/or seats will not be accomplished without the approval of the MXG/CC or MXG/CD. **(T-3).**

11.13.8.3. After cannibalization actions, Red X discrepancies in the aircraft AFTO Form 781As will not be cleared until the MIS is verified. **(T-1).**

11.13.8.3.1. **(2A6X3)** Egress personnel will accomplish this action. **(T-1).**

11.13.8.4. CANN actions involving parts from Aircraft Battle Damage Repair (ABDR) aircraft, AF Museum Aircraft, Maintenance Training Devices (MTDs), GITA, TAA, or DLADS will not be accomplished without authorization from the SPO. **(T-1).**

11.13.8.4.1. Parts will not be removed from static display/AF Museum Aircraft except as authorized by AFI 84-103. **(T-1).**

11.13.8.4.2. If the part is approved for CANN, it must not be put into service until all necessary inspections (e.g., NDI, pressure checks, operational checks, TCTOs) have been accomplished using specific guidance from the IM to ensure proper serviceability. **(T-1).**

11.13.8.5. Units will not CANN parts from aircraft possessed by AFMC (B or D possession codes) without first obtaining approval from the applicable PM. **(T-1).**

11.13.8.6. An aircraft that has been extensively cannibalized will not be launched on an overseas or cross-country sortie/mission on the first flight following CANN rebuild without the owning MXG/CC approval. **(T-2)**.

11.14. Hangar Queen Aircraft.

11.14.1. General. The objective of this program is to ensure the entire fleet remains healthy and all possible management actions are carried out to ensure aircraft do not remain inoperative for extended periods. MAJCOMs will establish a Hangar Queen Management Program.

11.14.1. **(AFMC)** See AFMC Sup para 11.14.4.3. through 11.14.7.2. for Hangar Queen Management Program.

11.14.2. Definitions. A “Hangar Queen” is a unit-possessed aircraft that has not flown for at least 30 calendar days. Aircraft are exempt from accruing Hangar Queen time for up to ten days immediately following DFT/CFT repair or maintenance; however, if an aircraft is not flown after the tenth day, the ten days are included in the total number of days since last fly date to determine the Hangar Queen category computation. Hangar Queen aircraft will be further defined by the following three categories:

11.14.2.1. Category 1: Aircraft that have not flown for 30 to 59 calendar days. **(T-1).**

11.14.2.2. Category 2: Aircraft that have not flown for 60 to 89 calendar days. **(T-1).**

11.14.2.3. Category 3: Aircraft that have not flown for 90 or more calendar days. **(T-1).**

11.14.3. All aircraft placed on higher HHQ alert status are exempt from the Hangar Queen Management Program and reporting throughout the duration of alert status/posturing.

11.14.4. An aircraft is released from Hangar Queen status after the first flight. The following examples are provided to clarify when an aircraft becomes a Hangar Queen:

11.14.4.1. A unit-possessed aircraft has not flown for 20 calendar days, enters depot status for 5 more calendar days, and then returns to unit possession on the 26th non-fly day; the unit has up to 10 calendar days to fly the aircraft to avoid Hangar Queen status. If this aircraft does not fly on the 10th calendar day (35th non-fly day), the aircraft would become 36-day Category 1 Hangar Queen on the next day.

11.14.4.2. A unit-possessed aircraft has not flown for 2 calendar days, then enters depot status for 1 calendar day and is returned to unit possession, the unit must fly the aircraft in the next 27 calendar days to avoid becoming a Category 1 Hangar Queen.

11.14.5. **(Added-AFMC)** When an aircraft becomes a Category 1 Hangar Queen, establish a maintenance recovery plan. Brief aircraft maintenance and supply status to the SQ/CC daily and weekly to the MXG/CC and WG/CC. Category 1 aircraft are managed locally. **(T-2).**

11.14.6. **(Added-AFMC)** When an aircraft becomes a Category 2 Hangar Queen, assign a SNCO or officer (or civilian equivalent) to manage the Hangar Queen. The MXG/CC or designated representative must approve any further CANNs, transfer, and diversion actions from the Hangar Queen aircraft. Brief aircraft maintenance and supply status at the daily wing standup meeting. Units will report aircraft tail number(s) to MAJCOM. POC is HQ AFMC/A4MM. **(T-2).**

11.14.6.1. **(Added-AFMC)** The minimum information required to report is **(T-2)**:

11.14.6.1.1. **(Added-AFMC)** Hangar Queen Management POC.

11.14.6.1.2. **(Added-AFMC)** Aircraft MDS and Tail #.

11.14.6.1.3. **(Added-AFMC)** Unit of Assignment/Possession.

11.14.6.1.4. **(Added-AFMC)** Date last flown.

11.14.6.1.5. **(Added-AFMC)** Reason for Hangar Queen status.

11.14.6.1.6. **(Added-AFMC)** Document number for parts on order for reason of Hangar Queen status with estimated delivery dates.

11.14.6.1.7. **(Added-AFMC)** Estimated next fly day.

11.14.6.1.8. **(Added-AFMC)** Identify if MAJCOM/WST Lead Command assistance is required.

11.14.7. **(Added-AFMC)** When an aircraft becomes a Category 3 Hangar Queen, units will report aircraft tail number(s) to MAJCOM and continue Category 2 Hangar Queen actions. Units will send an updated report to MAJCOM at least monthly. **(T-2).**

11.14.7.1. **(Added-AFMC)** MXG/CC will determine the need for an FCF/OCF (if not otherwise required by the aircraft specific TO). **(T-2).**

11.14.7.2. **(Added-AFMC)** QA will perform a final review of all aircraft forms initiated since the last flight prior to the first flight. **(T-2).**

11.15. Ground Instructional Trainer Aircraft (GITA). Permanently assigned GITA are those aircraft that are not maintained in airworthy condition. Active GITA are maintained in

system/subsystem operational condition for purposes of maintenance training and normally carried in possession codes as outlined in AFI 21-103 or AFI 16-402. Inactive GITA are permanently grounded for use in personnel training. This section does not apply to ABDR training aircraft. ABDR training aircraft are managed by AFSC/LGPM (ABDR PO). This chapter does not apply to training equipment maintained by CLS contracts administered by commands other than AETC.

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

11.15.1.1. Only those items requested by the PM are considered for removal. If the item does not affect training and if approved by MXG/CC, the part will be removed and turned in as per the ALC MXG/CC's (or equivalent) instructions. **(T-2).**

11.15.1.2. Units are responsible for storing uninstalled or removed equipment that is not required for training. **(T-1).**

11.15.2. Permanently Grounded GITA (inactive). Permanently grounded aircraft are those declared excess to future operations or flying requirements by higher headquarters. Aircraft in this category will be re-designated by the addition of the prefix "G" to the basic MDS. **(T-1).**

11.15.2.1. Training Aid Aircraft (TAA) are considered Permanently Grounded GITA (inactive). Aircraft in this category, at a minimum, require an aircraft fuselage that was previously in the AF inventory as an aircraft. TAAs will be re-designated by the addition of the prefix "T" to the basic MDS. **(T-1).**

11.15.2.1.1. Assigned aircraft are not maintained in airworthy condition, and only the system/subsystem required for the specific training requirements will be maintained in operational condition for purposes of required maintenance/organizational training. **(T-2).**

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

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

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

11.15.2.3. Upon assignment of a permanently grounded GITA/TAA, the MXG/CC or equivalent will contact the applicable MAJCOM to coordinate "save list" requirements identified by the applicable PM. **(T-2)**.

11.15.2.3.1. "Save list" items removed will be turned into LRS for shipment. **(T-2).**

11.15.2.3.2. If an item on the "save list" is not removed, the reason for not removing it will be annotated and coordinated with the applicable MAJCOM. **(T-2).**

11.15.2.3.3. If items on the "save list" are required for training and an unserviceable item will suffice, units will coordinate with the applicable MAJCOM for receipt of the unserviceable item(s). **(T-2).**

11.15.2.3.4. All unserviceable items furnished by ALC will be marked/identified as "unserviceable" in a conspicuous manner (e.g., Red X or Red dot system). **(T-2).**

11.15.3. MAJCOM Responsibilities. MAJCOMs will determine use of MIS for permanently grounded GITA records management.

11.15.3. **(AFMC)** Units will use the applicable MIS to document records management. (T-2).

11.15.3.1. MAJCOMs will coordinate "save list" requirements/changes with the applicable PMs.

11.15.4. MXG/CC Responsibilities. MXG/CC or equivalent will:

11.15.4.1. Develop an installation publication or supplement to define the scope of training functions for GITA/TAA use, functional responsibility for funding, operations, maintenance, and records management. **(T-1).**

11.15.4.2. Ensure maintenance support of GITA/TAA used for training. **(T-1).** Units that do not have organic maintenance capability will establish a Support Agreement (SA) or MOA assigning maintenance responsibility for GITA/TAA training use. **(T-1).**

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

11.15.4.2.2. TAA require minimal maintenance on systems/subsystems used to meet training requirements and should be maintained in a safe and presentable condition.

11.15.4.2.3. Determine which system and subsystem are required to support the training. Consider present, future, and cross-utilization of systems when making determinations. These systems will be maintained in the same configuration as operational equipment. **(T-1).**

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

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

11.15.4.2.6. Ensure standard maintenance practices regarding inspection appearance, cleanliness, ground safety, and prevention of corrosion are met. Corrosion control procedures are outlined in TO 1-1-691.

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

11.15.4.2.7.1. Prior-to-use inspections will be conducted by the using organization employing a tailored weapon system pre-/post-dock checklist. **(T-1).**

11.15.4.2.7.2. Conduct periodic maintenance inspections using a tailored work deck. **(T-1)**.

11.15.4.2.8. Prepare a separate memorandum for each GITA/TAA, addressed to the appropriate PM for the aircraft and inform them of the systems and subsystems that will be maintained in operational configuration. **(T-1).**

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

11.15.4.2.8.2. Ensures copies of all GITA/TAA memorandums to the MAJCOM AVDO. **(T-1).**

11.15.4.2.9. Air and space vehicle inventory will be reported IAW AFI 21-103 as required for ground trainers. **(T-1).** Aircraft used for ground trainers are exempt from status and utilization reporting.

11.15.4.2.10. Maintenance actions will be documented IAW TO 00-20-1. **(T-1).**

11.15.4.2.10.1. Owning units not having maintenance capability will establish MOAs or MOUs with organizations which can provide maintenance support. **(T-1).**

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

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

11.15.4.2.11.2. TCTOs are not maintained on TAA.

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

11.15.4.2.12.1. When an item is removed or replaced, supervisors will ensure this action is documented in the aircraft forms. **(T-1).** Include the authority for removal (e.g., message number, telecon, letters, and dates) and condition of installed/replacement items.

11.15.4.2.12.2. When the limited save list actions have been done, a copy of the completed list will be forwarded to the appropriate PM and the local documentation function which will be added to the TAA historical record. **(T-1).**

11.15.4.2.12.3. W&B handbook requirements will be maintained IAW TO 1-1B-50 and applicable -5 series TOs. **(T-1).**

11.15.4.2.12.4. Operating and maintenance technical data will be readily accessible whenever the GITA/TAA is in use or undergoing inspection. **(T-1).**

11.15.4.2.12.5. MXG/CC will designate a GITA/TAA Manager as an additional duty. **(T-1).**

11.15.4.2.12.5.1. The GITA/TAA Manager must be qualified to operate GITA/TAA systems and appropriate support equipment to conduct GITA/TAA maintenance. **(T-1).**

11.15.4.2.12.5.2. The GITA/TAA Manager will accomplish and/or coordinate maintenance actions for the GITA/TAA and ensure GITA/TAA documentation is accurate and complete. **(T-1).**

11.15.4.2.13. For equipment designated as trainers, only the systems required for technical training (or those required to ensure safety or system integrity) need to be maintained. **Note:** This does not apply to "temporarily" grounded aircraft or operational equipment or systems on loan from MAJCOMs or ALCs.

11.15.5. Technical Data Applicability.

11.15.5.1. Operational systems on GITA/TAA are maintained IAW applicable technical data. The specific policy governing the use and modification of technical data is contained in TO 00-5-1.

11.15.5.1.1. Some systems may be operated and maintained with original contractor data because formal technical data was never developed and/or the contractor data was never assigned a TO number.

11.15.5.2. Inspection and lubrication requirements may be adjusted to correspond with training requirements and equipment usage and to prevent over or under inspection.

11.15.5.3. When significant savings may be achieved, the commander or contract project manager must request deviations or changes to technical data requirements, including substitution of materiel from the weapon system program manager.

11.15.5.3.1. If deviations are approved, the unit will retain approved deviations/changes in the GITA historical records. **(T-1).** In all cases, safety or design function must not be compromised.

11.15.5.4. TCTOs. The QA function or other designated agency will be responsible for determining applicability of TCTOs for GITAs. **(T-1)**. TCTO upgrades are not required on TAA.

11.16. Aircraft Inlet/Intake/Exhaust Certification.

11.16.1. MAJCOMs will determine MDS applicability, certification frequency requirements, and the requirement to implement an Aircraft Inlet/Intake/Exhaust Certification program IAW **Table 11.1** of this instruction.

11.16.1.1. **(Added-AFMC)** This program is applicable to B-1, B-2, F-4, F-15, F-16, F-22, F-35, RPA, and propeller-driven aircraft/helicopters. (Exception: reciprocating engines.). **(T-2).**

11.16.1.2. **(Added-AFMC)** Units will have an installed and uninstalled aircraft/engine intake/inlet/exhaust training program. **(T-2).**

11.16.2. Units will track these programs on the SCR when implemented. **(T-1).**

11.17. Engine Run Training and Certification Program.

11.17.1. A comprehensive engine run certification program will be developed and strictly enforced to prevent safety mishaps and potential loss of life. **(T-1)**.

11.17.1.1. The MXG/CC is responsible for ensuring the MT develops and manages an effective engine run certification program. **(T-1)**.

11.17.1.2. All maintenance personnel authorized to start and operate aircraft engines, APUs, and uninstalled engines will be trained and certified to operate engines at TO determined power settings. **(T-1)**.

11.17.1.3. Aircraft engine motoring will only be performed by qualified engine run personnel. **(T-1)**. **Exception:** Rotary wing maintenance personnel qualified through OJT may motor engines as long as the rotor brake will prevent the rotors from turning.

11.17.1.4. The following minimum requirements will be used to certify engine run personnel:

11.17.1.4.1. The MT will serve as the OPR and focal point for the management and development of the engine run certification program, engine run certification test question bank, and written tests for their respective weapon system. **(T-1).**

11.17.1.4.2. Pre-run training will be conducted in the trainee's work center through OJT. **(T-1).** Pre-run training is designed to prepare the trainee for successful completion of initial engine-run training. As a minimum, pre-run training will include:

11.17.1.4.2.1. An evaluation by immediate supervisor or NCOIC/Flight Chief to determine the individual's level of maturity and experience prior to being selected for engine-run training. **(T-1).**

11.17.1.4.2.2. The trainee will review and become familiar with engine-run operations to include emergency procedures IAW the applicable aircraft General System (GS) type TO and engine run checklist. **(T-1).**

11.17.1.4.2.3. MTs may develop a handout to facilitate learning engine-run procedures, engine limitations, and emergency procedures.

11.17.1.4.3. **(Added-AFMC)** The MTs will review approved engine run certification procedures annually for accuracy. **(T-2).**

11.17.1.4.4. **(Added-AFMC)** Units will develop local procedures clearly depicting authorized run locations. **(T-2).**

11.17.2. Installed Engine Run Personnel. Prior to entering engine run training, personnel will meet the following requirements:

11.17.2.1. Personnel will be selected IAW criteria established in **Table 11.1** of this instruction. **(T-1).** MXG/CCs may designate contractors in writing to run aircraft engines.

11.17.2.2. Qualified to operate the aircraft APU as applicable. **(T-1).**

11.17.2.3. Qualified as a brake operator. **(T-1).**

11.17.2.4. Qualified in basic radio and interphone systems operation. **(T-1).**

11.17.3. Certifying Officials. Certifying official certification requirements are listed in **Table 11.1** of this instruction.

11.17.3.1. Instructor Pilots (IP) can also be used as certifying officials during the practical engine-run demonstration.

11.17.3.2. Certifying officials must maintain proficiency in the same manner as other technicians; certifying officials must re-certify each other. **(T-1).**

11.17.4. Instructors. Individuals selected as instructors will hold the rank of SSgt or above and possess a 7-skill level in one of the following AFSCs: 2A3X3/7/8, 2A5X1/2/4, 2A6X1 or civilian equivalent, a qualified contractor, or AFETS/CETS personnel. **(T-1).**

11.17.4.1. AFI 11-218, *Aircraft Operations and Movement on the Ground*, aircraft and engine TOs, commercial aircraft/engine operating procedures, and special test project engineering procedures will be used to develop engine run certification training programs. **(T-1).**

11.17.5. The initial engine run certification program will consist of following three phases, each of which will be successfully completed before progressing to the next phase:

11.17.5.1. Phase 1. **(T-1).** Phase 1 is formal classroom training. Classroom instruction will include:

11.17.5.1.1. General aircraft familiarization to include, as a minimum, basic MDS airframe characteristics, aircraft safe-for-maintenance procedures, cockpit configuration and systems, throttles and aircraft controls, egress, normal and emergency braking systems, and aircraft system/subsystems related to safe engine operation and qualified in aircraft marshaling signals IAW AFI 11-218. **(T-1)**.

11.17.5.1.2. A thorough review of TO procedures with emphasis on and notes, cautions, and warnings. **(T-1).**

11.17.5.1.3. Engine/APU operation, to include normal operational parameters and limitations. **(T-1).**

11.17.5.1.4. Ensuring aircraft, engine, and APU emergency procedures are memorized. **(T-1).**

11.17.5.1.5. UHF/VHF radio operation, Air Traffic Control (ATC) tower procedures, and emergency radio transmissions. **(T-1).**

11.17.5.1.6. A two-part closed book examination (students will successfully complete part I before taking part II). **(T-1).** The examination will consist of the following:

11.17.5.1.6.1. Part I - Students will be given a written/computer-based examination on all bold face emergency procedures or all emergency procedures identified in applicable technical datarequiring a passing score of 100 percent. **(T-1).**

11.17.5.1.6.2. Part II - Students will be given a written examination covering normal engine run procedures and limitations requiring a minimum passing score of 90 percent, corrected to 100 percent. **(T-1).**

11.17.5.1.7. Personnel failing the written/computer-based examination will receive additional instruction before being re-tested. **(T-1).**

11.17.5.1.8. Students will not be given the same Part II test during re-testing efforts. **(T-1).**

11.17.5.1.9. After a second failure of the two part closed book examination, the SQ/CC (or equivalent) will determine if personnel may retest and continue with the program. **(T-1).**

11.17.5.2. Phase 2. **(T-1).** Phase 2 is simulator training. All maintenance personnel requiring engine run certification will receive simulator training on each specific aircraft MDS and APU. **(T-1).**

11.17.5.2.1. Training will be accomplished in an Aircrew Training Device (ATD), Cockpit Trainer (CPT), simulator, Maintenance Training Devise (MTD) or approved Technology Development (TD) trainer. **(T-1). Note:** If any of the above are not available, a similar MD simulator may be used if the procedures are the same or "dry run" procedures will be accomplished in an aircraft to ensure procedural knowledge.

11.17.5.2.2. As a minimum, students will demonstrate knowledge and proficiency in the following areas:

11.17.5.2.2.1. Proper run clearance procedures. **(T-1).**

11.17.5.2.2.2. UHF/VHF radio operation, ATC tower procedures, and emergency radio transmissions. **(T-1).**

11.17.5.2.2.3. Normal APU, engine start, run, and shutdown procedures. **(T-1).**

11.17.5.2.2.4. Augmentor or thrust reverser operation (as applicable). **(T-1).**

11.17.5.2.2.5. Applicable aircraft systems/subsystems normal operating parameters. **(T-1).**

11.17.5.2.2.6. Ensure TO emergency bold face items are memorized. **(T-1).**

11.17.5.2.2.6.1. Instructors will evaluate the student on response time and ability to handle emergency situations to include egress procedures. **(T-1).**

11.17.5.3. Phase 3. **(T-1).** Phase 3 is practical demonstration. Each individual will receive a practical engine run evaluation after successful completion of Phase 1 and Phase 2 training. **(T-1).** For fighter-type aircraft, it is preferable to conduct the evaluation in a NSS, or on a trim pad. As a minimum, the student will demonstrate successful completion of the following areas without any discrepancies based on a go/no-go standard**:**

11.17.5.3.1. Run clearance procedures. **(T-1).**

11.17.5.3.2. UHF/VHF radio operation, ATC tower procedures, and emergency radio transmissions. **(T-1).**

11.17.5.3.3. Normal APU, engine start, run, and shutdown procedures, including notes, cautions, and warnings. **(T-1).**

11.17.5.3.4. Augmentor or thrust reverser operation as applicable, including notes, cautions, and warnings. **(T-1).**

11.17.5.3.5. Applicable aircraft systems/subsystems normal operating parameters, including notes, cautions, and warnings. **(T-1).**

11.17.5.3.6. Ensure TO emergency bold face items are memorized. **(T-1).** Instructors will evaluate the student on response time and ability to handle emergency situations. **(T-1).**

11.17.5.3.7. Egress procedures. **(T-1).** MAJCOM/Lead Command, TO, and checklist procedures for the applicable MDS will be demonstrated without error. **(T-1).**

11.17.6. Annual recertification for certifying officials and engine run certified personnel will be accomplished by successfully completing the written test (Part I and Part II) administered by the MT and demonstrating knowledge of normal and emergency procedures to a certifying official by operating one of the following: ATD, CPT, authorized TD trainer (if assigned or available), or aircraft as appropriate. **(T-1).**

11.17.6.1. Personnel failing the written examination will receive additional instruction before being re-tested. **(T-1).**

11.17.6.2. Students will not be given the same Part II test during re-testing efforts. **(T-1).**

11.17.6.3. After a second failure of the two-part closed book examination, the individual will be decertified. **(T-1).**

11.17.6.3.1. The SQ/CC (or equivalent) will determine if personnel may retest and continue with the program, and whether they must attend all three phases of initial training prior to being recertified. **(T-1).**

11.17.6.4. Certified individuals who PCS to the same MDS, and engine type and model must be approved by the SQ/CC (or equivalent) and complete an initial evaluation by a certifying official prior to becoming run qualified at the gaining base. **(T-1)**. **Note:** MAJCOMs will determine if additional training is required for the specific engine series.

11.17.6.4. **(AFMC)** Provided certified individuals remain proficient IAW paragraph 11.17.8 while transitioning to gaining unit, no additional training is necessary beyond the initial evaluation. **(T-2).**

11.17.6.4.1. The evaluation will include, as a minimum, familiarization of local procedures and requirements. **(T-1).**

11.17.6.4.2. Carry over the date of original class completion from previous documentation (certificate, training record, MIS printout).

11.17.7. Documentation. Qualifications of installed engine run certifying officials and engine run certified personnel, will be documented in the MIS and entered on the SCR. **(T-1).**

11.17.8. Proficiency. MAJCOMs will determine proficiency requirements for maintenance personnel authorized to operate installed engines.

11.17.8. **(AFMC)** To maintain proficiency, maintenance personnel authorized to operate engine(s) will perform at least one engine run every 90 days. **(T-2).**

11.17.8.1. Units will track run proficiency requirements in the MIS. **(T-1).**

11.17.8.2. Supervisors will ensure individuals who fail to maintain proficiency are decertified. **(T-1).**

11.17.8.2.1. Decertified individuals will recertify IAW **paragraph 11.17.6** of this instruction. **(T-1).**

11.17.9. Engine run certification tests are controlled items and will be handled IAW AFI 36-2605, *Air Force Military Personnel Testing System,* and administered only by MT personnel. **(T-1).**

11.17.10. Aircraft APU Installed Operation Training. The following requirements and standards will apply to qualifying maintenance personnel on operating the aircraft APU:

11.17.10.1. When conducting initial operator qualification training for APU, use the applicable video or other training program. **(T-1).**

11.17.10.2. A two-part closed book examination consisting of the following: **Note:** MAJCOMs will determine examination applicability requirements for PMA only APU operations in their supplement/addendum to this AFI.

11.17.10.2. **(AFMC)** Two-part testing does not apply to F-22 APU operators using the PMA from the ground. **(T-2).**

11.17.10.2.1. Part I - Students will be given a written/computer based examination on all bold face emergency procedures or all emergency procedures identified in applicable technical data requiring a passing score of 100 percent. **(T-1).**

11.17.10.2.2. Students will successfully complete Part I before taking Part II. **(T-1).**

11.17.10.2.3. Part II - Students will be given a written/computer-based examination covering normal APU run procedures and limitations requiring a minimum passing score of 90 percent, corrected to 100 percent. **(T-1).**

11.17.10.3. Personnel failing the examination will receive additional instruction before being re-tested. **(T-1).**

11.17.10.4. Students will not be given the same Part II test during re-testing efforts. **(T-1).**

11.17.10.5. After a second failure of the two-part closed book examination, the individual will be decertified. **(T-1).**

11.17.10.5.1. The SQ/CC (or equivalent) will determine if personnel may retest and continue with the program prior to being recertified. **(T-1).**

11.17.10.5.2. Individuals must attend all three phases of initial training prior to being recertified. **(T-1).**

11.17.10.6. Personnel must then accomplish an on-equipment practical evaluation for certification completion. **(T-1).**

11.17.10.7. Personnel will be recertified annually using the initial certification procedures. **(T-1).**

11.17.10.7.1. Recertification is not required if the individual is engine run certified and has maintained annual engine-run certification requirements.

11.17.11. Documentation. Qualifications of APU run certifying officials and APU run certified personnel, will be documented in the MIS and entered on the SCR. **(T-1).**

11.17.11.1. If applicable, MAJCOMs will define SCR applicability requirements for PMA only APU operations in their supplement/addendum to this instruction.

11.17.11.1.1. **(Added-AFMC)** Any personnel performing F-22 APU operation from the cockpit will be engine run qualified and listed on the SCR. **(T-2).**

11.17.11.1.2. **(Added-AFMC)** When another person is in the cockpit, personnel performing F-22 APU operations using the PMA from the ground will be engine run qualified and listed on the SCR. **(T-2).**

11.17.11.1.3. **(Added-AFMC)** Personnel performing F-22 APU operations using the PMA from the ground when nobody is in the cockpit do not need to be listed on the SCR. **(T-2).**

11.17.12. Proficiency. MAJCOMs will determine proficiency requirements for maintenance personnel authorized to operate APUs.

11.17.12. **(AFMC)** To maintain proficiency, maintenance personnel authorized to operate APU/GTC will perform at least one APU/GTC run every 180 days if applicable to the MDS. **(T-2).**

11.17.12.1. Units will track run proficiency requirements in the MIS. **(T-1).**

11.17.12.2. Supervisors will ensure individuals who fail to maintain proficiency are decertified. **(T-1).**

11.17.12.3. **(Added-AFMC)** Individuals authorized to operate the trim box will perform at least one trim utilizing the trim box, every 180 days. **(T-2).**

11.17.13. Certification tests are controlled items and will be handled IAW AFI 36-2605 and administered only by MT personnel. **(T-1).**

11.17.14. Uninstalled Engine Operation on Test Stands and Cells (includes Jet Fuel Starter (JFS)/APU uninstalled operations). All personnel identified for uninstalled engine run qualification will complete an uninstalled engine run training program prior to certification. **(T-1).** The following minimum requirements will apply:

11.17.14.1. Certification Requirements. Individuals will be certified for each specific engine TMS authorized to run IAW criteria established in **Table 11.1** of this instruction. **(T-1).**

11.17.14.1. **(AFMC)** Certified contractor personnel may be authorized to run uninstalled engines and/or small gas turbine engines when designated in writing by the respective MXG/CC/CL or equivalent. **(T-2).**

11.17.14.2. Certifying Officials. The MXG/CC will designate qualified TSgts or higher 2A671 AFSC (or civilian equivalent) or fully qualified/certified contractors or AFETS/CETS personnel, to serve as certifying officials IAW criteria established in **Table 11.1** of this instruction. **(T-1).**

11.17.14.3. Instructors. Individuals selected as instructors will be 7-skill level SSgts or above with a 2A6X1 AFSC (or civilian equivalent), a qualified contractor, or an

AFETS/CETS representative, and be run certified on each TMS (if they are to be certifying officials). **(T-1).**

11.17.14.4. Training. Uninstalled engine run training will consist of the following three phases:

11.17.14.4.1. Phase 1. **(T-1).** Phase 1 is formal training. Instruction will include, as a minimum, the following areas:

11.17.14.4.1.1. General engine familiarization to include, as a minimum, basic engine description, component location, and functions. **(T-1).**

11.17.14.4.1.2. Thorough familiarization of control cabs, NSSs, ETSs, and T-9 fire suppression control panels (if applicable). **(T-1).**

11.17.14.4.1.3. Thorough review of TO procedures with emphasis on notes, cautions, and warnings. **(T-1).**

11.17.14.4.1.4. Uninstalled engine operation to include normal operating parameters and limitations. **(T-1).**

11.17.14.4.1.5. Ensuring uninstalled engine emergency procedures are memorized. **(T-1).**

11.17.14.4.1.6. Local communication procedures. **(T-1).**

11.17.14.4.1.7. A two-part closed book examination (students will successfully complete Part I before taking Part II) consisting of the following:

11.17.14.4.1.7.1. Part I - Students will be given a written/computer based examination on all bold face emergency procedures or all emergency procedures identified in applicable technical datarequiring a passing score of 100 percent. **(T-1).**

11.17.14.4.1.7.2. Part II - Students will be given a written/computer based examination covering normal engine run procedures and limitations requiring a minimum passing score of 90 percent, corrected to 100 percent. **(T-1).**

11.17.14.4.1.8. Personnel failing the examination will receive additional instruction before being re-tested. **(T-1).**

11.17.14.4.1.9. Students will not be given the same Part II test during re-testing efforts. **(T-1).**

11.17.14.4.1.10. After a second failure of the two part closed book examination, the individual will be decertified. **(T-1).**

11.17.14.4.1.10.1. The SQ/CC (or equivalent) will determine if personnel may retest and continue with the program prior to being recertified. **(T-1).**

11.17.14.4.1.10.1.1. Individuals must attend all three phases of initial training prior to being recertified. **(T-1).**

11.17.14.4.2. Phase 2. **(T-1).** Phase 2 is the control cab evaluation. After successful completion of formal training, students will properly demonstrate the following

minimum requirements to a certifying official without discrepancies using the go/no-go standard:

11.17.14.4.2.1. Proper uninstalled engine start, run, and shutdown procedures, including notes, cautions, and warnings (engine not operating). **(T-1).**

11.17.14.4.2.2. Proper uninstalled engine bold face emergency procedures, including notes, cautions, and warnings (engine not operating). **(T-1).**

11.17.14.4.2.3. Knowledge of normal uninstalled engine operating limits, including notes, cautions, and warnings. **(T-1).**

11.17.14.4.2.4. Augmentor or thrust reverser operation (as applicable), including notes, cautions, warnings and emergency procedures. **(T-1).**

11.17.14.4.3. Phase 3. **(T-1).** Phase 3 is the practical evaluation. Each individual will receive a practical uninstalled engine run evaluation after successful completion of classroom training and control cab evaluation from a certifier. **(T-1).** As a minimum, the student will demonstrate successful completion of the following areas without discrepancies based on a go/no-go standard:

11.17.14.4.3.1. Run clearance procedures. **(T-1).**

11.17.14.4.3.2. Emergency communication procedures. **(T-1).**

11.17.14.4.3.3. Normal uninstalled engine start, run, and shutdown procedures, including notes, cautions, and warnings. **(T-1).**

11.17.14.4.3.4. Augmentor or thrust reverser operation (as applicable), including notes, cautions, and warnings. **(T-1).**

11.17.14.4.3.5. Proper emergency procedure corrective actions during all bold face uninstalled engine emergency conditions. **(T-1).**

11.17.14.5. Recertification. Recertification for certifying officials and uninstalled engine run qualified personnel will be accomplished annually. **(T-1).**

11.17.14.5.1. The following three requirements must be met to obtain recertification:

11.17.14.5.1.1. Successfully completing the written test (Part I and Part II) administered by the MT. **(T-1).**

11.17.14.5.1.2. Passing a control cab evaluation demonstrating knowledge of normal and emergency procedures to a certifying official. **(T-1).**

11.17.14.5.1.3. Completing a practical engine run demonstration. **(T-1).**

11.17.14.5.2. Personnel failing the written examination will receive additional instruction before being re-tested. **(T-1).**

11.17.14.5.3. Students will not be given the same Part II test during re-testing efforts. **(T-1).**

11.17.14.5.4. After a second failure of the two part closed book examination, the individual will be decertified. **(T-1).**

11.17.14.5.4.1. The SQ/CC (or equivalent) will determine if personnel may retest

and continue with the program prior to being recertified. **(T-1).**

11.17.14.5.4.2. Individuals must attend all three phases of initial training prior to being recertified. **(T-1).**

11.17.14.6. Proficiency. MAJCOMs will determine proficiency requirements.

11.17.14.6. **(AFMC)** All uninstalled engine/small gas turbine engine run certified individuals and certifiers will run at least one engine every 180 days. When not feasible to run every 180 days, individuals will complete part I and part II tests to maintain proficiency. **(T-2).**

11.17.14.6.1. Supervisors will ensure individuals who fail to maintain proficiency are decertified. **(T-1).**

11.17.14.6.1.1. Decertified individuals will recertify IAW **paragraph 11.17.14.5** of this instruction**. (T-1).**

11.17.15. Fire Control Panel Operation in NSS. This section applies to all NSS designed for enclosed aircraft and uninstalled engine operation (e.g., T-9, T-10, T-11, T-12, and T-20) with fire suppression systems. Only qualified personnel will be certified to use the NSS Fire Suppression Systems. **(T-1).** The following certification requirements will apply:

11.17.15.1. Meet criteria established in **Table 11.1** of this instruction. **(T-1).**

11.17.15.2. Training will consist of formal training using TOs and hands on familiarization and will include the following minimum requirements:

11.17.15.2.1. NSS Fire Suppression System familiarization and operation. **(T-1).**

11.17.15.2.2. Emergency procedures, including local notification procedures. **(T-1).**

11.17.15.3. NSS supervisor, contractor, AFETS/CETS personnel or individual designated by the NSS supervisor will serve as certifying official(s). **(T-1).**

11.17.15.4. Annual recertification of NSS Fire Suppression System certified personnel will be accomplished utilizing the same criteria as initial certification. **(T-1).**

11.17.15.4.1. **(Added-AFMC)** Certification will be tracked on SCR. **(T-2).**

11.17.16. **(Added-AFMC)** Special Test Projects. Some AFMC units will participate in special testing of uninstalled engines and/or small gas turbine engines that do not fall within the scope of the normal certification processes outlined in this chapter. **(T-2)** Under these circumstances, the affected unit will apply the following guidelines to ensure test project engines are operated to the safest extent possible:

11.17.16.1. **(Added-AFMC)** Ensure engine operations on test projects that do not have approved Air Force technical procedures have written operating procedures including emergency procedures approved by the MXG/CC/CL or equivalent and appropriate safety agencies. **(T-2).**

11.17.16.2. **(Added-AFMC)** When engine operating procedures do not exist in Air Force TOs, test project plans will specify use of commercial engine operating manuals (if they exist) and require a contractor or USAF test engineer for the duration of engine testing. **(T-2).**

11.18. Engine Blade Blending Training and Certification Program.

11.18.1. General. All units will have a comprehensive training program to ensure technical standards are met, and proficiency is maintained. **(T-1).** The number of individuals authorized to inspect and repair blades should be sufficient to meet mission requirements and production needs. Personnel will be certified IAW criteria established in **Table 11.1** of this instruction. **(T-1).** MXG/CCs may designate contractors in writing to complete blade blending certification.

11.18.2. Responsibilities and Management. The MT or TD will be responsible for management and development of the blade blending training program. **(T-2)**.

11.18.2. **(AFMC)** [DEV] Within the 412th TW, Responsibility and management for the Engine Blade Blending Training and Certification process will be completed by the Propulsion Flight. This process includes the Propulsion Flight due to the multiple different engine models. All responsibilities contained in AFI 21-101 will be adhered to by Propulsion Flight leadership.

11.18.2.1. As a minimum, the course will include care and handling of equipment, applicable technical data, fault isolation/damage assessment/defect size determination, techniques required to correctly inspect and repair blades and performance of an engine blade blend. **(T-1).**

11.18.2.2. Prior to placement on the SCR, the formal blade blending training (MT or TD course) and initial engine blade blending certification will be mandatory. **(T-1).**

11.18.3. MXG/CCs will appoint maintenance, TD, or AFETS/CETS personnel as instructors and ensure the following certification and proficiency requirements are tracked in the MIS by course code:

11.18.3.1. Formal training, engine blade blending course. **(T-1).**

11.18.3.2. Annual engine blade blending recertification. **(T-1).**

11.18.3.3. 180-day engine blade blending proficiency. **(T-1).**

11.18.3.4. **(Added-AFMC)** Initial engine blade blending certification. **(T-2).**

11.18.4. Certification Criteria. Certifying officials will be selected IAW criteria established in **Table 11.1** of this instruction. **(T-1).**

11.18.4.1. **(Added-AFMC)** Certification Criteria. Certifying officials will be selected IAW criteria established in Table 11.1 of this instruction. Units will limit the number of certifiers to a minimum to ensure standardized training and certification. Certifying officials will maintain proficiency in the same manner as other technicians; certifying officials will recertify each other. ***NOTE:*** **If applicable, assigned AFETS/CETS should be used to certify other certifying officials. (T-2).**

11.18.4.2. **(Added-AFMC)** Certified individuals who PCS to the same MDS and engine TMSM may by- pass formal training course. These individuals will be re-certified by a certifier prior to being added to the SCR. Carry over date of original class completion from previous documentation (certificate, training record, MIS printout). **(T-2).**

11.18.4.3. **(Added-AFMC)** Upon completion of the formal training, individuals are task evaluated by the certifying official (an individual other than the instructor who administered the course), and placed on the SCR. **(T-2).**

11.18.5. **(Added-AFMC)** Proficiency Requirements. As a minimum, B-1, B-2, F-15, F-16, F-22, F-35 and U-2 personnel must perform one blend repair every 180 days to maintain proficiency. Work center supervisors ensure personnel who do not meet this requirement are decertified. **(T-2).**

11.18.6. **(Added-AFMC)** Annual Recertification. Recertification is accomplished by having the technician demonstrate they can perform the task(s). A QA PE may be used to satisfy this requirement if the QA evaluator is a certifying official. **(T-2).**

11.18.7. **(Added-AFMC)** Blade blending procedures for installed/uninstalled engines/modules:

11.18.7.1. **(Added-AFMC)** Notify the Wing/Center FOD Monitor prior to blade blending anytime FOD is identified, other than for minor sand nicks or scratches (i.e. blending with emery cloth). **(T-2).**

11.18.7.2. **(Added-AFMC)** Fill out Blade Blending/FOD Damage worksheet or applicable form with the following information; engine serial number, stage number, number of blades blended, depth of damage before and after blend, area of damage and employee number/stamp number of maintenance personnel. **(T-2).**

11.18.7.3. **(Added-AFMC)** Notify EM section and forward Blade Blending/FOD Damage worksheet or applicable form to EM section for filing. The EM section will transcribe information provided in the Blade Blending/FOD Damage worksheet into the applicable engine/module records (i.e., AFTO IMT 95; if applicable) and CEMS, IAW TO 00-20-1. **(T-2).**

11.18.7.3.1. **(Added-AFMC)** The EM section will also document CEMS IAW 00-25-254-1/2. **(T-2).**

11.19. Engine Flexible Borescope Inspection Training and Certification Program. The purpose of this program is to ensure individual knowledge and proficiency levels; proper care and use of equipment; and standardization of program requirements.

11.19.1. All units maintaining engines using flexible borescopes will establish a comprehensive training program. **(T-1)**. Certification procedures described here are only for engine borescope certification.

11.19.1.1. Training will be annotated in training records. **(T-1)**.

11.19.2. MAJCOMs will:

11.19.2.1. Ensure an engine flexible borescope formal training course is developed, tracked and managed by MT/TD.

11.19.2.1.1. **(Added-AFMC)** MT, Propulsion Flight, or TD will develop and manage training. MXG/CC will select maintenance instructors or TD instructors to provide training, (AFETS/CETS may be used as alternate instructors). As a minimum, courses will include care and handling of the equipment, all borescope/ port locations to include all inspection requirements and procedures, all applicable

technical data, fault isolation/damage assessment/defect size determination, and performance of an actual engine borescope. **(T-2).**

11.19.2.1.2. **(Added-AFMC)** . Course material/instruction will include high interest borescope inspections (e.g., blade tip curl HS3 inspection on the F100-series engine). **(T-2).**

11.19.2.2. Ensure engine flexible borescope proficiency and annual recertification (by a certifying official) requirements are established by course code.

11.19.2.2. **(AFMC)** MT, Propulsion Flight, or TD will ensure engine flexible borescope proficiency and annual recertification requirements are established by course code.

11.19.2.3. Ensure time, training and documentation currency requirements are established for engine flexible borescope certified personnel who PCS to the same MDS/engine.

11.19.2.3. **(AFMC)** Personnel who utilize borescope equipment to inspect or perform maintenance on jet engine modules that are not installed on the final engine do not require recurring borescope training. Final borescope inspection of the completed engine must be performed by a certified technician who has completed this recurring requirement. **(T-2).**

11.19.2.3.1. **(Added-AFMC)** Personnel who utilize borescope equipment to inspect or perform maintenance on jet engine modules not installed on aircraft are required to complete initial borescope training for assigned TMS. **(T-2).**

11.19.2.4. Determine training requirements for personnel using borescopes for non-engine type inspections (e.g., behind ejection seats, wing boxes, etc.) to include, as a minimum, proper use and care of borescopes.

11.19.2.5. **(Added-AFMC)** Certified individuals who PCS to the same MDS and engine TMSM may by-pass the formal training course. These individuals must be re-certified by a certifier prior to being added to the SCR. Carry over the date of original class completion from previous documentation (certificate, training record, MIS printout). NOTE: If applicable, assigned AFETS/CETS should be used to certify other certifying officials. **(T-2).**

11.20. Flying Crew Chief (FCC) Program. The purpose of the FCC Program is to enhance mission effectiveness by providing qualified maintenance support for aircraft at locations other than home station. FCCs are qualified in their duty AFSC and are required to obtain, maintain, and apply basic knowledge in several other aircraft maintenance AFSCs. They are responsible for launch, recovery, inspection, servicing, generation, and maintenance of aircraft in austere locations and locations where specific MDS maintenance capability may not be available.

11.20.1. MAJCOMs may authorize/develop a FCC Program under the direction of AF/A4LM for maintainers who are required to regularly fly and maintain aircraft.

11.20.1.1. FCCs will be selected per mission requirements as directed by MAJCOMs and qualify for Special Duty Assignment Pay (SDAP) IAW AFI 36-3017, *Special Duty Assignment Pay Program*. **(T-1).**

11.20.2. The FCC program only applies to personnel assigned to positions on the Unit Manning Document with a "C" prefix for the DAFSC.

11.20.3. The following situations would not qualify the FCC for SDAP:

11.20.3.1. Occasional flights where the aircraft is used as transportation in lieu of commercial air.

11.20.3.2. Incentive or indoctrination flights.

11.20.3.3. Deployments where additional maintenance personnel are required at the designated location to supplement assigned maintainers.

11.20.4. Qualifying missions. A mission consists of one or more sorties with a mission number as entered on the AFTO Form 781, *Aircrew/Mission Flight Data Document*. The mission must meet the following criteria to qualify for this program:

11.20.4.1. The FCC is required to accomplish maintenance at locations other than home station to prepare the aircraft for its next departure. **(T-1).**

11.20.4.2. The mission must be one where FCCs are required to fly by higher authority written policies (e.g., special airlift missions, alert missions, special operations) or by TO to perform in-flight maintenance (e.g., helicopter). **(T-1).**

11.20.5. FCC Program responsibilities.

11.20.5.1. AF/A1PA oversees the overall SDAP and provides guidance in AFI 36-3017.

11.20.5.2. AF/A4LM is the SDAP functional manager for FCCs.

11.20.5.2.1. AF/A4LM sets criteria for FCCs, validates MAJCOM FCC reports, and forecasts FCC SDAP budget needs.

11.20.5.2.2. AF/A4LM approves/disapproves FCC position increases/decreases in coordination with AF/A1PA.

11.20.5.3. MAJCOMs implement the FCC Program and will appoint a FCC Program Manager to enforce standards and prepare the annual report.

11.20.5.3. **(AFMC)** HQ AFMC/A4MM manages the AFMC FCC program.

11.20.5.4. MAJCOM FCC Program Managers will determine which squadrons will participate in the FCC Program and will:

11.20.5.4.1. Validate and forward squadron FCC SDAP requests (**Attachment 5**) to AF/A4LM and AF/A1PA.

11.20.5.4.2. Annually validate FCC SDAP positions.

11.20.5.4.3. Assign FCC SDAP positions with an AFSC prefix of "C" and an appropriate SEI on command manpower documents.

11.20.5.4.4. Establish command unique training requirements and set additional qualification standards for their FCCs as needed.

11.20.5.4.5. Maintain quarterly and annual FCC reports (**Attachment 3** and **Attachment 4**).

11.20.5.4.6. Prepare and submit the command annual FCC report to AF/A4LM and AF/A1PA by 15 August each year. Submit the biennial FCC report to AF/A1PA upon request.

11.20.5.4.7. Review and approve/disapprove ACR for changes of the "C" prefix to an AFSC on the UMD.

11.20.5.4.8. Review and recommend approval/disapproval of ACRs for additions, deletions of the "C" prefix to an AFSC on the UMD.

11.20.5.5. MAJCOM (A1M) Command Manpower and Organization Responsibilities. XPM will:

11.20.5.5.1. Coordinate and obtain approval/disapproval from MAJCOM for Installation Manpower and Quality Office ACRs pertaining to validation of "C" prefix to AFSCs on the UMD.

11.20.5.5.2. Assign the "C" prefix to AFSCs upon approval from MAJCOM FCC Program Manager. This provides MAJCOM functional managers and unit senior maintenance managers the visibility of squadron FCC SDAP positions. **Note:** FCC SDAP positions do not effect a unit's manpower authorizations.

11.20.5.6. SQ/CC's will:

11.20.5.6.1. Administer the squadron FCC Program IAW AFI 36-3017, AFI 36-2101, *Classifying Military Personnel*, and this instruction. **(T-1).**

11.20.5.6.2. Ensure FCCs fly only when required for the mission. **(T-1).**

11.20.5.6.3. Appoint and remove personnel from the FCC Program IAW AFI 36-2101. **(T-1)**.

11.20.5.6.3.1. Assign FCCs for a minimum of one year, unless removed for cause. **(T-1).**

11.20.5.6.4. Ensure only qualified FCCs and assistant FCCs who meet minimum requirements IAW AFI 36-3017 receive SDAP and fly a minimum of three qualifying missions per quarter. **(T-1).** An indicator of having too many FCCs may be reflected in a unit whose FCCs routinely do not meet minimum quarterly requirements.

11.20.5.6.5. Assign no more than two FCCs per aircraft (an FCC and assistant FCC) to each qualifying mission unless otherwise approved by MAJCOM. **(T-2). Exception:** SQ/CC may assign the minimum number of additional FCCs when required to maintain proper work-rest cycles or to meet TO requirements.

11.20.5.6.6. Appoint a Unit FCC Program Manager. **(T-1).**

11.20.5.7. Unit FCC Program Managers will:

11.20.5.7.1. Track status and prepare unit reports. **(T-1).**

11.20.5.7.2. Ensure personnel possess the appropriate SEI for their MDS aircraft. **(T-1).**

11.20.5.7.3. Provide a letter to their Installation Manpower and Quality Office and an information copy to the MAJCOM FCC Program Manager to change, add, or delete a "C" prefix to the AFSC on the UMD. **(T-1).**

11.20.5.7.3.1. The letter will contain the unit designation, function account code, AFSC, position number, and a POC. **(T-1).**

11.20.5.7.4. Ensure FCCs and assistant FCCs are aligned in a duty position with a "C" prefix by initiating an AF Form 2096, *Classification/On-the-Job Training Action*, or special order. **(T-1).**

11.20.5.7.5. Counsel FCCs and assistant FCCs on SDAP termination (AFI 36-3017, Table 3 lists reasons for termination). **(T-1).**

11.20.5.7.5.1. SDAP stops on the dates listed in this table. As long as a "C" prefix is attached to an AFSC the member shall receive SDAP. **(T-1).**

11.20.5.7.6. Review, update, and authenticate the monthly SDAP roster. **(T-1).** The SDAP roster is the only administrative tool used to start, stop or continue the FCC pay entitlement.

11.20.5.7.6.1. If changes are made on the monthly SDAP roster, an AF Form 2096 or special order must be submitted to the Military Personnel Section (MPS). **(T-1)**.

11.20.5.7.6.2. Authentication of the monthly SDAP roster validates that each FCC is meeting the full intent of the program. **Note:** AFI 36-3017 provides commanders conditions concerning pay entitlements.

11.20.5.7.7. Submit SDAP position increase/decrease requests to MAJCOM FCC Program Manager by message, e-mail, or letter stating the number of positions to be increased/decreased with a brief justification. **(T-1).**

11.20.5.7.7.1. MAJCOMs will forward requests to AF/A4LM for final approval.

11.20.5.7.8. Provide information for processing DD Form 1610, *Request and Authorization for TDY Travel of DOD Personnel*, for FCCs. **(T-3).**

11.20.5.7.9. Ensure TDY orders authorize FCCs to travel in Mission Essential Personnel (MEP) status. **(T-1). Note:** Aeronautical orders do not apply to this program, as FCCs are not aircrew members.

11.20.5.7.10. Monitor training qualifications and currency to ensure only qualified FCCs are scheduled for missions. **(T-1).**

11.20.5.7.10.1. As a minimum, maintain a folder for each FCC containing training qualifications, immunizations, military passport information, appointment letters, and FCC Mission Reports. **(T-1).** If the unit mobility section already maintains these source documents, either electronic or paper copies may be maintained.

11.20.5.7.11. Coordinate scheduling of FCCs through Flight CC/Chiefs and operations schedulers. **(T-1).**

11.20.5.7.12. Maintain a Unit FCC Program Manager's Continuity Book. **(T-1).** As a minimum the continuity book will include:

11.20.5.7.12.1. Lists of required instructions with web addresses (including AFI 36-3017, AFMAN 36-2108 and this instruction). **(T-1).**

11.20.5.7.12.2. Unit FCC Program Manager appointment letter, AF Form 2096 or special orders. **(T-1).**

11.20.5.7.12.3. Manpower correspondence assigning "C" prefix AFSC. **(T-1).**

11.20.5.7.12.4. Quarterly and annual FCC status reports, SDAP position requests and miscellaneous FCC and SDAP correspondence. **(T-1).**

11.20.5.7.13. Report program status by Fiscal Year (FY) quarters to MAJCOM FCC Program Manager NLT the 15th day of the month following each FY quarter and report FY annual program status to the MAJCOM NLT 15 July each year. **(T-1).**

11.20.5.7.13.1. Annual report will consist of the previous FY 4th quarter and current FY 1st, 2nd, and 3rd quarters (1 Jul - 30 Jun). **(T-1).**

11.20.5.7.14. Submit funding requests for flight clothing, per diem, and other related expenses for the annual budget (for safety during flight, flight clothing is mandatory for FCCs and Assistant FCCs). **(T-1).**

11.20.5.8. Installation Manpower and Quality Office will:

11.20.5.8.1. Forward ACN to MAJCOM to add, delete, or change "C" prefixes on AFSCs existing on the UMD. **(T-1).**

11.20.5.9. En route supervisors will:

11.20.5.9.1. Not assign FCCs to work other en route aircraft. **(T-2).** However, FCCs left at an en route location and awaiting transportation may be assigned to work other en route aircraft (N/A to ANG).

11.20.5.9.2. Brief FCCs on local safety precautions, maintenance practices, and limitations. **(T-2).**

11.20.5.9.3. Coordinate with the FCC and aircraft commander on a work/rest plan and transportation to/from quarters. **(T-2).**

11.20.5.10. Aircraft commanders (ACs) will:

11.20.5.10.1. Establish with the FCC and en route supervisor a work/rest plan based on maintenance and mission requirements. **(T-2).**

11.20.5.10.1.1. The AC will be the primary decision authority to determine when the FCC begins a rest cycle for the next mission. **(T-2)**.

11.20.5.10.2. Upon arrival at en route locations, determine the FCC's ability to safely and effectively perform their duties. **(T-2).**

11.20.5.10.2.1. In making this determination, consider the duration of the flight, the ability of the FCC's to rest during the flight, and the quality of the rest the FCC's experienced during the flight. The FCC's primary job is preparing the aircraft (e.g., inspect, service, aircraft forms maintenance) for the next mission.

FCCs do not automatically enter crew rest with the aircrew upon arrival at an en route/transient location unless the duty day was exceeded.

11.20.5.10.3. If the FCC's safety is jeopardized by fatigue, the FCC's duty day must end. **(T-2).**

11.20.5.10.4. Ensure crew integrity for quarters is maintained and inform the FCC of billeting location. **(T-2).**

11.20.5.10.4.1. Any official business required by the FCC interrupts the FCCs rest period. This includes official business conducted by phone. Any interruptions must be made only under the most exceptional circumstances.

11.20.5.10.5. Provide feedback on the FCC's performance using **Attachment 2** of this instruction and return it to the Unit FCC Program Manager upon return to home station. **(T-1).**

11.20.6. FCC qualifications and responsibilities.

11.20.6.1. Primary FCC qualifications and responsibilities.

11.20.6.1.1. Primary FCCs should be a SSgt or TSgt 5- or 7-skill level.

11.20.6.1.2. As a minimum, the Primary FCC must be qualified and certified on the following MDS applicable items:

11.20.6.1.2.1. Possess a SEI of the aircraft assigned to the FCC. **(T-2).**

11.20.6.1.2.2. Refuel/defuel member and supervisor; concurrent servicing supervisor (as applicable). **(T-2).**

11.20.6.1.2.3. Tow member, tow supervisor, and tow brake operator. **(T-2).**

11.20.6.1.2.4. LOX/GOX servicing, nitrogen and tire servicing. **(T-2).**

11.20.6.1.2.5. Tire and brake change; launch; recovery; marshalling; pre-flight, thru-flight and post-flight inspection. **(T-2).**

11.20.6.1.2.6. APU operation/quick air start system. **(T-2).**

11.20.6.1.2.7. Engine run. **(T-2).**

11.20.6.1.2.8. Kneeling operation and cargo door/ramp/visor operation on applicable MDS. **(T-2).**

11.20.6.1.2.9. All applicable powered/non-powered AGE. **(T-2).**

11.20.6.1.2.10. Qualified to operate, troubleshoot, service, and perform maintenance on their aircraft's critical systems as required by the MAJCOM. **(T-2).**

11.20.6.2. Assistant FCC qualifications and responsibilities.

11.20.6.2.1. Assistant FCCs must be a 5-level A1C or above with at least a SEI on their assigned aircraft, and must accompany a fully qualified FCC. **(T-2).**

11.20.6.2.2. As a minimum, the Assistant FCC will be qualified and certified on the following MDS applicable items:

11.20.6.2.2.1. Refuel/defuel member. **(T-2).**

11.20.6.2.2.2. Tow member and tow brake operator. **(T-2).**

11.20.6.2.2.3. LOX/GOX servicing, nitrogen and tire servicing. **(T-2).**

11.20.6.2.2.4. Tire and brake change; launch; recovery; marshalling; pre-flight, thru-flight and post-flight inspection. **(T-2).**

11.20.6.2.2.5. APU operation/quick air start system. **(T-2).**

11.20.6.2.2.6. Cargo door/ramp/visor operation on applicable MDS. **(T-2).**

11.20.6.2.2.7. All applicable powered/non-powered AGE. **(T-2).**

11.20.7. Work/rest plan (see **Chapter 1** of this instruction).

11.20.7.1. The FCC flies in MEP status. FCC's typically fly with the aircraft for the purpose of accomplishing ground maintenance at the TDY location. The duty period typically starts when the FCC shows at the aircraft prior to departure. The AC makes the final determination of the FCC's duty day based on criteria established in **paragraph 11.20.5.11.2.1** of this instruction.

11.20.7.2. FCC's must be afforded adequate rest during each 24 hour period. **(T-2)**.

11.20.7.2.1. Rest is defined as the condition which allows an individual the opportunity for a minimum of 8 hours of uninterrupted sleep in a 24-hour period. Any interruption should be made only under the most exceptional circumstances.

11.20.7.3. Maximum shifts under normal conditions are 12 hours, but may be extended for mission requirements.

11.20.7.3.1. The AC is the decision authority for extended shifts; extensions should only be approved during or for exceptional situations or circumstances.

11.20.7.3.2. FCC's will not be required to work longer than 16 hours in any 24-hour period and must be given 8 hours of uninterrupted rest following extended work shifts. **(T-1)**.

11.20.8. MAJCOM FCC Program reporting.

11.20.8.1. MAJCOMs will forward a yearly report to AF/A4LM by 15 August.

11.20.8.2. Use previous FY 4th quarter; and current FY 1st, 2nd, and 3rd quarters. Late reports may postpone FCC waiver requests. Refer to **Attachment 3** and **Attachment 4** for reporting criteria.

11.20.9. Waivers.

11.20.9.1. Forward unit waiver requests to the MAJCOM FCC Program Manager, who will either disapprove/return to unit, or recommend approval/forward to AF/A4LM for final approval.

11.20.9.1.1. All approved waivers are reviewed annually as part of the annual report unless otherwise stipulated by the approval authority.

11.20.9.1.2. Waiver renewals. Submit a brief justification for waivers requiring renewal.

11.21. Maintenance of Flash Blindness Protective Devices.

11.21.1. MAJCOMs will define responsibilities across maintenance and operations for sustainment of flash blindness protective devises (e.g. cleaning, repairing, installing, inspecting, storing, packaging, and sealing) for assigned aircraft in a supplement to this instruction. As a minimum, MAJCOM supplements will assign responsibilities that ensure:

11.21.1. **(AFMC)** AFMC has zero Emergency War Order (EWO)/OPLAN 8010 responsibilities requiring flash blindness protective devices.

11.21.1.1. Units maintain aircraft thermal protective devices, shields, and associated hardware IAW aircraft TOs.

11.21.1.2. Units will establish a training program to qualify individuals to install, inspect, and when required, seal aircraft thermal protective devices and shields.

11.22. WRM External Nestable Fuel Tank Build-Up (NFTBU). MAJCOMs will ensure units sustain the capability to support assigned wartime taskings. External NFTBU is a wartime capability, supported/tasked through a UTC to provide a critical wartime skill that compensates for the expenditure of aircraft fuel tanks (refer to **Chapter 4** of this instruction). With exception of the core 2A6X4 personnel, augmentees may come from any group or squadron within the wing. MAJCOMs, as applicable, will:

11.22.1. Ensure units adhere to the direction outlined in their particular Mission Capability (MISCAP) statement and DOC statement IAW AFI 10-401, *Air Force Operations Planning and Execution*, governing the quantity, size, and composition of fuel tank build-up teams.

11.22.2. Provide guidance for UDMs to ensure personnel tasked/selected for WRM NFTBU team augmentees are not tasked for other wartime UTCs.

11.22.2.1. MAJCOMs must ensure UDMs responsible for deploying 2A6X4 personnel are designated as the focal point for WRM NFTBU team assembly and are required to develop/maintain a written plan. The plan must be kept current, reviewed annually and contain the following:

11.22.2.1.1. Specific manning positions across the wing to be tasked as NFTBU team augmentees. **Note:** The applicable independent NFTBU UTC Manpower Force Packaging System (MANFOR) will be used as a guide to construct the teams.

11.22.2.1.2. Guidelines for activation of the tank build-up teams are established.

11.23. Protective Aircraft Shelters (PAS). MAJCOMs that possess PAS will ensure units publish guidance for aircraft maintenance operations in a PAS environment. At a minimum, MAJCOM guidance and procedures will address:

11.23. (AFMC)Units that possess PAS will: Coordinate aircraft maintenance operations guidance in a PAS environment with HQ AFMC/A4M (**AFMC.A4M.workflow@us.af.mil**). **(T-2).**

11.23.1. PAS marking and floor plans.

11.23.2. Electrical Requirements.

11.23.3. Refueling/Defueling Operations.

11.23.4. Shelter Door Operations.

11.23.5. Aircraft Engine Operation.

11.23.6. Aircraft Positioning inside the PAS.

11.23.7. Aircraft Winching (Hot/Cold).

11.23.8. Placement and Storage of Munitions in the PAS.

11.23.9. Collocating Nuclear and Conventional Munitions (AF Munitions).

11.23.10. External Fuel Tank storage.

11.23.11. PAS maintenance and Inspection requirements not covered by exsisting publications (e.g. grounding/ventilation, mods, ect.).

11.24. Combat Sortie Generation. Combat sortie generation is a process by which mission capable aircraft are generated in a minimum amount of time, during peacetime or wartime, through separate 2AXXX and 2WXXX tasks or by Concurrent Servicing Operations (CSO). Combat sortie generation may include fueling, munitions/ammunition loading/unloading, aircraft reconfiguration, -6 TO inspections, and other servicing requirements, IAW applicable MDS TOs, Technical Order Data (TOD), IETM, TO 11A-1-33, *Handling and Maintenance on Explosives Loaded Aircraft*, TO 00-25-172 and other applicable directives. Procedures can be compressed through pre-positioning resources and concurrent performance of tasks.

11.24.1. MAJCOMs will define when to exercise combat sortie generation procedures. Procedures may be used during actual contingencies, scheduled exercises, and daily flying operations.

11.24.1. **(AFMC)** AFMC does not have a peacetime or wartime requirement for combat sortie generation.

11.25. Hot Refueling Procedures. Hot refueling is the transfer of fuel into an aircraft having one or more engines running. The purpose of hot refueling is to reduce aircraft ground time, personnel and equipment support requirements and increase system reliability by eliminating system shut down and subsequent restart. Refer to the following sources for additional guidance: TO 00-25-172, TO 00-25-172CL-4, Checklist -- *Aircraft Fuel Servicing with R-9, R-11 and Commercial Fuel Servicing Trucks and with Fuels Operational Readiness Capability Equipment (FORCE)*, TO 37A9-3-11-lCL-l, *Checklist, Operational and Organizational Maintenance Hot Refueling and Hot Integrated Combat Turn-Around Procedures, Aircraft Fuel Servicing Unit Type GRU 17/E Pantograph PACAF Type IV Hydrant Servicing*, and AFI 91-203. **Exception:** N/A to AFSOC maintenance units; AFSOC hot refueling procedures are performed by operations and fuels personnel only.

11.25.1. Maintenance personnel will not perform hot refueling operations until the location, equipment requirements, and personnel qualifications are certified IAW this instruction and TO 00-25-172. **(T-1)**.

11.25.1.1. Site Certification. MAJCOMs will develop hot pit refueling site certification requirements.

11.25.1.1. **(AFMC)** AFMC will follow the guidance in this instruction. There are no additional MAJCOM requirements. **(T-2).**

11.25.1.2. As a minimum, MAJCOM requirements will identify a base site certification team consisting of the following:

11.25.1.2. **(AFMC)** Main operating bases will: **(T-2)**

11.25.1.2.1. Field grade maintenance officer as the site certifying official.

11.25.1.2.2. Representative from OSS'sAirfield Operations Flight, knowledgeable of aircraft taxiways, parking ramp, and hot refuel safe distance requirements.

11.25.1.2.3. Maintenance member with AFSC 2AXXX from MXG/QA.

11.25.1.2.4. Wing Ground Safety member, minimum SSgt with AFSC 1S071 or civilian equivalent, task qualified in site certification and knowledgeable of hot refueling operations.

11.25.1.2.5. AFSC 2F071 Fuels Management Flight Member or civilian equivilent.

11.25.1.2.6. Civil engineering member with AFSC 3E271 or civilian equivalent familiar with aircraft ramp requirements for hot refueling.

11.25.1.2.7. Fire protection member with a minimum AFSC 3E771 or civilian equivalent familiar with fire protection standby requirements in TO 00-25-172 for hot refueling.

11.25.1.3. The following questions will be addressed as part of the site certification:

11.25.1.3.1. Has the aircraft been approved by System Safety Engineering Analysis (SSEA) for hot pit refueling?

11.25.1.3.2. Is adequate area provided to position the aircraft safely (evaluate ability to reposition due to wind direction)?

11.25.1.3.3. Is the ramp level to prevent drainage that could cause environmental impact? Request the fire department dump water to verify flow, if questionable.

11.25.1.3.4. Is the location adequate for the number of aircraft to be serviced?

11.25.1.3.5. Has a hot brake holding area been established?

11.25.1.3.6. Is there proper clearance between the hot pit area and hot brake holding area to prevent conflict?

11.25.1.3.7. Is there proper clearance between the hot pit and Explosive Clear Zone/Hot Cargo Pad/Airfield Clearance Zones to prevent violations of any area/zone?

11.25.1.3.8. Is the hot pit adequately clear of the aircraft/vehicle traffic area?

11.25.1.3.9. Is the hot pit and cursory check area of the ramp clear of FOD potential?

11.25.1.3.10. Does the location provide for rapid access of emergency equipment and egress of aircraft/equipment?

11.25.1.3.11. Are adequate grounding points available?

11.25.1.4. QA will maintain site certification documentation and a master listing of hot pit sites administered by the MXG.

11.25.1.4.1. QA will forward a new consolidated hot pit site certification listing to respective MAJCOMs any time sites are added, changed, or deleted. **(T-1).**

11.25.1.5. Each unit hot refueling site will be certified by a unit certification team, and approved by MAJCOM, when one of the following occurs:

11.25.1.5.1. Construction of new hot refueling sites. **(T-1).**

11.25.1.5.2. Change in the unit MDS, or when an additional MDS is acquired. **(T-1).**

11.25.1.5.3. Change in refueling equipment. **(T-1).**

11.25.1.5.4. Changes in the certified site areas which affect/change the previous certification. **(T-1).**

11.25.2. Hot pit site master listing. **(T-1).** This listing must contain the following information for all hot pit sites on the installation:

11.25.2.1. All sites must be identified by coordinates on a map. **(T-1).**

11.25.2.1.1. Each facility within the distance identified in TO 00-25-172, must be identified as to its use/contents and its distance in feet from the refueling site/operation. **(T-1)**.

11.25.2.1.2. Other refueling sites, aircraft parking areas, etc., also need to be identified and all distances must be shown even if a violation exists. **(T-1)**.

11.25.2.1.3. The request cover letter will state if there are no violations. **(T-1)**.

11.25.2.1.4. Procedures such as aircraft taxi routes should also be shown. Use arrows or dotted lines to show taxi directions, both entry and exit.

11.25.2.1.5. Address any restrictions to normal operations and actions required IAW TO 00-25-172.

11.25.2.2. State the type of equipment used for hot refueling at each site, (e.g., hose carts, truck). **(T-1).**

11.25.2.2.1. Show the location of any fixed fuel pits and usual location of cart or truck if used. **(T-1)**.

11.25.2.2.2. Unit-approved sites will be identifed on the aircraft parking plan. **(T-1)**.

11.25.2.2.3. OSS, CE and QA and will maintain copies of hot refueling sites on file. **(T-1).**

11.25.2.3. State whether or not all hot refueling areas comply with the quantity-distance separation requirements of AFMAN 91-201 in relation to surrounding exposed sites/potential explosion sites.

11.25.3. Hot refueling requires detailed procedures be published in appropriate TOs and unit-developed Local Checklists (LCL). Unit LCLs will be developed IAW **Chapter 6** of

this instruction and include detailed procedures, normal and emergency, to meet requirements of the local environment. **(T-1).**

11.25.3.1. Units will forward LCLs to their MAJCOM for approval. **(T-2).**

11.25.4. Units will publish procedures to supplement this section and outline local requirements and additional precautions as necessary for hot refueling, including hot refueling with ordnance, when authorized, IAW TO 00-25-172. **(T-1).**

11.25.5. AMXS tasked to perform hot refueling operations will ensure hot refueling crews are available to meet mission requirements. **(T-1).** MXS maintenance personnel may be utilized.

11.25.6. Hot Refueling Team Members and Duties.

11.25.6.1. Pad Supervisor. Responsible for overall supervision of hot refueling operations when two or more aircraft are simultaneously hot refueled on the same pad (multiple hot refueling).

11.25.6.1.1. Individual will possess a 5-skill level or higher qualification in an aircraft maintenance AFSC and be hot refueling supervisor "A" member qualified. **(T-2).**

11.25.6.1.2. Supervisors must have full view and control of multiple hot refueling operations. **(T-1)**.

11.25.6.2. Refuel supervisor "A" member. Individual will be refuel task qualified, capable of supervising hot refuel crew, possess an aircraft maintenance AFSC 5-skill level qualification and 1 year of flightline aircraft maintenance experience. **(T-2).**

11.25.6.3. Refuel crew "B" member. Individual will be task qualified, possess a flightline maintenance AFSC, and 1 year of flightline maintenance experience. **(T-2).**

11.25.6.4. Fuels specialist with 2F0X1 AFSC, "C" member. Individual will be refuel task certified on the specific facility/equipment, and task qualified for aircraft hot refueling. **(T-2).**

11.25.6.5. Additional refuel crew “D” member. Individual will be task qualified, possess a flightline maintenance AFSC, and have at least 1 year of flightline maintenance experience. **(T-2).** Use “D” members as required by applicable aircraft technical data.

11.25.7. Hot refueling team members and QA certifying officials/evaluators may be multi-MDS qualified when more than one weapons system is permanently assigned to a squadron.

11.25.7.1. After initial certification on each MDS, personnel must update their hot refueling currency by performing hot refueling on any weapon system. **(T-1)**.

11.25.7.2. Section NCOICs/Chiefs will ensure personnel maintain proficiency on each assigned MDS. **(T-1).**

11.25.8. Conducting Hot Refueling Training, Certification and Documentation. [For additional information, refer to AFI 11-235, *Forward Area Refueling Point (FARP) Operations*]. Qualification training of hot refueling personnel will be conducted in three distinct phases. **(T-1).** The three hot refueling qualification training phases are as follows:

11.25.8.1. Phase 1. "Familiarization" phase. Designated instructors familiarize trainees with applicable technical data, procedures and guidance for hot refueling. Place special emphasis on procedures for hot refueling with ordnance loaded, when authorized.

11.25.8.2. Phase 2. "Hands-on" phase. Apply information learned in Phase 1 to develop in-depth knowledge and proficiency in all facets of hot refueling. Training will include proper operation, preventive maintenance, use of hand signals and emergency procedures. **(T-1).** Simulate hot refueling by performing all hot refueling tasks without aircraft engines running (cold pit). Designated instructors will demonstrate tasks then require trainees to perform tasks, practice emergency procedures, critique performance and provide additional training as required. **(T-1)**.

11.25.8.3. Phase 3. "Demonstration/Certification" phase. Trainees will demonstrate hot refueling under the supervision of designated certifying officials with aircraft engine(s) running. **(T-1)**. The Squadron Certifying Officials will certify individuals upon successful demonstration of hot refueling. **(T-1)**. If Phase 3 training has not been completed within 30 days (N/A to ANG) of Phase 2 training, Phase 2 training must be repeated. **(T-1)**.

11.25.8.4. Qualification training will:

11.25.8.4.1. Stress safety requirements, emergency procedures and equipment inspection in all three phases of training. **(T-0).**

11.25.8.4.2. Ensure procedures in TO 37A9-3-11-1CL-1, TO 00-25-172, and TO 00-25-172CL-4 are taught to all team supervisors and members. **(T-1).**

11.25.8.4.3. Allow Phase 2 and Phase 3 training to be conducted utilizing joint sessions including 2F0X1 AFSC personnel and all maintenance AFSCs. **(T-1)**.

11.25.8.4.4. Utilize both fuels (2F0X1) and maintenance AFSC instructors for joint sessions.

11.25.8.4.5. Be conducted by MT (QA if MT not available). **(T-1).**

11.25.8.5. QA hot pit certifying officials and QA hot pit certifier augmentees (squadron certifying officials) will train, evaluate, and certify unit personnel. **(T-1).**

11.25.8.5.1. QA hot pit certifying officials will ensure augmentees conduct evaluations using procedures outlined in this instruction, applicable aircraft TOs and local procedures. **(T-1)**.

11.25.8.6. Hot pit certifying officials will be approved by the MXG/CC and tracked on the SCR. **(T-1)**.

11.25.9. Document training for personnel performing, evaluating, supervising or instructing hot refuel operations as follows:

11.25.9.1. Document all aircraft maintenance and 2F0X1 AFSC personnel Phases 1, 2, and 3 initial training in the TBA. **(T-1).**

11.25.9.1.1. For AFSCs where "refuel aircraft with engines operating" is not contained in the TBA, use AF Form 797/MIS to document initial hot refuel training. **(T-1).**

11.25.9.1.2. Track recurring hot refueling certification in the MIS. **(T-1).**

11.25.9.2. 2F0X1 AFSC personnel will use the TBA/AF Form 1098, *Special Tasks Certification and Recurring Training*, to document Phases 1, 2, and 3 initial/recurring hot refuel training. **(T-1). Note:** Fuels (2F0X1) certifying officials will be appointed by the LRS/CC IAW AFI 36-2201.

11.25.10. Track hot refueling members, by position, on the SCR. **(T-1).**

11.25.11. Unique proficiency, certifying, and decertifying actions for hot refuel team members will be outlined in MAJCOM supplements/addendums.

11.25.11. **(AFMC)** Training, certification, and recertification requirements for hot refuel team members are outlined in **Table 11.2** Personnel are decertified if they miss any semi-annual proficiency requirements or annual special requirements. Personnel can also be decertified by any hot/aircraft to- aircraft refueling supervisor, squadron/immediate supervisor, or QA any time one of these individuals sees an unsafe act or demonstrated lack of proficiency on the part of any hot and/or aircraft-to-aircraft refueling team member. **(T-2).**

11.26. Aircraft Rapid/Hot Defueling.

11.26.1. Rapid defueling presents hazards which are not normally encountered in normal defueling operations. Owning MAJCOMs will develop and sustain a rapid defueling capability to meet routine and contingency mission requirements IAW TO 00-25-172 and MDS-specific TOs.

11.26.1. **(AFMC)** AFMC does not have routine or contingency requirements for aircraft rapid/hot defueling.

11.26.1.1. Rapid defueling operations are considered hot defueling operations whenever the provider/source aircraft has an engine running.

11.27. 406 MHz Emergency Locator Transmitter (ELT) Systems.

11.27.1. Aircraft maintenance functions must register and track status of fixed-mounted aircraft 406 MHz ELT systems. **(T-0).**

11.27.2. In accordance with DODI 3002.02, USAF 406 MHz ELT systems must be registered in the DOD JSETS database. **(T-0).**

11.27.2.1. The POC for JSETS registration is the Personnel Recovery Mission Software (PRMS) Help Desk at **PRMSMail@jricp.osis.gov.**

11.27.3. The governing agencies are the Joint Personnel Recovery Agency (JPRA) and the Electronic Services Command at Hanscom AFB, MA. Refer to AFI 10-207, *Command Posts*, for Command Post or C2 function responsibilities regarding 406 MHz ELT and Personal Locator Beacon (PLB) systems.

11.27.4. Ensure procedures are established to update the ELT registration database whenever 406 MHz ELT–equipped aircraft are transferred to other commands/ wings, ELTs that are taken out of service, removed for maintenance or destroyed. **(T-0).**

11.28. Crash Damaged or Disabled Aircraft Recovery (CDDAR) Program.

11.28.1. WG/CCs responsible for active airfields/runways will implement a CDDAR Program IAW TO 00-80C-1, *Crashed, Damaged, Disabled Aircraft Recovery Manual*. **(T-1).** The program must be designed to provide a response and/or recovery capability of assigned host, tenant, and consider transient aircraft consistent with the following considerations: (1) urgency to open the runway for operational use; (2) prevention of secondary damage to the aircraft; and (3) preservation of evidence for mishap or accident investigations IAW AFI 91-202 and AFI 91-204. **(T-1).**

11.28.2. Responsibilities:

11.28.2.1. MAJCOMs will:

11.28.2.1.1. Ensure flying units maintain a CDDAR capability IAW 00-80C-1.

11.28.2.1.2. Designate a MAJCOM CDDAR OPR. As a minimum, the CDDAR OPR will:

11.28.2.1.2. **(AFMC)** HQ AFMC/A4MM is the MAJCOM POC for CDDAR.

11.28.2.1.2.1. Standardize CDDAR equipment inventory accountability and reporting requirements by MDS for all on hand CDDAR equipment prescribed by TO 00-80C-1, allowance standard and applicable weapons system TOs across assigned units with active airfields/runways.

11.28.2.1.2.1.1. Review unit's annual CDDAR equipment inventories to identify and document equipment shortfalls.

11.28.2.1.2.1.2. Coordinate Allowance Standard (AS) change request with the applicable AFMC AS activity IAW AFI 23-101.

11.28.2.1.2.1.3. Ensure excess CDDAR equipment is redistributed to fill internal shortfalls prior to units turning equipment into supply/DLADS as excess.

11.28.2.2. AETC will:

11.28.2.2.1. Develop, sustain, and administer the CDDAR training program.

11.28.2.3. AFMC will:

11.28.2.3.1. Provide approved tech-data outlining equipment procedures to safely respond and/or recover aircraft from a CDDAR event.

11.28.2.3.2. Provide timely engineering support to facilitate resolution of unique CDDAR events which cannot be resolved by exsisting tech-data.

11.28.2.3.3. Develop, manage, and maintain AS needed to sustain a weapon systems for peace-time and war time operations IAW AFI 23-101.

11.28.2.4. WG/CCs responsible for active airfields/runways will:

11.28.2.4.1. Collaborate to develop a publication IAW AFI 33-360, that assigns specific responsibilities and procedures to implement a CDDAR program IAW TO 00-80C-1. **(T-1).**

11.28.2.4.1.1. The following additional references are to be used in developing the publication: AFI 10-206, AFI 10-2501; AFI 21-103, AFI 91-203, TO 00-105E-9, *Aerospace Emergency Rescue and Mishap Response Information* and this instruction.

11.28.2.4.2. Ensure CDDAR responsibilities and procedures are coordinated with Fire Emergency Services, Wing Safety, CES, LRS, SFS, MDS, OSS, and other on-/off-base agencies, as applicable. **(T-1).**

11.28.2.4.3. Ensure wings with geographically-separated units/auxiliary fields outline support requirements in their publication. **(T-1).**

11.28.2.5. MXG/CC or equivalent will:

11.28.2.5.1. Ensure CDDAR mobility UTC equipment requirements are available to deploy and accounted for on an AS (if applicable). **(T-1).**

11.28.2.5.2. In coordination with the MSG/CC, determine unit vehicle/equipment requirements beyond those authorized in the AS(s) to provide 24/7 CDDAR response/runway clearing capability. **(T-1).** Units must identify vehicles and SE designated to support CDDAR recovery in a local publication to ensure 24-hour availability. **(T-2).**

11.28.2.5.3. Ensure as a minimum, units with a CDDAR requirement possess sufficient equipment to accomplish a recovery of the assigned MDS aircraft. **(T-1).** Refer to TO 00-80C-1 for specific requirements.

11.28.2.5.4. Establish an in-flight emergency response capability. **(T-1).**

11.28.2.5.5. Participate in CDDAR training exercises. **(T-1).**

11.28.2.5.6. Manage base level CDDAR equipment to minimize duplication of resources. **(T-1).**

11.28.2.5.7. Ensure an annual CDDAR equipment inventory is completed and an inventory report containing CDDAR excess and shortage equipment items is sent to MAJCOM CDDAR OPR annually, NLT 30 Sep. **(T-1).**

11.28.2.6. CDDAR Team Chief and alternate will:

11.28.2.6.1. Be designated as the unit's subject matter expert on aircraft recovery operations and equipment and will be thoroughly familiar with and perform their Team Chief duties IAW TO 00-80C-1. **(T-1).**

11.29. Aircraft Battle Damage Repair (ABDR) (N/A to ARC). ABDR is an effective force multiplier contributing to wartime sortie production by assessing and repairing battle damaged aircraft rapidly to support flying operations. ABDR repairs will be accomplished during contingency or wartime only. However, weapons system program managers may approve ABDR repairs during peacetime on a case-by-case basis.

11.29.1. Responsibilities:

11.29.1.1. AF/A4L will provide overall policy and guidance for the USAF ABDR Program.

11.29.1.2. AFMC will:

11.29.1.2. **(AFMC)** AFSC/LGPM is the USAF ABDR Program Office, they will: **(T-2)**

11.29.1.2.1. Assume management responsibility for USAF ABDR Programs.

11.29.1.2.2. Publish a MAJCOM instruction to implement the ABDR requirements contained in this instruction.

11.29.1.2.3. Develop and manage ABDR policy for pre-positioning of tools, materiel kits, related SE, and management of ABDR training aircraft.

11.29.1.2.4. Support development and publication of ABDR TOs for new weapon systems.

11.29.1.2.5. Maintain ABDR UTCs for AFMC organizations.

11.29.1.2.6. Plan for and develop capability to repair battle/crash damaged aircraft.

11.29.1.2.6.1. Ensure plans include procedures to add additional repair capabilities into operating locations and provide aircraft evacuation alternatives.

11.29.1.2.7. Plan, program, and submit ABDR funding requests.

11.29.1.2.8. Maintain an ABDR Technical Support Office to advocate and provide day-to-day management of tasks associated with development, implementation, maintenance, and support needed to enhance the USAF ABDR capability.

11.29.1.2.9. Provide support in determining technical requirements, repair techniques, repair materials, assessment aids and Research & Development (R&D) efforts.

11.29.1.2.10. Manage TO 1-1H-39, *Aircraft Battle Damage Repair General Technical Manual,* and the engineering handbook for ABDR engineers and support initiatives to develop, publish, and maintain weapon system specific –39 TOs.

11.29.1.2.11. Ensure the status of aircraft permanently grounded for ABDR training is reported IAW AFI 21-103.

11.29.1.3. MAJCOMs will:

11.29.1.3.1. Establish a command focal point to work ABDR issues with AFMC.

11.29.1.3.1. **(AFMC)** AFSC/LGPM is the OPR.

11.29.1.3.2. In conjunction with AFMC, develop a command ABDR Concept of Operations (CONOPS) and ensure CONOPS covers unit plans for repair of battle/crash damaged aircraft during combat operations.

11.29.1.3.3. Address ABDR in mission need statements for new weapon systems that support or engage in combat operations.

11.29.1.3.4. Incorporate ABDR in command war planning documents.

11.29.1.3.5. Task AFMC ABDR UTCs to support OPLANs.

11.29.1.3.6. Develop plans for the reception and employment of AFMC ABDR teams at the onset of hostilities.

11.29.1.3.7. Formalize integration and beddown requirements in applicable base support plans (BSP) IAW AFI 10-404.

11.29.1.3.8. USAFE and PACAF will store and maintain serviceability, accountability and status reporting to include Financial Improvement and Audit Readiness (FIAR) reporting of AFMC owned and provided WRM ABDR trailers IAW established procedures.

11.29.1.3.9. Provide unit level weapon-system-specific tools (other than common hand tools) and equipment needed to repair battle/crash damaged aircraft.

11.29.1.3.10. Provide technical support to the ABDR Technical Support Office for live fire or similar testing.

11.29.1.3.11. Ensure shelf life items listed in TO 1-1H-39 and weapon system specific –39 TOs are maintained at required levels to support ABDR requirements.

11.29.1.4. Unit Responsibilities. Units will:

11.29.1.4.1. Document all aircraft battle damage on an AFTO Form 97, *Aerospace Vehicle Battle Damage Incident Debrief/Assessment Record*. **(T-1).** Instructions for filling out the AFTO Form 97 are found in TO 1-1H-39. This form is to be completed even if no - 39 ABDR TO type repairs are performed.

11.29.1.4.2. Completed forms will be forwarded to the Defense Systems Information Analysis Center (DSIAC). **(T-1).** CLASSIFIED messages must be sent to SIPR: **96tg.olacdsiac@afmc.smil.mil** and UNCLASSIFIED messages must be sent to NIPR: **96tg.olasdsiac.af97AForms@us.af.mil** for filing in the historical archives. **(T-1).**

11.30. Egress/Cockpit Familiarization Training.

11.30.1. All non-egress personnel who access aircraft cockpits with egress systems must complete initial and refresher familiarization training. **(T-1).**

11.30.1.1. As a minimum, initial and refresher egress/cockpit familiarization training will 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 work center supervisor. **(T-2).**

11.30.1.2. New personnel to the unit must receive initial familiarization training prior to accessing cockpits unless last duty position involved same mission design aircraft as current duty position. **(T-1).**

11.30.1.3. Personnel not requiring initial training will attend refresher training when they become due. **(T-1).**

11.30.1.4. Initial egress familiarization training will be hands-on using an aircraft. **(T-1).**

11.30.1.4.1. 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).**

11.30.1.5. 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).**

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

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

11.30.1.6. 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.

11.30.1.7. Training media must meet approval of the 2A6X3 AFSC MAJCOM Functional Manager (MFM) or current media produced by the 367 TRSS listed on the Defense Imagery at **http://www.defenseimagery.mil**. **(T-1).**

11.30.1.8. Individuals overdue for annual egress familiarization training will not access aircraft cockpits until they complete familiarization training. **(T-1).**

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

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

11.30.1.9.1.1. 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).**

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

11.31. Aircraft Defensive Systems Loading Program.

11.31.1. Aircraft Defensive Systems Loading Program provides instruction required to install/remove chaff/flare on unique mission aircraft in units where there are no 2W1 AFSC authorizations assigned. MAJCOMs will designate/approve units with no 2W1 AFSCs assigned authorization to install/remove chaff/flare on unique mission aircraft (N/A to units loading non-explosive chaff IAW approved tech-data).

11.31.1. **(AFMC)** Send request to HQ AFMC/A4MW at **AFMC.A4M.workflow@us.af.mil.**

11.31.2. Authorized units will establish a program to train and qualify personnel to perform these tasks IAW procedures outlined in AFI 21-201 and this chapter. **(T-1).**

11.31.3. Units will work with the installation WSM and Airfield Operations Flight to develop written instructions for handling chaff/flare-loaded aircraft IAW AFMAN 91-201 and AFI 91-202. **(T-1).**

11.31.3.1. As a minimum, written instructions will include procedures for launch/recovery/parking of chaff/flare-loaded aircraft; chaff/flare storage and transportation; and partially ejected flares and minimum requirements outlined in AFMAN 91-201. **(T-1).**

11.31.4. The MXG/CC will appoint a 7-skill or 9-skill level individual with maintenance AFSC as the Weapons Task Qualification Manager (WTQM). **(T-1). Note:** Units with 2W1 AFSCs assigned will comply with training/qualification requirements in **Chapter 10** of this instruction. **(T-1).**

11.31.5. WTQM and Weapons Task Qualification Crew (WTQC) responsibilities. The WTQM/WTQC provide oversight of chaff/flare loading operations to ensure they are conducted safely by providing initial and recurring load training, serving as the focal point for all chaff/flare loading issues, and observing loading operations during training. The WTQM and WTQC will not participate in load operations during training. **(T-1).**

11.31.5.1. WTQM. The WTQM typically holds a 2A871X AFSC; however, other flightline personnel with the 2AX7X AFSC may perform this function. The WTQM develops and oversees the chaff/flare loading standardization program, sets standards, and develops local policies and procedures. The WTQM will be tracked on the SCR. **(T-1).** The WTQM will:

11.31.5.1.1. Receive initial and recurring load qualification training from a WTQC and maintain currency on chaff/flare loading tasks. **(T-1).**

11.31.5.1.2. Once trained and qualified, the WTQM will develop and administer the unit's chaff/ flare load training program and train/qualify home station WTQC personnel. **(T-1). Note:** In the event a unit is initially tasked and has no qualified instructors, it will be necessary for the WTQM to become certified at a unit with qualified trainers. The WTQM will:

11.31.5.1.2.1. Ensure sufficient numbers of personnel are qualified to load chaff/flare to support the unit's mission requirements. **(T-1).**

11.31.5.1.2.1.1. A course code will be loaded in the MIS to identify trained personnel and qualification status. **(T-1).**

11.31.5.1.2.2. Establish time standards for initial and recurring loading tasks. **(T-1).**

11.31.5.1.2.2.1. Lead wings will develop time standards for each MDS for qualification purposes. **(T-1).**

11.31.5.1.2.2.2. The senior evaluator has the discretion to add to the time standard if inclement weather or equipment failure is the cause for exceeding the time standard.

11.31.5.1.2.3. As a minimum, the WTQM will identify the number of qualified personnel, names and employee numbers, MDS qualification, Defensive Systems (DS) equipment type, qualification date, and date(s) recurring training is due. **(T-1).**

11.31.5.1.2.4. The WTQM will select, train, evaluate, and qualify a minimum of two personnel as the WTQC on safe and reliable munitions loading procedures. **(T-1).**

11.31.5.1.2.4.1. The WTQM will evaluate and re-certify WTQC members annually. **(T-1).** WTQC members will be tracked on the SCR. **(T-1).**

11.31.5.1.3. Review and approve/disapprove AFTO Form 22s that pertain to chaff/flare loading technical data. **(T-2).**

11.31.5.1.4. Develop a local Task Assignment Lists (TAL) by utilizing lead wing-developed MDS-specific TALs for use during training for all chaff/flare loading operations. **(T-1).** A TAL is derived from applicable MDS munitions load checklist (TO 33-1-20-series) and identifies the load crewmember's responsibilities by step.

11.31.5.1.5. Ensure chaff/flare loading CTKs are standardized to the maximum extent possible. **(T-1).**

11.31.5.1.5.1. Chaff/flare loading CTKs must include all tools and equipment necessary to support applicable MDSs and AME configurations. **(T-1).**

11.31.5.1.6. Coordinate the scheduling of personnel for chaff/flare load training. **(T-1).**

11.31.5.1.6.1. The WTQM may delegate this duty to the WTQC.

11.31.5.1.7. Coordinate with PS&D, or the Regional Training Center (RTC), if applicable, to obtain chaff/flare dispensing system-equipped aircraft for training purposes. **(T-1).**

11.31.5.1.8. Ensure training magazines match the characteristics and "feel" of live magazines (e.g., weight, dimensions). **(T-2).**

11.31.5.2. WTQC. The WTQC assists the WTQM in managing the chaff/flare loading standardization program. The WTQC's primary purpose is to train and qualify personnel to load chaff/flares, but may also perform chaff/flare load duties. The lead WTQC member is typically a 7-skill level technician with the 2AX7X AFSC. Initial training will be conducted using inert munitions. **(T-1).** The number of trained WTQC members should be based on current/anticipated workloads and their ability to maintain proficiency on all applicable MDSs. WTQC members are qualified by the WTQM. The WTQC members will:

11.31.5.2.1. Provide personnel with initial and recurring load qualification training. **(T-1).** One WTQC member will be required to conduct practical training. **(T-1).**

11.31.5.2.2. Monitor personnel qualifications to ensure required academic and practical training is complete. **(T-1).**

11.31.5.2.2.1. Disqualify individuals if recurring requirements are not met. **(T-1).**

11.31.5.2.3. Spot-check personnel to evaluate proficiency. **(T-1).**

11.31.5.2.3.1. The WTQC will disqualify personnel who violate safety, technical data, and reliability procedures, or fail to demonstrate proficiency. **(T-1).**

11.31.5.2.4. Develop/coordinate training schedules and provide to PS&D for inclusion in the appropriate schedule (e.g., monthly, weekly). **(T-1). Note:** En route WTQMs forward training requirements to the unit training manager, who coordinates for ground training aircraft with the RTC.

11.31.6. Training Requirements. Personnel are considered qualified upon successful completion of training provided by a qualified WTQC.

11.31.6.1. Initial qualification will be conducted using inert munitions. **(T-1).**

11.31.6.2. Live munitions may be used during annual qualification to maintain currency. Load qualification training consists of academic and practical training.

11.31.6.3. Document the initial and recurring load qualification training requirements in the TBA. **(T-1).**

11.31.6.4. Academic and practical training must be provided during initial and recurring load qualification training. **(T-1).**

11.31.6.4.1. Academic training is required before practical training is accomplished. **(T-1).**

11.31.6.4.2. Initial practical training must be completed within 14 days of successfully completing initial academic training. **(T-1).**

11.31.6.4.2.1. Practical training should duplicate operational conditions as closely as possible.

11.31.6.4.3. Recurring practical task qualification is administered at least annually. **(T-1).**

11.31.6.4.3.1. As a minimum, practical training will include chaff/flare module serviceability criteria, actual chaff/flare loading, and operation of support equipment/AGE used during loading operations. **(T-1). Note:** Weapons task qualification academic training may fulfill the requirements for explosive safety training if the requirements of AFI 91-202 are included.

11.31.6.5. Academic training is administered every 12 months. **(T-1).** As a minimum, academic training will include:

11.31.6.5.1. Familiarization with chaff/flare loading publications, including TO 11A-1-33, MAJCOM and local procedures. **(T-1).**

11.31.6.5.2. Aircraft and munitions familiarization. **(T-1).**

11.31.6.5.3. Safety, security, and emergency procedures. **(T-1).**

11.31.6.5.4. Support, test, handling equipment, and special tools familiarization. **(T-1).**

11.31.6.5.5. TALs and aircraft specific 33-1-2 series TOs must be available at the load-training site. **(T-1). Note:** Training course control documents will be coordinated annually through the Wing Safety and MT. **(T-1).**

11.31.6.6. Personnel qualified on a specific task on a specific MDS are considered qualified to perform that task on all series of that MDS; however, the member must be familiar with differences within the MDS (e.g. cockpit switch locations). **(T-1).**

11.31.6.6.1. The WTQM or WTQC will provide practical, on-aircraft training on these differences and document these qualifications for each dispensing system in the qualification status or equivalent system. **(T-1).**

11.31.7. Disqualifying Chaff/Flare Load Personnel. Disqualification will be documented in the TBA and the qualification status system. **(T-1).**

11.31.7.1. Although not all-inclusive, the following criteria constitute grounds for disqualifying personnel from chaff/flare loading duties:

11.31.7.1.1. Failing to complete recurring training.

11.31.7.1.2. Committing a safety or reliability error.

11.31.7.1.3. Lack of proficiency.

11.31.8. Transient Aircraft.

11.31.8.1. Apply the following when working transient aircraft:

11.31.8.1.1. Under no circumstances will personnel attempt chaff/flare load operations without current technical data. **(T-0).**

11.31.8.1.2. If current technical data is available, then qualified personnel may perform chaff/flare load operations. **(T-1).**

11.31.8.1.3. If current technical data is available but no one is qualified on the transient aircraft type, then the MXG/CC (or AMS/CC at en route locations) may authorize the WTQC or WTQM to de-arm and/or unload the aircraft.

11.31.8.1.3.1. The WTQM will submit a written request to the MXG/CC (or AMS/CC at en route locations) identifying personnel selected to perform the task, aircraft type and (if applicable) number of aircraft to be de-armed and unloaded. **(T-1).**

11.31.8.1.3.1.1. Approved requests will be maintained for 90 days. **(T-2). Note:** This is a temporary, one-time authorization to facilitate required maintenance when qualified personnel are not available.

11.31.9. Identification of Chaff/Flare-Loaded Aircraft. Verify chaff/flare load status of aircraft by checking AFTO Form 781A/C before performing any maintenance.

11.31.9.1. Explosive placards are not required on AMC aircraft.

11.31.9.2. If an aircraft is loaded with chaff/flare, it will be safed IAW applicable technical data prior to performing any maintenance. **(T-1).**

11.31.9.3. Before loading chaff/flares, review the AFTO Form 781C, *Avionics Configuration and Load Status Document*, for defensive systems inspection status. **(T-1).**

11.31.9.3.1. If chaff/flare is loaded on aircraft ensure/verify applicable MIS documentation requirements are completed. **Note:** Do not load chaff/flares if the aircraft is overdue a scheduled DS inspection.

11.31.10. Tracking and Reconciliation of Chaff/Flare-Loaded Aircraft.

11.31.10.1. Expenditure tracking and processing will be handled by Munitions Personnel (2W0X1) IAW AFI 21-201, Chapter 7. **(T-1).**

11.31.10.2. Munitions personnel will not use the direct input method to process flightline chaff/flare expenditures; all chaff/flare expenditures will be returned to the Munitions

Storage Area (MSA) for verification by munitions personnel before processing expenditures in Combat Ammunition System (CAS). **(T-1).**

11.31.11. Additional Requirements (as applicable).

11.31.11.1. Document DS software version data and aircraft inspections (e.g., 90-, 120-, or 180-day checks) on AFTO Form 781C. **(T-1).**

11.31.11.2. For software version data, enter the following information in the remarks section for each reprogrammable system: type system; installed Operational Flight Program (OFP) version; and/or Mission Data File (MDF) version (e.g., ALE-47, OFP XXXX, MDF XXXX).

11.31.11.2.1. If a system contains multiple OFPs, list all applicable versions (e.g., ALE-47, Programmer OFP XXXX, Sequencer OFP XXXX, MDF XXXX).

11.31.12. Chaff/Flare Build-up. Chaff/flare magazine build-up will only be accomplished by personnel with 2W0 AFSC or qualified contractors. **(T-1).**

11.31.12.1. Units will only perform chaff/flare build-up in facilities/locations approved by the installation WSM IAW AFMAN 91-201. **(T-1).**

11.31.12.2. Units must have an approved explosive site plan or explosives facility license on file with Wing Safety prior to initiating chaff/flare build-up or storage operations. **(T-1).**

11.32. Aircraft and Equipment Decontamination.

11.32.1. Maintenance organizations need to have the Ability to Survive and Operate (ATSO) in a Chemical, Biological, Radiological, Nuclear and high-yield Explosives (CBRNE) environment and have the capability to decontaminate operational aircraft, vehicle, and SE.

11.32.2. Units will employ AF and locally-developed TTPs IAW AFMAN 10-2503, *Operations in a Chemical, Biological, Radiological, Nuclear, and High-Yield Explosive (CBRNE) Environment.* **(T-1).**

11.32.2.1. TTPs provide the fundamental counter-chemical warfare (CCW) tools to survive to operate and maximize combat sortie generation capabilities in a CBRNE environment.

11.32.3. The following references in addition to MDS-specific technical data should be utilized when developing unit decontamination programs: AFI 91-203, AFI 10-2501,, AFPAM 10-100, *Airman's Manual*, TO 00-110A-1, *Guidelines for Identification and Handling of Aircraft and Material Contaminated with Radioactive Debris*, TO 00-20-1, TO 11C15-1-3, *Chemical Warfare Decontamination, Detection and Disposal of Decontamination Agents,* TO 11D1-3-8-1, *Decontamination Apparatus, Power Driven, Portable Type A/E32U-8*, (Engineered Air).

11.33. Senior Leader Mission Generation (SLMG) Course

11.33.1. The MAJCOM Senior Leader Maintenance Course has been replaced with the Senior Leader Mission Generation (SLMG) Course which is aligned as a component of Pre-Command Training at Air University, Maxwell AFB, AL. The SLMG Course will be mandatory for Wing CCs/CVs, OG/CCs, MXG/CCs, MSG/CCs, and their equivalent which

must be completed within 6 months of assignment. **(T-2)**. MAJCOM/CV is the waiver authority for attendance. Registration for SLMG will be accomplished along with registration for Pre-Command Training. **(T-2)**.

11.34. (Added-AFMC) Scanning Electron Microscope/Energy Dispersive X-Ray (SEM/EDX) Master Chip Detector Analysis Program (MCDP).

11.34.1. **(Added-AFMC)** General. This section establishes procedures for management of the Aircraft Engine Magnetic Chip Detector Debris Program for units with SEM/EDX machines, for all assigned F110-GE-100/-129 and F118-101 engines. **(T-2).**

11.34.2. **(Added-AFMC)** The NDI section NCOIC will be the POC for SEM/EDX related matters (ANG will be propulsion section NCOIC). **(T-2).**

11.34.3. **(Added-AFMC)** All organizations requiring recurring chip detector analysis service shall identify by letter a primary and alternate MCDP monitor for their unit. Letters will include the phone numbers of both the primary and alternate monitors. The letter will be updated annually or when personnel or phone numbers change. **(T-2).**

11.34.3.1. **(Added-AFMC)** All newly assigned MCDP monitors will attend a briefing by NDI lab. This briefing will cover the duties and responsibilities of all MCDP monitors. **(T-2).**

11.34.4. **(Added-AFMC)** All MCDP Monitors or their representatives will ensure the following:

11.34.4.1. **(Added-AFMC)** Magnetic Chip Detectors (MCD) are submitted for debris analysis for their aircraft and assigned engines IAW TOs. **(T-2).**

11.34.4.2. **(Added-AFMC)** Ensure MCD debris analysis is forwarded with the following information:

11.34.4.2.1. **(Added-AFMC)** AMU, rank/ name, aircraft serial number, engine serial number, total engine hours, date/time, visual chips, reason for analysis request and sortie number. This information will be annotated on Lead Command or locally developed form. **(T-2).**

11.34.4.3. **(Added-AFMC)** Ensure all MCD debris analysis documentation errors are corrected as soon as possible when notified of the error by the NDI lab. **(T-2).**

11.34.4.4. **(Added-AFMC)** Timely MCD analysis is critical to weapon system integrity and operational safety. Effective risk mitigation requires meticulous attention to ensure analysis is performed at prescribed technical data intervals. These intervals will not be exceeded. **(T-2).**

11.34.5. **(Added-AFMC)** The NDI lab will:

11.34.5.1. **(Added-AFMC)** Complete analysis and notify MOC of results in sufficient time to meet TO directed notification intervals. **(T-2).**

11.34.5.2. **(Added-AFMC)** MCD analysis indicating significant levels of M50 or other critical materials will be immediately reported to the MOC. MOC will in-turn contact the owning AMU to coordinate immediate return of affected aircraft to home station. **(T-2).**

11.34.5.3. **(Added-AFMC)** Immediately notify test cell personnel of analysis results for engines in the test cell. (T-2).

11.34.5.4. **(Added-AFMC)** Provide AMUs with one clean MCD for each detector submitted for analysis. **(T-2).**

11.34.5.5. **(Added-AFMC)** Notify the MOC, Maintenance Supervision, Propulsion Flight, and owning Lead Command NDI and Propulsion Functional Managers when a SEM/EDX unit becomes inoperable. **(T-2).**

11.34.5.6. **(Added-AFMC)** Immediately notify the AF Oil Analysis Program Office (639 ACSG/EN) to initiate repair action as soon as a SEM/EDX unit becomes inoperable. **(T-2).**

11.34.5.7. **(Added-AFMC)** Notify the AF OAP Office, MOC, Maintenance Supervision, Propulsion Flight, Lead Command Propulsion and NDI functional managers when the SEM/EDX unit has been repaired and is operational. **(T-2).**

11.34.6. **(Added-AFMC)** MOO/MX SUPT will:

11.34.6.1. **(Added-AFMC)** Be responsible for monitoring the MCDP on the flightline. **(T-2).**

11.34.6.2. **(Added-AFMC)** Ensure visual inspection of the MCD is performed IAW applicable TOs. **(T-2).**

11.34.6.2.1. **(Added-AFMC)** Ensure a Red dash entry is made in the aircraft forms when a visual MCD inspection is due. **(T-2).**

11.34.6.3. **(Added-AFMC)** Ensure MCDs are submitted for analysis within 75 minutes after engine shutdown. **(T-2).**

11.34.6.4. **(Added-AFMC)** Ensure current SEM/EDX levels are maintained for each aircraft serial number to indicate aircraft status relative to MCD analysis results. **(T-2).**

11.34.6.5. **(Added-AFMC)** Coordinate with MOC to recall aircraft determined to be flying with unacceptable levels of debris. **(T-2).**

11.34.7. **(Added-AFMC)** The MOC will:

11.34.7.1. **(Added-AFMC)** Serve as primary communication link for transfer of SEM/EDX information between the NDI lab and affected activities. **(T-2).**

11.34.7.2. **(Added-AFMC)** Ensure current SEM/EDX levels are maintained for each aircraft serial number to indicate aircraft status relative to MCD analysis results, IAW system technical data. **(T-2).**

11.34.7.3. **(Added-AFMC)** Immediately notify the owning AMU when MCD analysis indicates unacceptable levels of debris so they can coordinate recall of affected aircraft. **(T-2).**

11.34.8. **(Added-AFMC)** Cross Country/Deployed MCDP Analysis Requirements. **(T-2).**

11.34.8.1. **(Added-AFMC)** NDI will be notified prior to deployment to determine if MCDP support is available at the deployed location. **(T-2).**

11.34.8.2. **(Added-AFMC)** If it is determined that MCDP is not available, visual MCD inspections will be performed IAW applicable engine directives. **(T-2).**

11.34.9. **(Added-AFMC)** SEM/EDX Interactive Multimedia Instruction (IMI) Training Requirements. This 8005 training is required for 2A7X2, in addition to qualification training (CFETP). The CAF/MCL is located on HQ 8006 ACC/A4Q website **https://afkm.wpafb.af.mil/ASPs/docman/DOCMain.asp?Tab=0&FolderID=OO8007TE-AC-42-2&Filter=OO-TE-AC-42**. **(T-2).**

11.34.9.1. **(Added-AFMC)** F110 Engine Oil System Awareness Training (OSAT) (Course C6ADU00TIV0110) is required for all 2A3X3, 2A6X1, and 2A7X2 personnel performing maintenance on F110 engines -- flightline, phase and backshop. Course is Interactive Multimedia Instruction through local Maintenance Training Section and must be completed within 90 days of assignment and annually. **(T-2).**

11.34.9.2. **(Added-AFMC)** F118 Engine Oil System Awareness Training (OSAT) (Course C2ADU20TCB0335) is required for all 2A3X3, 2A6X1, and 2A7X2 personnel performing maintenance on F118 engines -- flightline, phase and backshop. Course is Interactive Multimedia Instruction through local Maintenance Training Section and must be completed within 90 days of assignment and annually. **(T-2).**

11.35. (Added-AFMC) Identification Friend or Foe (IFF) Mode IV Program.

11.35.1. **(Added-AFMC)** 100 percent of IFF-equipped possessed aircraft will be checked every 2 months or as determined by aircraft specific technical data. **(T-2).**

11.35.1.1. **(Added-AFMC)** Enter all checks in IMDS-CDB. AFADS (Thunderbirds) and Aggressor squadron aircraft are not considered IFF-equipped; therefore, are exempt from IFF Mode IV requirements. **(T-2).**

11.35.1.2. **(Added-AFMC)** Invalid Mode IV replies will not cause a CONUS training sortie to be aborted; however, a discrepancy will be entered into the aircraft 781As prior to flight. **(T-2).**

11.35.1.3. **(Added-AFMC)** Do not launch or enter aircraft into a contingency zone with a known inoperative Mode IV system, unless the contingency Area of Responsibility (AOR) has established procedures governing inoperative/degraded Mode IV capabilities. **(T-2).**

11.35.1.3.1. **(Added-AFMC)** For contingency missions, at a minimum check IFF/Mode IV on all applicable aircraft prior to first sortie of the day (or prior to placing on alert status). **(T-2).**

11.35.2. **(Added-AFMC)** Additionally, units will ensure fully operational IFF Mode IV systems by performing checks on all aircraft:

11.35.2.1. **(Added-AFMC)** Departing the Continental United States (CONUS) to overseas locations. **(T-2).**

11.35.2.2. **(Added-AFMC)** Flying overseas theater to theater missions (does not include intra-theater flying by overseas based aircraft). **(T-2).**

11.35.2.3. **(Added-AFMC)** Flying outside US airspace and returning to CONUS. (Missions that originate in Alaska, Hawaii, or U.S. Territories and do not depart U.S. controlled airspace are viewed as if they are missions remaining in CONUS). **(T-2).**

11.35.2.4. **(Added-AFMC)** Assuming alert status. Note: This satisfies preflight program requirements and eliminates unnecessary delay of aircraft launch. **(T-2).**

11.36. (Added-AFMC) Oil Analysis Program Responsibilities and Requirements (OAP).

11.36.1. **(Added-AFMC)** MAJCOM A4M Responsibilities. **(T-2).**

11.36.1.1. **(Added-AFMC)** Appoints a qualified SNCO to manage Command OAP and serve as a point of contact for OAP activities. **(T-2).**

11.36.2. **(Added-AFMC)** MXG/CC Responsibilities. **(T-2).**

11.36.2.1. **(Added-AFMC)** Appoints a Wing OAP Manager and alternate. **(T-2).**

11.36.2.2. **(Added-AFMC)** Ensures the NDI/OAP facility is on a priority repair list with base Civil Engineer. **(T-2).**

11.36.2.3. **(Added-AFMC)** Ensures base Civil Engineer maintains an alternate power source of sufficient voltage capacity at the OAP Lab to be used in times of power outage. This will allow the OAP process to continue without delay. **(T-2).**

11.36.2.4. **(Added-AFMC)** Ensures the NDI/OAP facility has a Class A telephone and a direct line to MOC to expedite the reporting of abnormal wear-metal trends. **(T-2).**

11.36.3. **(Added-AFMC)** Wing OAP Manager Responsibilities. **(T-2).**

11.36.3.1. **(Added-AFMC)** Manages the OAP IAW T.O. 33-1-37-1/2/3, Joint Oil Analysis Program Manual, AFI 21-124, Oil Analysis Program, and other applicable directives. **(T-2).**

11.36.3.2. **(Added-AFMC)** Develops procedures to establish policy and requirements for the wing OAP. Include a standardized method to ensure the total oil serviced since last OAP sample can be tracked and accurately entered on the DD Form 2026, Oil Analysis Request. **(T-2).**

11.36.3.3. **(Added-AFMC)** Ensures all organizations requiring OAP support appoint an OAP Manager and alternate using an appointment letter. **(T-2).**

11.36.3.4. **(Added-AFMC)** Provide consolidated quarterly OAP data report to the MXG/CC, the Squadron Operations Officer/Maintenance Superintendent, Propulsion Flight Chief, all organization OAP Managers, and the NDI Section Chief. **(T-2)** As a minimum, the following information will be included in the quarterly report:

11.36.3.4.1. **(Added-AFMC)** Number of OAP samples processed. **(T-2).**

11.36.3.4.2. **(Added-AFMC)** Number and percentage of DD Form 2026 errors. NOTE: Count each DD Form 2026 that has any errors as one error, then divide the number of discrepant DD Form 2026s by the total number of OAP samples processed for the error percentage. **(T-2).**

11.36.3.4.3. **(Added-AFMC)** Number of OAP laboratory maintenance recommendations. **(T-2).**

11.36.3.4.4. **(Added-AFMC)** Average OAP sample response time (SRT). NOTE: Enter SRT to the nearest tenth of an hour and do not include the time when the OAP lab is not manned. **(T-2).**

11.36.3.4.5. **(Added-AFMC)** Number and percentage of OAP samples that exceeded required sample response times. Obtain the percentage by dividing the number of OAP samples exceeding required sample response time by the total OAP samples processed. **(T-2).**

11.36.3.4.6. **(Added-AFMC)** Number and percentage of aircraft engines not sampled as required by applicable technical order. Accomplish this by dividing the number of aircraft engines not sampled as required by the total OAP samples processed. **(T-2).**

11.36.3.4.6.1. **(Added-AFMC)** Number of OAP lab maintenance recommendations confirmed by physical finding of abnormal wear or potential for catastrophic failure "hits". **(T-2).**

11.36.3.4.6.2. **(Added-AFMC)** For SEM/EDX equipped bases: Number of Magnetic Chip Detector (MCD) analyzed. **(T-2).**

11.36.3.4.6.3. **(Added-AFMC)** For SEM/EDX equipped bases: Number and percentage of Level 1, 2, and 3 warnings by material type. **(T-2).**

11.36.3.4.6.4. **(Added-AFMC)** For SEM/EDX equipped bases: Number of unserviceable MCDs found. **(T-2).**

11.36.3.4.6.5. **(Added-AFMC)** For SEM/EDX equipped bases: Number and percentage of CAF Form 22 errors. **NOTE:** Count each CAF Form 22 that has any errors as one error, and then divide the number of discrepant CAF Form 22s by the total number of MCDs analyzed for the error percentage. **(T-2).**

11.36.3.4.6.6. **(Added-AFMC)** For SEM/EDX equipped bases: Average SEM/EDX analysis response time. NOTE: This is the time from when the MCD is pulled to the time results are reported to the MOC. Enter the response time to the nearest tenth of an hour and do not include the time when the OAP lab is not manned. **(T-2).**

11.36.3.4.6.7. **(Added-AFMC)** For SEM/EDX equipped bases: Number and percentage of MCDs that exceeded required delivery time. Obtain the percentage by dividing the number of MCDs exceeding required delivery time by the total number of MCDs processed. **(T-2).**

11.36.4. **(Added-AFMC)** Operations Officer/Maintenance Superintendent Responsibilities. **(T-2).**

11.36.4.1. **(Added-AFMC)** Ensures all assigned aircraft are sampled IAW the applicable aircraft T.O. **(T-2).**

11.36.4.2. **(Added-AFMC)** Ensures OAP samples are delivered to the OAP lab with a DD Form 2026 filled out IAW T.O. 33-1-37-1. **(T-2).**

11.36.4.2.1. **(Added-AFMC)** In the DD Form 2026 "hours/miles since overhaul‖ block, for engines with engine monitoring systems (EMS) use engine operating time

unless the specific technical order directs otherwise (e.g., F110 engine use EMS in-flight time). Reconcile NDI/OAP lab and aircraft records using downloaded EMS data accordingly. For engines without EMS, use engine flying hours. **(T-2).**

11.36.4.3. **(Added-AFMC)** Ensures flightline personnel verify with the OAP lab that the information entered in the Oil Analysis Record matches during scheduled aircraft records checks. Verify, as a minimum, engine operating hours, time since oil change, oil serviced since last records check/OAP sample, engine serial number(s) and aircraft serial number. NOTE: MXG/CC or equivalent may waive verification of OAP records against aircraft records when aircraft are deployed and the scheduled aircraft records check is due. **(T-2).**

11.36.4.4. **(Added-AFMC)** Identifies AMU OAP Managers and alternates by appointment letter. Forward a copy to the Wing OAP Manager and the OAP laboratory. The letter will include grade, name, duty phone, AFSC, organization and office symbol. OAP manager will be a NCO and will serve as the primary liaison between their AMU and the OAP lab for all OAP issues. Ensures assigned OAP Managers or alternates attend all OAP meetings involving their AMU. **(T-2).**

11.36.4.5. **(Added-AFMC)** Ensures all aircraft engines under special OAP codes IAW T.O. 33-1-37 are not flown until results of the OAP sample(s) are known. Ensure no aircraft engines are operated until the following DD Form 2026 discrepancies are corrected and verified with the OAP lab: equipment and/or end item serial number error, hours (EOT or EFH) since overhaul error, oil change error, and oil added since last sample error. These items are essential to oil analysis trending and require removal of that engine from service until the discrepancy is corrected. **(T-2).**

11.36.4.6. **(Added-AFMC)** Ensures DD Form 2026 with equipment and/or end item serial number error, hours since overhaul error and oil added since last sample error are corrected immediately. **(T-2).**

11.36.4.7. **(Added-AFMC)** Ensures all maintenance actions affecting oil-wetted engine components are provided to the OAP lab using the remarks section of the DD Form 2026 or a suitable local form. **(T-2).**

11.36.5. **(Added-AFMC)** Propulsion Flight Chief Responsibilities. NOTE: When no Propulsion Flight exists or the Propulsion Flight performs no maintenance on the affected oil-wetted system, the MXG/CC or designated representative or equivalent assumes these responsibilities. **(T-2).**

11.36.5.1. **(Added-AFMC)** Ensures accurate and timely deficiency reports are submitted through the unit PIM to the applicable ALC engine program offices on all engines requiring tear down or overhaul due to an OAP laboratory maintenance recommendation and on all oil-wetted component failures. **(T-2).**

11.36.5.2. **(Added-AFMC)** Ensures a copy of the Oil Analysis Record is provided to the applicable repair facility for each engine undergoing scheduled maintenance or overhaul. **(T-2).**

11.36.5.3. **(Added-AFMC)** Makes the final decision regarding all OAP engine maintenance action recommendations. **(T-2).**

11.36.5.4. **(Added-AFMC)** Ensures all Propulsion Flight maintenance actions which affect oil- wetted engine components are provided to the OAP lab. This will be done by using the remarks section of the DD Form 2026 submitted with the OAP sample. **(T-2).**

11.36.5.5. **(Added-AFMC)** Appoints OAP Managers and provides the names by appointment letter to the Wing OAP Manager and the OAP lab. Include grade, name, duty phone, organization, AFSC and office symbol. **(T-2).**

11.36.5.6. **(Added-AFMC)** Ensures assigned OAP Managers or alternates attend all OAP meetings. **(T-2).**

11.36.6. **(Added-AFMC)** MOC Responsibilities. **(T-2).**

11.36.6.1. **(Added-AFMC)** Maintains an OAP status on each assigned aircraft showing all lab recommendation codes next to the aircraft serial number. Prior to commencing the flying day, verify status of aircraft or engines on special surveillance. **(T-2).**

11.36.6.2. **(Added-AFMC)** Relays to the OAP lab information regarding engine changes on- and off-station as they occur but no later than 0800 the next duty day. **(T-2).**

11.36.6.3. **(Added-AFMC)** Notifies the OAP lab when the cross country/deployed aircraft return.

11.36.6.4. **(Added-AFMC)** Initiates follow-up action when the oil analysis record from cross country/deployed aircraft is not returned to the OAP lab. **(T-2).**

11.36.7. **(Added-AFMC)** NDI/OAP lab NCOIC Responsibilities.

11.36.7.1. **(Added-AFMC)** Ensures the scheduled aircraft records check is documented on the affected engine's Oil Analysis Record with the date the check was accomplished and OAP lab person’s initials. **(T-2).**

11.36.7.2. **(Added-AFMC)** Ensures a copy of the Oil Analysis Record or a suitable automated form is provided to the propulsion flight for each engine undergoing scheduled maintenance or overhaul at depot, JEIM or CRF. **(T-2).**

11.36.7.3. **(Added-AFMC)** Immediately notifies MOC and the propulsion flight chief when an installed engine is restricted from operation or is placed on special sampling. **(T-2).**

11.36.7.4. **(Added-AFMC)** Ensures analysis results on all installed engines are provided to MOC after analysis of the OAP sample is complete. **(T-2).**

11.36.7.5. **(Added-AFMC)** Immediately notifies test cell and the propulsion flight chief when abnormal OAP results are discovered on test cell engines. **(T-2).**

11.36.7.6. **(Added-AFMC)** Ensures DD Form 2026s with equipment and/or end item serial number error, hours since overhaul error and oil added since last sample error are corrected immediately. **(T-2).**

11.36.7.7. **(Added-AFMC)** Tracks aircraft OAP sample response times for all assigned aircraft to ensure response time compliance. **(T-2).**

11.36.7.8. **(Added-AFMC)** Maintains a current appointment letter of all customer OAP managers. **(T-2).**

11.36.8. **(Added-AFMC)** OAP Sample Response Time Requirements for Routine OAP Samples. NOTE: The OAP sample response time begins at the time the OAP sample is taken and ends at the time the oil analysis results are reported to the MOC. **(T-2).**

11.36.8.1. **(Added-AFMC)** 2 1/2 hours for one and two engine aircraft. Deliver the sample to the OAP lab within 75 minutes of engine shutdown. MXG/CC may adjust the 2 1/2 hour rule as needed to accommodate flying windows. When the OAP lab is not manned, they shall provide results to the MOC NLT 2 hours after the beginning of the next shift. NOTE: OAP response time does not apply to aircraft that are geographically separated from the supporting OAP lab; however, aircraft will not fly beyond the applicable -6 T.O. sampling interval. **(T-2).**

11.36.8.2. **(Added-AFMC)** Five hours for all other aircraft. When the OAP Lab is not manned, they shall provide results to the MOC NLT 2 hours after the beginning of the next shift. NOTE: OAP response time does not apply to aircraft that are geographically separated from the supporting OAP lab; however, aircraft will not fly beyond the applicable -6 T.O. sampling interval. **(T-2).**

11.36.8.3. **(Added-AFMC)** Four hours for engine ground/trim and test cell runs. **(T-2).**

11.36.8.4. **(Added-AFMC)** Immediately processes/analyzes special "Red Cap" samples after drawing the sample. The OAP lab will assign priority to "Red Caps" over routine samples and expedite results to MOC. **(T-2).**

11.36.9. **(Added-AFMC)** OAP Requirements for Cross-Country Flights/Deployments. **(T-2).**

11.36.9.1. **(Added-AFMC)** Flightline personnel place an Oil Analysis Record in the aircraft AFTO Form 781-series forms jacket prior to departure. **(T-2).**

11.36.9.2. **(Added-AFMC)** The OAP lab personnel ensure the Oil Analysis Record contains at least the last 10 analyses. The flightline expediter or pro super notifies the OAP lab in advance for cross-country documents. **(T-2).**

11.36.9.3. **(Added-AFMC)** Flightline personnel sign for the Oil Analysis Record at the OAP lab and return it to the lab the day the aircraft returns to home station. **(T-2).**

11.36.9.4. **(Added-AFMC)** The OAP lab notifies MOC if the Oil Analysis Record is not returned. **(T-2).**

11.36.9.5. **(Added-AFMC)** The OAP lab reviews the returned Oil Analysis Record for adverse trends and takes necessary action. **(T-2).**

11.36.9.6. **(Added-AFMC)** AMUs will follow the OAP procedures in this supplement at the deployment sites. **(T-2).**

11.36.9.7. **(Added-AFMC)** Deployed OAP personnel shall have telephone or radio communication with MOC and the AMU to expedite reporting of abnormal OAP trends. **(T-2).**

11.36.10. **(Added-AFMC)** OAP Requirements for Transient Aircraft. **(T-2).**

11.36.10.1. **(Added-AFMC)** Transient maintenance personnel sample aircraft as required by this section and applicable -6 technical order. **(T-2).**

11.36.10.2. **(Added-AFMC)** Transient maintenance personnel draw the OAP sample and make a Red Dash entry on the AFTO Form 781A indicating, "Engine oil analysis results due". **(T-2).**

11.36.10.3. **(Added-AFMC)** When OAP capability exists at a transient location and an OAP sample is required, the OAP sample results will be known prior to aircraft departure. **(T-2).**

11.36.10.4. **(Added-AFMC)** Transient bases without OAP capability shall take required OAP samples and ensure samples are given to aircrew for processing at next base. **(T-2).**

11.36.10.5. **(Added-AFMC)** If OAP sample results are not provided before aircraft departure, the results shall be forwarded via FAX, e-mail or most expeditious manner by the local MOC or transient maintenance to the aircraft's next destination (either MOC, TA, or base operations). **(T-2).**

Chapter 12

MAINTAINING COMMERCIAL DERIVATIVE AIRCRAFT (CDA)

12.1. Background Information and Objective. The USAF procures CDA for various missions. These aircraft are originally Type Certificated (TC) to FAA regulations/orders; carry an FAA Standard Airworthiness Certificate and have FAA-approved aircraft maintenance manuals. All USAF-managed aircraft, and associated modifications, must meet the requirements of AFI 62-601, *USAF Airworthiness*, AFI 63-131, *Modification Management*, and AFI 63-101/20-101. PMs are ultimately responsible for maintaining configuration control and ensuring flight safety of systems within their portfolio. When a military mission is compatible with a certified civil usage, the USAF will utilize FAA-type certified CDA to the maximum extent practicable. To ensure safety and support, FAA-certificated modifications are performed on CDA. For maintenance and operations of CDA the AF will use AF-managed TOs or FAA-approved aircraft maintenance manuals and FAA regulations called out in 14 CFR Parts 43 and 91 as a guide.

12.2. AF/A4L will:

12.2.1. Coordinate relevant policies and procedures with SAF/AQ and the FAA.

12.3. The Program Manager (PM) will:

12.3.1. Be responsible for all elements of life cycle management IAW AFI 63-101/20-101.

12.3.2. When FAA manuals are used, issue technical data for configuration items and inspection requirements that are not approved by the FAA.

12.3.3. Review evaluations from the Lead Commands concerning Airworthiness Directives (AD), Service Bulletins (SB), Customer Bulletins (CB), All Operator Letters (AOL), and Aircraft Service Changes (ASC) and will determine extensions for each, if required.

12.3.4. For CDA which maintain an FAA (TC), ensure that the MAJCOM performs overhauls, rebuilding, major repairs, major alterations, minor repairs, and minor alterations in FAA-authorized repair facilities with appropriate ratings and authorizations or AF-approved equivalent.

12.3.5. Establish a maintenance plan with the Lead Command for aircraft originally TC'd by the FAA, but will not maintain an FAA Airworthiness Certificate or be maintained by FAA-certificated mechanics.

12.3.6. Follow AFI 63-131 for modification requests and approvals.

12.3.7. Obtain airworthiness approvals IAW AFI 62-601, *USAF Airworthiness*.

12.3.8. Coordinate with the FAA Military Certification Office (MCO) for approval of modifications that affect commercial derivative aircraft configuration IAW USDOT/FAA Order 8110.101, *Type Certification Procedures for Military Commercial Derivative Aircraft*.

12.3.9. For AF organically-maintained CDA to implement ADs, SBs or other FAA-approved modifications, issue TCTOs IAW TO 00-5-1 and TO 00-5-15. Reference one of the following in each TCTO:

12.3.9.1. The AD and/or SB involved.

12.3.9.2. The Supplemental Type Certificate (STC) number.

12.3.9.3. Other FAA approval.

12.4. Lead Commands will:

12.4.1. Ensure any new or modified configurations or maintenance conditions are coordinated with, and approved by, the designated Lead Command IAW AFPD 10-9 and the PM or equivalent responsible for the operational safety, suitability, and effectiveness (OSS&E) of the systems and end-items prior to implementation.

12.4.2. Assists ALC in determining additional inspection and component time-change requirements, intervals, documentation and publication update requirements.

12.4.3. Review evaluations from their field units on ADs, SBs, CBs, AOLs, or ASCs and make recommendations to the aircraft's PM.

12.5. Units will:

12.5.1. Evaluate ADs, SBs, CBs, AOLs, or ASCs and make recommendations to their Lead Commands, as required. **(T-1).**

12.5.2. Assist Lead Commands and the PM to determine additional inspection intervals and requirements. **(T-1).**

12.5.3. Comply with FAA ADs as directed by the PM. **(T-1).**

12.6. Maintenance Personnel Requirements. For AF-managed aircraft that maintain an FAA TC, maintenance personnel shall meet the FAA requirements and procedures to maintain airworthiness. **(T-0).** Air Force maintenance technicians and activities do not require FAA certification.

12.6.1. Maintenance may be performed by non-certificated FAA mechanics, provided they are supervised by FAA certificated mechanics.

12.6.2. Any annual or progressive inspection program, major repair, or major alternation will have an FAA certificated mechanic with an Inspection Authorization (IA) sign off on the aircraft’s return to service. **(T-0).**

12.6.3. For CDA that do not maintain a civil airworthiness certificate, maintenance is not required to be completed by an FAA-certificated mechanic. However, a maintenance plan detailing the maintenance personnel requirements shall be established between the PM and the Lead Command.

12.6.3.1. The plan shall address as a minimum the training requirements, the level of effort allowed (e.g. specific maintenance tasks as identified in the Original Equipment Manufacturer (OEM) maintenance manuals)), and tasks that shall be performed by FAA-certified mechanics, repair stations, or the OEM.

12.6.3.2. The maintenance plan will be approved by the PM with coordination by a local FAA Flight Standards District Office. **(T-1).**

12.7. Deviations/Changes to Inspection Requirements, Time Change Intervals, and Component/Aircraft Overhaul. Commercial derivative aircraft inspection requirements, time change, component and aircraft overhaul intervals are established and controlled by the OEM and approved by the FAA. When deviation from the OEM established maintenance standards/configuration is needed to meet AF mission requirements, units will send proposed changes to the PM through MAJCOM and for evaluation. **(T-1).**

12.8. Air Force Modifications to CDA and Components. AF modifications to CDA and components are developed following procedures outlined in AFI 63-131. All AF modification requests require coordination with the PM who will provide assistance in determining applicable requirements, forms and coordination necessary to correctly disposition aircraft and component modification requests.

12.9. Certification Basis for CDA. Elements of the certification basis for any CDA which are not met via FAA certification shall be satisfied by compliance with approved military airworthiness requirements derived from MIL-HDBK-516C, *DOD Handbook, Airworthiness Certifcation Criteria*. CDA whose primary mission is the transport of passengers shall be FAA TC; FAA certification of these CDA passenger carrying aircraft shall be maintained for the life of the air system.

Chapter 13

CENTRALIZED REPAIR FACILITIES (CRF)

13.1. Introduction. CRFs consolidate off-equipment intermediate-level, and in some instances, depot-level tasks for commodities such as aircraft engines, electronic warfare pods, avionics line replaceable units, wheel and tire assemblies, and other aircraft components. CRFs focus on efficiently providing maintenance, repair, and/or overhaul capabilities, support RN efficiencies and will be fully integrated into the Air Force Supply Chain. CRFs are considered part of the repair network and exist to ensure responsiveness to MGN requirements to sustain operations both at home station and/or when deployed. Management and control procedures are outlined in AFI 20-117 and, when published, AFMAN 20-118.

13.2. Organization. CRFs will be established within existing maintenance organizations (EMS, CMS, MXS), minimizing requirements for overhead and support. **(T-1).** Production oversight and monitoring of repair operations is the responsibility of the owning maintenance organization in which the CRF is established. Commanders with CRFs will manage the personnel, facilities, and processes for the CRF following the policies and procedures in this AFI, AFI 20-117, and, when published, AFMAN 20-118. **(T-1).**

13.3. CRF Production Requirements. AFMC will provide CRF production goals through the supply chain manager/repair network manager. CRF production requirements will be determined by capability and capacity (CAP 2) calculations IAW AFI 20-117.

13.4. Maintenance Squadron (EMS, CMS, MXS) Operations Officer/MX SUPT will:

13.4.1. Ensure the Node Manager (NM) executes enterprise production duties as outlined in AFI 20-117 and, when published, AFMAN 20-118. **(T-1). Exception:** AFSOC and ANG A4 manage CRF C-2 production requirements.

13.4.2. Ensure the NM identifies and up-channels negative trend data that impacts CRF repair/RNI CAP2 to the MAJCOM and RNM. **(T-1)**.

13.4.3. Provide CRF node performance, CAP2, and commodity status reports and metrics as defined in AFI 20-117, and, when published, AFMAN 20-118. **(T-1).**

13.4.4. Ensure the NM utilizes the information management systems prescribed in AFMAN 20-118 when published to provide timely status reports and receive workload requirements/ changes for commodity group repairs supported by the CRF. **(T-1).**

13.4.5. Identify systemic distribution, transportation and supply difficulties and coordinate with base LRS leadership and/or upchannel concerns to the RNM and MAJCOM CRF/Functional Manager for resolution. **(T-1).**

13.4.6. Follow established procedures to ensure the rapid movement of retrograde and sustainment assets between CRF and MGN supported units IAW AFI 23-101.

13.5. CRF Enterprise Information Management. Managers require accurate, timely, and enterprise repair data to make CRF command and control and production decisions. To facilitate this requirement, NMs will utilize systems, processes, and business rules prescribed by AFMAN 20-118 to provide repair data and ensure enterprise visibility. **(T-1).**

13.6. Mission Generation Network Support. Units supported by CRFs will maintain the level of intermediate-level repair capability necessary to sustain MGN operations. MAJCOMs must identify intermediate-level tasks and the resources required to perform MGN maintenance tasks for assigned weapon systems.

13.6. (AFMC)Follow AFI 20-117 and AFMAN 20-118.

13.6.1. Rotable Pools. Customer Wait Time (CWT) and transportation constraints may drive the establishment of a Centralized Rotable Pool (CRP) for Class VII end items such as engines and pods to meet established weapons system availability goals. Use of a rotable pool can enhance mission capability by placing serviceable assets closer to the user when the repair capability is centralized off base. Rotable pool size, compared to support unit spare levels, will be determined during deliberate planning between the appropriate RNM, and MAJCOMs.

13.6.1.1. **(Added-AFMC)** CRP requirements for items managed in the propulsion network will be determined using the Propulsion Requirements System process outlined in AFI 20-115. **(T-2).**

13.6.2. Cannibalization at supported units. When commodity LRU local retail stocks fall below mission requirements, retention of CRF-repaired end items as "CANN assets" may be necessary. However, this should be by exception, and must be approved by the appropriate RNM in coordination with the supporting MAJCOM CRF Manager. **(T-2).** CRFs will document their cannibalization process and notify supporting unit of approval to retain CANN assets. **(T-1).**

13.7. Documentation. The CRF and supported units will maintain all required status, inventory, and historical record documentation on CRF-repaired assets, IAW TO 00-20-1, AFI 21-103, and when published AFMAN 20-118 . **(T-1).**

13.7.1. Pod asset inventory, status and reporting requirements. CRFs and supported units will update RAMPOD daily in accordance with AFI 21-103 to include Tracking Control Numbers (TCN) and/or commercial carrier name if applicable as well as shipment date of transitory assets. **(T-1).** Shipping container status and locations are maintained in RAMPOD and must be kept current by the organization that physically possesses custodial responsibility. **(T-1).**

13.8. Metrics. CRFs will report performance against metrics IAW AFMAN 20-118 when published. **(T-1).**

13.9. Agile Combat Support (ACS). AFI 10-401 covers the procedures and standards governing AEF/ACS, and other required support to Combatant Commands. It also requires Air Staff and MFMs to publish FAM Guidance governing UTC posturing and deployment support strategies. CRFs support intermediate level maintenance requirements for in-garrison and deployed operations IAW approved Air Staff/MAJCOM FAM Guidance.

Chapter 14

AIRCRAFT AND EQUIPMENT MAINTENANCE CONTRACT SURVEILLANCE

14.1. Contract Surveillance.

14.1.1. Regulatory guidance. This chapter intends to build upon the contract oversight foundation provided by the Federal Acquisition Regulation (FAR) Part 1.602-2(d), Part 42, *Contract Administration and Audit Services*, FAR Part 46, *Quality Assurance*, DOD Procedures, Guidance and Information (PGI) 201.602-2, Mandatory Procedure (MP) 5301.602-2(d) *Designation, Assignment, and Responsibilities of a Contracting Officer's Representative (COR)*, and AFI 63-138, *Acquisition of Services.* This guidance provides the structure required to meet the oversight requirements of aircraft and equipment maintenance noted in FAR Part 46.202-4 and FAR Part 46.203(b) and (c) for performance-based activity aircraft and equipment contracts. The DOD COR Handbook is a good supplemental resource to assist CORs in performing contract surveillance: **http://www.acq.osd.mil/dpap/cpic/cp/acquisition_of_services_policy.html.**

14.1.2. COR technical guidance. Under the provisions of FAR Part 46.103(a) and PGI 246, this chapter provides the surveillance technical requirements for the inspection, testing, and performance-based activity quality requirements essential to ensure integrity of aircraft and equipment maintenance-related services.

14.1.3. Applicability. This chapter is applicable to service contracts awarded to accomplish aircraft and equipment maintenance and/or functions supporting aircraft and equipment (e.g. wash, Periodic Inspection (PE)/Isochronal Inspection (ISO), transient alert, and aircraft trainer maintenance). Oversight of COMBS, CLS, and CFT contracts is accomplished IAW AFI 63-501, *Air Force Acquisition Quality Program*.

14.1.3. **(AFMC)** For contracts that fall under Defense Contract Management Agency (DCMA) contract surveillance , follow applicable instruction DCMA INST 8210.1/AFI 10-220_IP/AR 95-20/NAVAIRINST 3710.1F, COMDTINST M13020.3.

14.2. Responsibilities.

14.2.1. MAJCOMS may designate a program management function to manage the requirements for each command's unique aircraft and equipment contract requirements IAW AFI 63-138.

14.2.2. Procuring Contracting Officer/Administrative Contracting Officer (PCO/ACO). The PCO is responsible for overseeing the administration of a contract and is the only individual with the legal authority to act as an agent between the government and the performance-based activity. The responsibility and authority of an ACO is derived by a delegation from a PCO.

14.2.3. Multi-Functional Team (MFT). The MFT is a customer-focused team responsible for assessing contractor performance and managing the functional requirement over the life of the contract. See Multi-Functional Team (MFT) described in AFI 63-138.

14.2.4. Functional Commanders/Functional Directors (FC/FD). The FC/FD is the government's functional authority for the contracted function and retains responsibility for

the success or failure of the contracted function. FCs execute management and oversight responsibilities of the acquisition process and provides oversight for delivery of acquired services. In addition to the responsibilities outlined in AFI 63-138, the FC/FD will:

14.2.4.1. Keep up-to-date on mission changes that could cause a contract modification. **(T-1).**

14.2.4.2. Review problem areas identified by CORs and coordinate with the PCO/ACO and Program Manager to resolve problems. **(T-1).**

14.2.4.3. Review, approve, and sign monthly surveillance schedules before the beginning of the upcoming monthly surveillance period. **(T-1).**

14.2.4.4. Review all Corrective Action Requests (CARs) and approve end-of-month summaries. **(T-1).**

14.2.4.5. If a Chief COR is assigned locally, the FC/FD will fulfill the role as supervisor. **(T-1).**

14.2.4.6. If required, fill Chief COR position with an individual that possesses the technical expertise applicable to the maintenance contract requiring surveillance. **(T-2).**

14.2.4.6.1. Within five duty days of filling Chief COR vacancies, the FC/FD will ensure a COR nomination letter is forwarded to the PCO/ACO. **(T-1).**

14.2.4.7. Participate as a voting member on Incentive Fee/Award Fee Review Boards. **(T-2).**

14.2.5. Chief COR. When large contracts require multiple CORs, MAJCOMs may assign a Chief COR. In addition to the COR supervisor responsibilities identified in PGI 201.602 and MP5301.602-2(d), the Chief COR will:

14.2.5. **(AFMC)** When a service contract requires multiple CORs, a Chief COR may only be assigned when there are more than 2 CORs and based upon the CO's and the FC/FD determination of type work/requirement to oversee COR surveillance activities. The below list of Chief COR responsivities is only a guide, CO and FC/FD will determined and document the Chief COR responsibilities. **(T-2).**

14.2.5.1. Establish/maintain a COR file by maintaining COR records (mods, minutes, invoices, inspection results, etc.) and Memorandum for Record(s) (MFR) on significant issues relating to the contract. **(T-2).**

14.2.5.2. Inform the ACO in writing of any changes to the contract scope. **(T-2).**

14.2.5.3. Ensure timely government comment/approval of any draft deliverables required by the contract/order. **(T-2).**

14.2.5.4. Promptly report performance issues to ACO in writing. **(T-2).**

14.2.5.5. Verify adequate corrective actions are taken to resolve problems. **(T-2).**

14.2.5.6. Ensure hours worked by performance-based activity are the hours billed in performance-based activity invoices. **(T-2).**

14.2.5.7. Notify ACO if contract costs will exceed amount programmed for contract. **(T-2).**

14.2.5.8. Report any invoiced costs which are not appropriately charged to the contract. **(T-2).**

14.2.5.9. Validate sufficient funding is available before providing certification for invoice payment. **(T-2).**

14.2.5.10. Use Wide Area Work Flow system (WAWF) to validate the accuracy of financial figures submitted by the performance-based activity prior to the government paying for services. **(T-2).**

14.2.5.11. Develop performance requirements in pre-award activities when requested. **(T-2).**

14.2.5.12. Assist with contract closeout. **(T-2).**

14.2.5.13. Fill COR vacancies or new COR positions with individuals possessing aircraft and equipment technical expertise applicable to the maintenance contract requiring surveillance. **(T-2).**

14.2.5.13.1. Within five duty days of filling COR vacancies, the Chief COR will forward the COR nomination letter to the PCO/ACO. **(T-2).**

14.2.5.14. Assist the PCO/ACO in providing an assessment on COR performance when requested. **(T-2).**

14.2.5.15. Monitor conflicts of interest or ethical compromise. **(T-2).**

14.2.5.15.1. In instances of COR ethical compromise, the Chief COR will inform the PCO/ACO immediately and recommend the termination of COR designation when appropriate. **(T-2).**

14.2.5.16. Ensure CORs receive required surveillance training and attain technical qualification in the appropriate areas before performing evaluations, inspections, or surveillance duties unsupervised. **(T-2).**

14.2.5.17. Ensure development of a Quality Assurance Surveillance Plan (QASP), prior to source selection that effectively measures and evaluates performance-based activity performance throughout the life of the functional contract requirement. **(T-2).**

14.2.5.18. Ensure each area surveilled has a COR assigned to ensure contract surveillance is accomplished. **(T-2).**

14.2.5.19. Annually review and revise surveillance checklists, evaluation guides, etc. for currency and completeness. **(T-2).**

14.2.5.20. Review PWS/SOW-required performance-based activity-developed publications prior to final signature and implementation to ensure they meet all contractual requirements and do not conflict with local, MAJCOM, or AF instructions. **(T-2).**

14.2.5.21. Coordinate performance-based activity initiated waiver requests of PWS/SOW standards tied to AF regulatory requirements (AFIs, TOs, etc.), through the FC/FD, PCO/ACO, and MAJCOM/A4 staff. **(T-2).**

14.2.5.22. Develop and publish a monthly schedule of COR surveillance activities (label as FOUO). **(T-2).**

14.2.5.22.1. Distribute the schedule to the FC/FD and PCO/ACO for approval prior to the beginning of the surveillance month. **(T-2).**

14.2.5.22.2. Maintain copies of all schedules on file for the life of the contract. **(T-2).**

14.2.5.23. Ensure discrepancies discovered by CORs are documented in the appropriate aircraft or equipment forms and MIS. **(T-2).**

14.2.5.23.1. Ensure CORs follow-up performance-based activity corrective and preventive actions. **(T-2).**

14.2.5.24. Accomplish Corrective Action Requests (CARs) for submission to the FC/FD for review and PCO/ACO issuance when performance-based activity performance does not meet contractual requirements. **(T-2).**

14.2.5.25. When required, develop Independent Government Estimates (IGEs) and evaluate performance-based activity proposals, providing comments and recommendations to the FC/FD and PCO/ACO. **(T-2).**

14.2.5.26. Verify and validate performance-based activity submitted performance indicators in end-of-month summaries; specifically, leading and lagging indicators, monthly logistics indicator report, PAMs, CEMS, or other MIS-derived metrics where the performance-based activity accomplishes the MIS function. **(T-2).**

14.2.5.27. Assist the PCO/ACO in determining quality system requirements and review the performance-based activity inspection system, quality program or other means used to control quality and comply with contract requirements. **(T-2).**

14.2.5.27.1. Submit comments through FC/FD and PCO/ACO for disposition. **(T-2).**

14.2.5.28. When required, accomplish annual Contractor Performance Assessment Rating System (CPARS) reports for submission to the FC/FD for review and PCO/ACO for final input. **(T-2).**

14.2.5.29. Ensure the Government meets its SOW or PWS contractual obligations. **(T-0).**

14.2.5.30. Ensure Government Furnished Equipment/Government Furnished Property (GFE/GFP) provided, is managed, maintained, accountable and used IAW contract/PWS requirements (FAR Part 45) and applicable Technical Order standards. **(T-0).**

14.2.5.31. Ensure COR duties/responsibilities are properly addressed in EPRs/appraisals. **(T-2).**

14.2.6. Contracting Officer Representative (COR). The COR observes then documents the performance-based activity's overall performance and provides the PCO/ACO with documentation that identifies contractual compliance or noncompliance.

14.2.6.1. Some COR responsibilities outlined in MP5301.602-2(d) have been assigned to the Chief COR, when assigned. The COR will:

14.2.6.1.1. Complete mandatory training requirements prior to performing surveillance duties unsupervised. **(T-0).**

14.2.6.1.2. Be knowledgeable of the specifications of the contract. **(T-1).**

14.2.6.1.2. **(AFMC)** If contract contains DFARS 252.228-7001 The Ground and Flight Risk Clause, see requirements in AFI 10-220.

14.2.6.1.3. Maintain proficiency in contract assessment methods. **(T-1).**

14.2.6.1.4. Be knowledgeable of the procedures for documenting surveillance. **(T-1).**

14.2.6.1.5. Perform surveillance according to the QASP. **(T-1).**

14.2.6.1.6. Review applicable incoming/outgoing official government and performance-based activity correspondence. **(T-1).**

14.2.6.1.7. Maintain proficiency in the MIS used by the performance-based activity and surveillance activities. **(T-1).**

14.2.6.1.8. Evaluate performance-based activity effectiveness in mishap investigations. **(T-1).**

14.2.6.1.9. Ensure weapon system discrepancies discovered are documented in the appropriate aircraft or equipment forms, and applicable MIS. **(T-1).**

14.3. Training Requirements. Training requirements are specified by MP5301.602-2(d), ACO/Quality Assurance Program Coordinators (QAPC) led training, and MAJCOM unique requirements. FCs, and CORs will complete all training requirements within 90 days of assignment. **(T-1).**

14.3.1. MAJCOM Training. MAJCOMs may determine additional initial and recurring COR training requirements as needed to ensure CORs remain technically competent on new or changed contract surveillance tasks, requirements, or concepts, along with updated FAR, DFARS, AFFARS, and MAJCOM policies related to contract oversight.

14.3.1. **(AFMC)** Conduct recurring COR training IAW MP5301.602-2(d). CORs will be knowledgeable of the tasks they surveil. CORs are not required to be certified on specific tasks; rather, they are duty-position qualified to inspect, surveil, and observe according to the requirement in this instruction and other applicable directives. **(T-2).**

14.3.2. CORs requiring special certification will comply with the requirements in **Table 11.1** of this instruction. **(T-1).**

14.3.3. CORs performing surveillance in hazardous areas or on hazardous tasks where specific training/safety requirements are prescribed (e.g., fuels, munitions, egress, etc.), will be trained on all associated safety requirements prior to performing the surveillance. **(T-1).**

14.4. Quality Assurance Surveillance Plan (QASP). The purpose of a QASP is to provide a planned process for surveilling the performance-based activity's actual performance and comparing that performance against the contractual requirements to determine conformity with the technical requirements of the contract. The QASP identifies what is going to be inspected, the method of inspection, and the frequency of inspection. The results of those inspections become the basis for documenting performance-based activity performance.

14.4.1. The QASP provides CORs with information to identify acceptable performance and potential reasons for any non-compliance. The QASP should be a "living" document (i.e., increase or decrease surveillance intensity based on performance/confidence in the performance-based activity) and revised throughout the life of the contract as performance warrants.

14.4.2. Although contractual regulatory requirements provide specific items to be included in a QASP, they do not provide guidance on format, surveillance requirements, or guidance on QASP development. The basic format of an aircraft and equipment QASP incorporates contractual regulatory requirements and unique aircraft and equipment requirements into the sections of Performance Planning & Preparation, Performance Assessment Surveillance, Performance Results Analysis & Reporting, and Performance Follow-up. In addition, organizations are responsible to ensure QASP requirements contained in FAR Part 46, DFARS 246.4, AFI 38-203, *Commercial Activities Program*, and AFI 63-138 are integrated within the following sections (See **Table 14.1**). The Automated Requirements Roadmap Tool (ARRT) can be used to prepare the QASP (and contract documents) for all performance-based acquisitions for services. ARRT is available for download at: **http://sam.dau.mil/ARRTRegistration.aspx**.

14.4.3. Documenting and reporting involves the documentation of individual inspections, monthly reporting of all scheduled inspections, documentation of performance-based activity non-conformance, and annual CPARS reporting.

14.4.3.1. Documenting individual inspections. TIs, Program Management (PM) Inspections, Customer Comment (CC) Inspections, "as observed," and Follow-up Inspections are documented using MAJCOM0-designated and/or QASP required surveillance forms. CORs are required to document discrepancies as soon as they are discovered using the applicable form and will subsequently notify the performance-based activity as soon as the surveillance is completed. **(T-1).**

14.4.4. End of month surveillance summary. The COR prepares a monthly summary to document COR surveillance activities at the end of each month. The format includes SS items inspected, non-Service Summary (SS) items, CC Inspections, "as observed" discrepancies, along with any submitted CARs and the status of all outstanding CARs not closed out. The content, format, and routing of the end of month surveillance summary is determined by each MAJCOM.

14.4.4. **(AFMC)** The COR prepares a monthly summary to document COR surveillance activities at the end of each month. The summary will include all Service Summary (SS) items evaluated and any non-SS items evaluated during the reporting month. (All non-SS item requirements shall be totaled and divided by 12. The surveillance plan (QASP) will schedule evaluation of these non-SS items so that at the end of each reporting year, all non-SS items have been evaluated once.) The summary shall also include the results of all surveillance activities by the COR (whether contractor has complied or not complied), along with any Corrective Action Requests (CARs) generated for the reporting month and the status of any open CARs. Individual CARs for non-SS items shall not be used to record ratings of contractor performance (award-fees, CPARS, etc.). However, if the number of CARs issued for non-SS item performance indicates a systemic lack of contractor control,

this should be included in the summary for possible action by the Contracting Officer (CO). **(T-2).**

14.4.4.1. **(Added-AFMC)** Each activity may adjust the specific contents and format to best suit their mission. The specific content and format of the summary may be developed to facilitate/support the annual CPARS rating. **(T-2)** However, the contents of the summary should include (as a minimum):

14.4.4.1.1. **(Added-AFMC)** Contract Number (could include Task/Delivery Order)

14.4.4.1.2. **(Added-AFMC)** Contractor (including Commercial and Government Entity (CAGE) code)

14.4.4.1.3. **(Added-AFMC)** Period of Performance date(s)

14.4.4.1.4. **(Added-AFMC)** Overall Rating of contractor performance (Acceptable or Not Acceptable)

14.4.4.1.5. **(Added-AFMC)** Specific surveillance actions performed

14.4.4.1.6. **(Added-AFMC)** SS item or non-SS item

14.4.4.1.7. **(Added-AFMC)** Results of specific surveillance activities (complies/does not comply). Results can be documented by data/metrics or by narrative statements.

14.4.4.1.8. **(Added-AFMC)** Contracting Officer notified of any observed non-compliance to coordinate any CARs

14.4.4.1.9. **(Added-AFMC)** CARs issued

14.4.4.1.10. **(Added-AFMC)** CARS still Open (reasons still open and estimated completion date and/or follow up date)

14.4.4.2. **(Added-AFMC)** The COR shall provide a copy of the summary to the Contracting Officer and the Functional Commander/civilian equivalent (or Services Designated Official, if applicable) no later than five working days after the end of the reporting month. This should allow sufficient time for review and coordination with the CO to issue any CARs and the Functional Commander/civilian equivalent (SDO) for other action. Specific members of Multi-Functional Team (MFT) may also be identified to receive the summary. The CO and Functional Commander/civilian equivalent (SDO) will determine if the summary needs to be provided/elevated to other activities or personnel. **(T-2).**

14.4.5. Corrective Action Request (CARs). Once the end of month summary is completed, the COR drafts a 1st Notice, 2nd Notice, or CAR, as determined applicable, for each SS or non-SS item that does not meet the contractual standard. The COR forwards the CAR to the FC/FD for review and the PCO/ACO for evaluation and subsequent issuance to the performance-based activity. CARs require the performance-based activity to identify the nonconformity's root cause, a reasonable corrective action, and a "get-well" date. The PCO/ACO, in consultation with the FC/FD and COR, then evaluate the performance-based activity's response.

14.4.5.1. If the performance-based activity's actions cited in their CAR response fails to correct the area of non-conformance, the COR ensures initiation of another CAR for any subsequent surveillance rating periods in the same non-conforming area. The COR may continue to hold open a current CAR. The COR tracks and reports all newly issued CARs in the end of month surveillance summary.

14.4.5.2. If any areas of non-conformance are not corrected, it is the responsibility of the FC/FD to contact the PCO/ACO or government program office to initiate discussion with corporate headquarters or issue a cure notice. In extreme circumstances a show cause notice or a contract termination notice may be required as determined by the FC/FD and PCO/ACO.

14.4.6. Annual Contractor Performance Assessment Rating System (CPARS). For performance-based activities without a program management function, the COR in coordination with the FC/FD and PCO/ACO accomplish annual performance-based activity performance reporting using the CPARS. CORs use information from the end of month surveillance summary reports and CARs to complete the annual CPARS report.

14.5. COR Inspections. Surveillance inspections must ensure CORs are "sampling" performance-based activity services and not acting, or giving the appearance of acting, as the performance-based activity's quality control. Performance-Based Service Acquisition (PBSA) principles denote COR sampling levels are at a much lower rate than the inspections levels of a performance-based activity quality system.

14.5.1. CORs predominately use the periodic inspection concept described in the DOD COR Handbook. However, CORs may use the 100 percent inspection concept on maintenance tasks that are critical or rarely performed. Since the FAR, DFARS, AFFARs, and contracting AFIs are silent on inspection definitions and use of inspection methodologies, this AFI prescribes aircraft and equipment COR surveillance be accomplished using Technical Inspections, Program Management Inspections, Customer Comments Inspections , "as observed" discrepancies, and Follow-up Inspections.

14.5.1. **(AFMC)** It is AFMC policy that all aircraft maintenance contracts/PWS include requirements for contractor control of maintenance task items, use and review of aircraft and/or equipment forms, validation of MIS documentation, use of technical data, tool usage, and performing/validating Foreign Object checks of the work area. **(T-2).**

14.5.2. Technical Inspections (TI). Validating technical requirements of a contract are accomplished by performing TIs. Any maintenance task accomplished in accordance with technical guidance, (e.g., TO, work-card, OEM manual, etc.) qualifies for COR surveillance under the TI concept. TIs may be performed while maintenance is being performed (In-progress (IP) inspection) or after maintenance is completed (equipment condition (EC) inspection and Quality Control (QC) evaluation inspection).

14.5.2.1. In-progress Inspection (IP). IP inspections consist of the evaluation of the maintenance task items, review aircraft and/or equipment forms, validate MIS documentation, check for technical data usage and currency; check for tool usage and care; and validate after maintenance FO checks of the work area etc. MAJCOMs will determine minimum IP surveillance requirements/frequencies, and rating criteria.

14.5.2.1. **(AFMC)** When IP inspections are determined to be an appropriate method of COR surveillance by the MFT or PM/CO, and COR, AFMC will ensure IP inspection requirements are included in the contract/PWS for inclusion into the QASP. This method of surveillance activity may require additional resources to maintain and may require process /procedural adjustments by the contractor. Therefore, any decision to incorporate IP inspections shall be based on the level of risk and be supported/adjusted by trend analysis data. As a minimum, the determination to continue the use of IP inspections should be reviewed annually by the MFT. **(T-2).**

14.5.2.2. Equipment Condition (EC) Inspections. EC inspections consist of the evaluation of visually available inspection items, review aircraft and/or equipment forms, and MIS documentation applicable to the job being surveilled. MAJCOMs will determine minimum EC inspection surveillance requirements/frequencies, and rating criteria.

14.5.2.2. **(AFMC)** When EC inspections are determined to be an appropriate method of COR surveillance by the MFT or PM/CO, and COR, AFMC will ensure EC inspection requirements are included in the contract/PWS for inclusion into the QASP. This method of surveillance activity may require additional resources to maintain and may require process /procedural adjustments by the contractor. Therefore, any decision to incorporate EC inspections shall be based on the level of risk and be supported/adjusted by trend analysis data. As a minimum, the determination to continue the use of EC inspections should be reviewed annually by the MFT. **(T-2).**

14.5.2.3. Quality Control (QC) Evaluation Inspections. QC evaluation inspections are technical inspections that are accomplished concurrently with the performance-based activity's QC to verify the QCs ability to readily detect technical deficiencies of in-progress work and equipment condition. MAJCOMs will determine minimum QC evaluation inspection surveillance requirements/frequencies, and rating criteria.

14.5.2.3. **(AFMC)** When QC evaluation inspections are determined to be an appropriate method of COR surveillance by the MFT or PM/CO, and COR, AFMC will ensure QC inspection requirements are included in the contract/PWS for inclusion into the QASP. This method of surveillance activity may require additional resources to maintain and may require process /procedural adjustments by the contractor. Therefore, any decision to incorporate QC inspections shall be based on the level of risk and be supported/adjusted by trend analysis data. As a minimum, the determination to continue the use of QC inspections should be reviewed annually by the MFT. **(T-2).**

14.5.3. Program Management (PM) Inspections. PM inspections are similar to IG inspections where CORs assess performance-based activity work center's ability to manage program areas they are contractually responsible for. Minimum PM inspection surveillance requirements will be determined by each MAJCOM.

14.5.3. **(AFMC)** When Program Management (PM) inspections are determined to be an appropriate method of COR surveillance by the MFT or PM/CO, and COR, AFMC will ensure PM inspection requirements are included in the contract/PWS for inclusion into the QASP. This method of surveillance activity may require additional resources to maintain and may require process /procedural adjustments by the contractor. Therefore, any decision to incorporate PM inspections shall be based on the level of risk and be supported/adjusted by

trend analysis data. As a minimum, the determination to continue the use of PM inspections should be reviewed annually by the MFT. **(T-2).**

14.5.4. Customer Comment (CC) Inspections. Oftentimes Government employees are customers of performance-based activity provided services. As such, CC inspections; although not a primary surveillance method, is a valuable surveillance tool in enabling CORs assess a performance-based activity's performance. MAJCOMs will determine the scope and applicability of CC inspections.

14.5.4. **(AFMC)** When Customer Complaint (CC) inspections are determined to be an appropriate method of COR surveillance by the MFT or PM/CO, and COR, AFMC will ensure CC inspection requirements are included in the contract/PWS for inclusion into the QASP. This method of surveillance activity may require additional resources to maintain and may require process /procedural adjustments by the contractor. Therefore, any decision to incorporate CC inspections shall be based on the level of risk and be supported/adjusted by trend analysis data. As a minimum, the determination to continue the use of CC inspections should be reviewed annually by the MFT. **(T-2).**

14.5.5. "As Observed" discrepancies. As-observed discrepancies are not inspections, rather they are discrepancies "observed by" CORs that are not associated with a scheduled inspection. Subsequently, they are not scheduled inspections and are not calculated into the monthly rating of any SS item. However, CORs must ensure all "as observed" discrepancies are reported in the end of month summary. Furthermore, CORs may use the cumulative results of "as observed" discrepancies towards CPAR ratings under the "Quality" category. MAJCOMs will determine the scope, applicability, and documentation procedures of "as observed" inspections.

14.5.5. **(AFMC)** COR will review "As Observed" discrepancies annually and recommend to the CO any adjustments to the QASP/contract/PWS base on trend data. **(T-2).**

14.5.6. Follow-up Inspections. Follow-up inspections verify the performance based activity's response/closure of a CAR. Specifically, follow-up inspections ensure the performance-based activity's quality system has determined the root cause and implemented corrective actions to eliminate future non-conformities. The COR will schedule follow-up inspections as needed to determine the viability of the performance-based activity's quality system.

14.6. Surveillance Schedule. The COR will ensure all contract requirements are surveilled at least once annually. **(T-1).** Typically, this includes surveilling all SS items monthly along with non-SS SOW or PWS requirements.

14.6.1. After determining annual surveillance requirements, CORs will develop a monthly schedule of surveillance activities. The schedule must be completed prior to the beginning of the month it covers. **(T-1).**

14.6.2. The FC/FD will review and sign the monthly surveillance schedule and ensure the PCO/ACO is provided a copy before the start of the upcoming month's surveillance. **(T-1).**

14.6.2.1. Changes to the monthly surveillance schedule within the month being surveilled must first be coordinated and approved by the FC/FD and ACO. **(T-1).**

14.6.2.2. When approved, the COR must post changes to the schedule as they occur and send copies to the FC/FD and PCO/ACO. **(T-1). Note:** MAJCOMs may approve surveillance scheduling on a quarterly basis for organizations with unique/minimal surveillance requirements that do not warrant monthly scheduling.

14.6.3. CORs will adjust surveillance activities commensurate with performance-based activity's performance and level of risk to the Government should the performance-based activity not perform in an acceptable manner. **(T-1).**

14.6.3.1. If a particular function of the performance-based activity's performance has a continuing record of acceptable performance in an area not likely to result in loss of life to AF personnel or damage to government property, surveillance of that function should be reduced.

14.6.3.2. Conversely, surveillance of that function should increase if performance-based activity performance of a function is less than satisfactory. However, any increase should be temporary and only accomplished to determine if the substandard performance is a statistical anomaly or an actual contractual non-conformity.

14.6.4. If minimum monthly surveillance requirements cannot be met due to equipment non-availability or special circumstances, an explanation in the end of month summary for each missed scheduled area and/or inspection category is required.

Table 14.1. Proposed QASP Layout.

Proposed QASP Layout	FAR	DFARS	AFFARS	AFI
Section A – Performance Planning & Preparation				
Performance Planning				
- Identify results MFT is striving to achieve				
- Identify strategy, methods, tools CORs & MFT use to assess contractor performance				AFI 38-203
- Incorporate management approaches used to address/validate Acquisition Strategy				AFI 21-101
- Panel (ASP) objectives & goals				AFI 21-101
-- Risks associated with contractor providing PWS required services	46.4	237.172		
-- Work requiring surveillance	46.401 (a)(1)			
-- Acceptable performance levels	44.101			
-- Quality requirements for contract services provided	46.103			
-- Surveillance methods for contractor surveillance	46.401 (a)(2)			
- Identify procedures for determining contractual non-conformity				AFI 21-101
- Identify financial withholding process for performance	32.10			

based services (if any)	04, (a) & (b) &(e)(1)(ii)			
Performance Preparation and Administration				
- Identify MFT and COR responsibilities				
- Identify procedures to ensure contractor's QC System is effective				AFI 21-101 AFI 38-203
- Identify process for maintaining contract performance documentation		PGI 201.602-2(ii)	MP5301.602-2(d), 2.5	
- Identify forms for surveillance along with documentation procedures				AFI 21-101
- Identify GFE management procedures				AFMAN 23-122
- Identify surveillance process for monitoring human trafficking	52.222-50	PGI 237.172 & 222.1703(4)		
- Ensure QASP effectively measures contractor performance through life of contract				AFI 38-203

Section B – Performance Assessment Surveillance				
Identify Surveillance Assessment Requirements				AFI 21-101
- Technical inspections				
- Work center program management inspections				
- Unscheduled inspections				
- “As observed” inspections				
- Customer complaint inspections				
- Non-Service Summary related inspections				
Identify Monthly Schedule Procedures				AFI 21-101
Section C – Performance Results Analysis and Reporting				
End of Month Summary Procedures				
- Technical and work center program management inspections				
- Non Service Summary inspections				
Procedures for reporting results of MAJCOM Inspections				AFI 21-101
Procedures for Financial Reporting				AFI 21-101
- WAWF invoicing				
- Cost reimbursable				
- Contractor submitted proposals				
- Contractor REA adjustments				

Corrective Action Procedures for Non-Conforming				AFI 21-101
- CARs				
- Corporate letters, cure notice, show cause, etc.				
- CPARs				
CPARS Reporting Procedures				AFI 21-101
- End of month summaries				
- MAJCOM Inspections				
- CARs, corporate letters, cure notice, show cause, etc.				
Section D – Performance Follow-Up				
Procedures for Following-up Contractor Performance				AFI 21-101
- TIs, PM inspections, CC inspections, “as observes,” and Follow-up inspections				
- CARs				
- MAJCOM Inspections				
- Corporate letters, Cure notice, Show Cause, etc.				
Procedures for Closing out Substandard Contractor Performance Items				AFI 21-101

Chapter 15

MAINTENANCE PLANS, SCHEDULING AND DOCUMENTATION (PS&D)

15.1. Responsibilities:

15.1.1. AF/A4L will:

15.1.1.1. Develop and distribute the MxCAP2 model and supporting guidance. The MxCAP2 model establishes a standardized and empirically supported process for projecting MDS-specific, wing-level maintenance capability and capacity. It provides maintenance units the ability to accurately develop and support flying hour projections and accommodate FHP reflows. **Note:** For additional information on the MxCAP2 model contact: **usaf.pentaton.af-a4.mbx.a4lm-workflow@mail.mil** or AF/A4LM at DSN 227-2228, Comm: (703) 697-2228. For technical support contact: **MxCAP_2_Team@bah.com**, Mon-Fri, 0900-1700 EST, DSN: 224-8314, Comm: (703) 614-8314.

15.1.1.1. **(AFMC)** See deviation paragraph **2.2.4.3**

15.1.2. MAJCOMs will:

15.1.2.1. Supplement this instruction to establish minimum requirements for the following:

15.1.2.1.1. Time Compliance Technical Order (TCTO) folders and monthly/weekly utilization and maintenance schedules.

15.1.2.1.1. **(AFMC)** Refer to para. **15.1.6.5.1 (T-2).**

15.1.2.1.2. Publish MAJCOM procedures for verification of configuration items.

15.1.2.1.2. **(AFMC)** Refer to para. **15.1.6.5 (T-2).**

15.1.2.1.3. Determine whether to ship removed engines to depot or induct into CRF repair.

15.1.2.1.3. **(AFMC)** Refer to para. **15.4 (T-2).**

15.1.2.1.4. Determine routing and approval for AF Form 2407.

15.1.2.1.4. **(AFMC)** Refer to para. **15.5.6.3.8 (T-2).**

15.1.2.2. Ensure MAJCOM Master Course Listing includes 2R1 weapon system familiarization courses and establish timelines for attendance.

15.1.3. PS&D will:

15.1.3. **(AFMC)** Maintenance schedulers are centralized (physically) in the MO PS&D section. **(T-2).**

15.1.3.1. Maintain historical documents and maintenance data essential for the development of wing plans, schedules and analysis of historical maintenance events. **(T-1).**

15.1.3.2. Maintain historical maintenance data within the MIS. **(T-0).**

15.1.3.3. Develop wing maintenance plans using MIS aircraft/system historical data input by all maintenance personnel. **(T-1).**

15.1.4. The PS&D NCOIC/Chief (or equivalent) will:

15.1.4.1. Act as the wing 2R1XX functional manager. **(T-2).**

15.1.4.2. Establish and coordinate plans for rotating 2R1XX personnel through various duty positions to increase field knowledge and experience every 24 months, not to exceed 36 months (N/A to ARC). **(T-2)**.

15.1.4.2.1. This rotation plan applies to TSgts and below as well as 3- or 5-skill level personnel of any rank. **(T-3).**

15.1.4.3. Evaluate the performance of decentralized work centers quarterly. **(T-2)**.

15.1.4.3.1. During the visit, ensure historical documents are properly maintained and review and discuss the 2R1X1 training and rotation plan with each section NCOIC. **(T-2).**

15.1.4.3.2. Provide formal written reports of deficiencies found during the visits to the MO OIC/SUPT and applicable section NCOIC. **(T-2)**.

15.1.4.3.2.1. Deficiencies will not be closed until validated by the MO OIC/SUPT (N/A to ANG). **(T-2)**.

15.1.4.4. Develop and sustain the PS&D MTP IAW AFI 36-2201 and AFI 36-2650. **(T-1)**.

15.1.4.4.1. Provide/schedule assigned personnel weapon system familiarization, core task/certification, and proficiency training and evaluation. **(T-1)**.

15.1.4.4.1.1. Document familiarization training in the individual's TBA. **(T-1).**

15.1.4.4.2. Ensure civil service training is conducted IAW applicable local bargaining agreements and contractor maintenance organizations comply with training plans established in the PWS, SOW, or Performance Requirements Statement (PRS). **(T-1).**

15.1.4.5. Provide SME on all maintenance scheduling issues and equipment historical document AFTO Form 95, *Significant Historical Data*) management to Quality Assurance (QA) during inspection/evaluations. **(T-1)**.

15.1.4.6. Designate the Maintenance Scheduling Application Tool (MSAT) administrator from within PS&D (for units utilizing IMDS only). **(T-1).**

15.1.5. The Wing AVDO will:

15.1.5.1. Complete AVDO duties IAW AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*, and maintain the inventory and utilization portion of the MIS Inventory, Status and Utilization subsystem. **(T-1).**

15.1.5.2. Oversee the aircraft transfer/depot program. **(T-1)**. The Wing AVDO will:

15.1.5.2.1. Coordinate any changes to the transfer/depot/DFT/CFT programs with the AMXS/AMU and all affected agencies. **(T-1).**

15.1.5.2.2. Generate AFTO Form 103, *Aircraft/Missile Condition Data*, to record certified maintenance needs for PDM aircraft IAW TO 00-25-4, *Depot Maintenance of Aerospace Vehicles and Training Equipment*, coordinate it with PS&D, QA, and AMXS maintenance supervision. **(T-1).**

15.1.5.2.3. Coordinate all assignment/possession code changes through the MAJCOM AVDO IAW AFI 21-103 and AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination.* **(T-1).**

15.1.5.2.3. **(AFMC)** Coordinate all assignment/possession planning through the AFMC AVDO, (AFMC/A4M) and the AFMC Aircraft Fleet Manager (AFMC/A3F). Coordinate all assignment/possession changes also through the AFMC Aircraft Fleet Manager (AFMC/A3F). **(T-2).**

15.1.5.3. Maintain a PDM schedule by tail/serial number for all assigned aircraft and equipment in support of AFMC and Lead Command plans and requirements. **(T-1)**.

15.1.5.3.1. This listing will contain all Lead Command-directed modification and maintenance programs. **(T-1)**.

15.1.5.3.2. The Wing AVDO will publish these schedules in monthly schedules and quarterly maintenance plans. **(T-2)**.

15.1.6. AMXS/AMU Dedicated Scheduler will:

15.1.6.1. Be assigned to MO and provide dedicated support to AMXS/AMU (N/A for ARC/AFSOC). **(T-2).**

15.1.6.2. Attend and actively participate in daily, weekly, and monthly scheduling, and quarterly and yearly planning programs and meetings. **(T-2).**

15.1.6.2.1. Inform AMXS/AMU supervision of maintenance capabilities or limiting factors that could affect maintenance production. **(T-2)**.

15.1.6.3. Coordinate with AMXS/AMU supervision and Operational Squadron (OS) operations schedulers when scheduling AMU aircraft to meet flying requirements. **(T-2)**.

15.1.6.3. **(AFMC)** In addition to the coordination with internal agencies including AMXS and OS operations schedulers, coordinate with applicable outside agencies directly involved in the aircraft flying requirements (i.e. engineers/test customers, other government agencies, sympathy organizations), as needed with the execution of flying scheduling processes and procedures.

15.1.6.4. Provide a listing of JCNs for following week's scheduled maintenance. **(T-1)**.

15.1.6.4.1. This list will be used to track Maintenance Scheduling Effectiveness (MSE). **(T-1)**.

15.1.6.4.2. PS&D will determine causes of missed maintenance for reporting MSE. **(T-1)**.

15.1.6.5. Manage TCTOs, TCIs, and SIs (including installed engine inspections) for aircraft assigned to their appointed AMXS/AMU. **(T-1).**

15.1.6.5. **(AFMC)** Individual work centers accomplishing TCIs are responsible for changing configuration information in MIS. The performing work center supervisor and PS&D must conduct supervisory reviews of configuration change, TCTO, SI and TCI events using MIS on-line capabilities. Unless otherwise specified in local procedures, schedulers must process IMDS screen 128 for all removal, installation, TCI, SI and TCTO compliance updates for any items installed on the aircraft. **(T-2)** EM must process IMDS screen 128 for engines and engine components. In addition:

15.1.6.5.1. **(Added-AFMC)** Attend TCTO planning meetings when aircraft or equipment are affected and initiate/ maintain folders for applicable TCTOs. TCTO folders will be standardized IAW TO 00-5-15, *Air Force Time Compliance Technical Order* (TCTO). Process as a minimum, and may be augmented with additional information provided in MOF PS&D guidance. AMU PS&D will attend the monthly TCTO review meeting hosted by MOF PS&D. **(T-2).**

15.1.6.5.2. **(Added-AFMC)** Manually update MIS products as changes occur IAW procedures established by MOF PS&D. **(T-2).**

15.1.6.5.3. **(Added-AFMC)** Correct TCI and SI program discrepancies identified by the MOF PS&D time change monitor as soon as possible. Provide MOF PS&D with MIS products or other documentation of the corrections. **(T-2).**

15.2. Data Documentation.

15.2.1. Maintenance Historical Documentation.

15.2.1.1. Maintenance historical documentation will be accomplished in accordance with TO 00-20-1 which outlines the requirements to capture and record the significant maintenance actions on aerospace vehicles and equipment. **(T-1).**

15.2.1.2. Historical documentation will be entered and tracked in the authorized MDS MIS. **(T-1).** When the MIS is not available, historical documentation will be documented and tracked on the AFTO Form 95, or equivalent. **(T-1).**

15.2.1.3. MAJCOMs should develop supplements to this instruction to identify aerospace vehicle and support equipment historical file content and retention requirements needed beyond the minimum requirements outlined in this instruction and TO 00-20-1.

15.2.2. Aircraft jacket files. Units will develop and maintain a standardized master aircraft jacket file for use throughout the wing following the requirements listed in this instruction, TO 00-20-1 and AFMAN 33-363. **(T-1).**

15.2.2.1. MAJCOMs will standardize MDS-specific requirements not captured in this instruction in supplements and addendums to this instruction.

15.2.2.1. **(AFMC)** Local procedures are authorized for compliance of any established AF policy unless specified in supplemental guidance for this paragraph. **(T-2).**

15.2.2.2. Aircraft jacket files will be maintained in PS&D and standardized IAW the master aircraft historical file developed by the PS&D NCOIC. **(T-1).**

15.2.2.2.1. Off-equipment maintenance documents may be decentralized to sections maintaining installed-on equipment assets (examples include fuel cell records at fuel systems section, landing gear strut records at hydraulics section etc.).

15.2.2.2.1.1. Decentralized records are filed by and are the responsibility of the owning work center.

15.2.2.2.1.2. Historical "pulled" 781 series forms will be filed by and remain the responsibility of PS&D while contained in the jacket file. **(T-1). Note:** The accuracy of maintenance document entries is a basic responsibility of the initiator and supervisors.

15.2.2.2.1.2.1. A pulled set of AFTO Form 781-series aircraft forms is defined as the documents/forms that were closed out and removed "pulled" from the aircraft forms binder. These inactive sets of forms provide the historical documentation of maintenance actions completed in support of a specific flying period. Pulled forms contain more detail than is typically store in the MIS and may be needed to support mishap investigations or other administrative maintenance action reviews and will be retained as part of the jacket file for the period of time specified in AFRIMS. **(T-1).**

15.2.2.2.2. PS&D will list all historical records, including those decentralized in their file plan or office of record. **(T-1).**

15.2.2.2.2.1. The DD Form 2861, *Cross-Reference,* will be used to cross-reference documents decentralized from PS&D to other sections and will be filed to cross reference AFTO Form 95 records that are maintained in the MIS. **(T-1).**

15.2.2.2.3. Wing-assigned aircraft jacket files may be maintained electronically, however, they must mirror the standardized master aircraft jacket file in organization and appearance. **(T-1)**.

15.2.2.2.3.1. Slight variations in composition are allowed between different MDS weapons systems located within the same wing.

15.2.2.3. MXG/CC may identify additional local items for inclusion in aircraft jacket files. Aircraft jacket files as a minimum will include:

15.2.2.3.1. Packages for one complete inspection cycle. **(T-1).** Units may download paperless inspections to automated storage media from MIS for filing in aircraft jacket files.

15.2.2.3.2. Last FCF documentation (e.g. FCF certification letter/FCF checklist). **(T-1).**

15.2.2.3.3. Last depot package. **(T-1).**

15.2.2.3.4. Transfer packages. **(T-1).**

15.2.2.3.5. Applicable weapon system -6 TO AFTO Form 95s. **(T-1).**

15.2.2.3.6. W&B records. **(T-1).**

15.2.2.3.7. Engine Records. **(T-1).**

15.2.2.3.8. Document review records/checklists. **(T-1).**

15.2.2.3.9. NDI records. **(T-1).**

15.2.2.3.10. AF Form 2411, *Inspection Document* (or equivalent). **(T-1).**

15.2.2.3.11. Annual aircraft jacket file review checklist. **(T-1).**

15.2.2.3.12. Authorized TO variances. **(T-1).**

15.2.2.3.13. Requests for assistance meeting the requirements for retention as historical records IAW TO 00-25-107, *Maintenance Assistance*, or equivalent/like MDS specific requirements for retention of documents as historical records. **(T-1). Note:** Contact the Lead Command as identified in AFPD 10-9 for guidance for meeting retention as historical records requirements outside the scope of TO 00-25-107.

15.2.2.3.14. Pulled AFTO Form 781-series aircraft forms. **(T-1).**

15.2.2.3.14.1. Units using fully automated forms will maintain the last 7 copies of the pulled aircraft forms and destroy the earliest record when the 8th report is received IAW AFRIMS. **(T-1).**

15.2.2.3.14.2. Units not required to use a MIS will use aircraft forms and maintain the current and last 3 months' worth of pulled aircraft forms. **(T-1).**

15.2.2.3.14.3. Pulled 781 forms will be filed in the aircraft jacket file in order by sets identified by the "From and To" date at the top of each 781-series form (see TO 00-20-1). **(T-1).**

15.2.2.3.14.4. Sets of forms may or may not include an AFTO Form 781J/K. AFTO Forms 781J/K will be included in the set of forms they were pulled with and retained for the same period of time. **(T-1).**

15.2.2.3.14.5. When PS&D discovers the AFTO Form 781-series missing during filing in the aircraft jacket file, a missing-forms letter will be sent to the appropriate Operations Officer/MX SUPT of the maintenance unit responsible for pulling the forms with a 5 duty-day suspense. **(T-2).**

15.2.2.3.14.5.1. If a response is not returned within 5 duty days, notify the applicable maintenance unit supervision. **(T-2).**

15.2.2.3.14.5.2. If the forms cannot be located, file the missing forms letter, endorsed by the Operations Officer/MX SUPT in the aircraft jacket file in place of the missing forms. **(T-2).** See TO 00-20-1 for missing form procedures and AFMAN 33-363 for records management and disposition instructions.

15.2.2.4. Annual jacket file review. Review aircraft jacket files annually using a locally-developed PS&D checklist. **(T-1).**

15.2.2.4.1. The last completed checklist will be kept on file in each aircraft jacket file. **(T-1).**

15.2.3. Aircraft Document Reviews (ADR). ADRs validate and correct any errors on airframe and engine operating times and cycles, TCTO documentation, TCI component operating times, time remaining to the next inspection, backordered supply document numbers and open deferred discrepancies. The aircraft AFTO Form 781-series for possessed aircraft are reviewed by aircraft crew chiefs, flightline maintenance functions, PS&D, Engine Management (EM) and LRS personnel to ensure the accuracy and validity of entries.

15.2.3.1. MAJCOMs will standardize the MIS/on-line products used to perform ADR on like-MDS weapons systems. **(T-1)**.

15.2.3.1. **(AFMC)** Test units can standardize MIS/on-line products as required for respective test aircraft management. **(T-2).**

15.2.3.1.1. Units using MDS-specific laptop forms (e.g., IMIS, ALIS, etc.) must develop procedures to ensure intent of ADRs is implemented. **(T-1)**.

15.2.3.2. An ADR will be accomplished at least every 60 days for units using the fully automated AFTO Form 781-series (AFTO Form 781A, AFTO Form 781J, *Aerospace Vehicle - Engine Flight Document*, AFTO Form 781K, *Aerospace Vehicle Inspection, Engine Data, Calendar Inspection, and Delayed Discrepancy Document*, and AFTO Form 95 generated by the MIS will constitute fully automated series). **(T-1)**.

15.2.3.2.1. Units without access to a MIS and authorized to use manual AFTO Form 781-series, must accomplish an ADR at least every 30 days. **(T-1)**.

15.2.3.2.1. **(AFMC)** Modular engine flying hours and manual cycles are verified with the EM section during document reviews. **(T-2).**

15.2.3.2.1.1. **(Added-AFMC)** If the aircraft has been away from home station and it has been more than 30 days since the last document review, check the documents within 7 days after return. **(T-2).**

15.2.3.2.2. ADRs will also be accomplished when an aircraft is transferred, deployed for more than 30 days, before and after scheduled inspections (PH or ISO), before and after storage and after fatigue tests. **(T-1)**.

15.2.3.2.3. For CANN aircraft, conduct ADRs at least every 30 days. **(T-2)**.

15.2.3.2.3. **(AFMC)** PS&D will conduct document reviews and validations at least every 14 days on CANN aircraft. The documents are also reviewed before and upon completion of other major programs such as Programmed Depot Maintenance (PDM), analytical condition inspections, and special tests. The AFTO Forms 781F, Aerospace Vehicle Flight Report and Maintenance Document, will also be reviewed for accuracy. **(T-2).**

15.2.3.3. Units will develop and publish an ADR checklist for use by home station and deployed units. **(T-1).**

15.2.3.3.1. This checklist will identify who initiates the ADR, reviewing agencies (to include the OAP lab), AFTO Form 781-series entry requirements, agency responsible for completing the AFTO Form 781-series/MIS entry, and outline any configuration verification requirements. **(T-1).**

15.2.3.4. ADR Procedures.

15.2.3.4. **(AFMC)** The AMXS will develop local procedures to review aircraft forms and MIS automated products as part of document reviews and/or validations. This process will include a review by the aircraft section/flight commander or NCOIC, then the AMU PS&D. This process will allow each level of supervision to review and maintain continuity of the process. **(T-2).**

15.2.3.4.1. PS&D will create a JST for ADRs on a red dash symbol and ensure it is loaded against all assigned aircraft. **(T-3)**.

15.2.3.4.2. ADRs will be scheduled and added to the appropriate maintenance plan. **(T-2)**. An ADR is a scheduled maintenance action and will be included in MSE computations. **(T-1)**.

15.2.3.4.3. PS&D and EM will validate applicable inspection, TCI, TCTO data for correct due dates/time or expiration dates, airframe and engine operating times (or flight times if applicable) and appropriate symbol entry IAW TO 00-20-1. **(T-2)**.

15.2.3.4.4. Units will coordinate with DMS/LRS to run a tail number inquiry to validate backorders and correct any discrepancies discovered. **(T-2)**.

15.2.3.4.5. Maintenance personnel will correct all discrepancies discovered during the ADR, prior to signing off the ADR JCN. **(T-1).**

15.2.3.4.5.1. If an ADR discrepancy cannot be corrected immediately, document the ADR discrepancy in the AFTO Form 781A with a JCN and applicable symbol and retain it in the AFTO Form 781-series forms until corrected and signed off. **(T-1).** Once all the uncorrected discrepancies are documented in the AFTO Forms 781-series the ADR can be signed off as complete.

15.2.4. Pre-Dock Meetings. PS&D personnel will:

15.2.4.1. Review planned aircraft inspection schedules and initiate an AF Form 2410, *Inspection/TCTO Planning Checklist*, or locally-developed product for each aircraft prior to the pre-inspection meeting. **(T-2)**.

15.2.4.1.1. MAJCOMs may determine if the pre/post dock requirement for inspections with less than a 200-hourly or 200-calendar day cycle is required. If it is determined that a pre/post dock meeting is not required, initiation of an AF Form 2410 is not necessary.

15.2.4.2. Host meetings and notify the appropriate Operations Officer/MX SUPT and flight supervisors of any recurring problems with attendance. **(T-2)**. Prior to the pre-dock meeting, PS&D will:

15.2.4.2.1. Determine pre-dock meeting attendees. **(T-2).**

15.2.4.2.1.1. The following personnel will attend the meeting as a minimum: PS&D, Pro Super, Inspection Dock NCOIC, aircraft crew chief, DMS, and EM representative. **(T-2).**

15.2.4.2.1.2. Include other agencies as required for performance of the work package.

15.2.4.2.2. Review and list all known aircraft and equipment TCTOs, TCIs, SIs and other major requirements to be accomplished during the inspection on the AF Form 2410, or locally-developed product. **(T-2).**

15.2.4.2.3. Identify requirements for kits or parts. **(T-2).**

15.2.4.2.4. List all DDs to be accomplished during the inspection on the AF Form 2410 keeping the original JCN. **(T-2)**.

15.2.4.2.5. Incorporate all requirements against the aircraft into a work package. **(T-2).**

15.2.4.2.6. List specialist tasks required in addition to normal inspection needs. **(T-2)**.

15.2.4.2.7. Develop a list of items identified as out-of-configuration for verification/correction during the inspection. **(T-2)**.

15.2.4.2.7.1. For non-configuration tracked aircraft, compile a list of missing serially-controlled items and coordinate/forward them to Inspection Dock NCOIC for verification. **(T-2)**.

15.2.4.3. At the pre-dock meeting, PS&D will brief representatives of the inspection schedule and scope, including TCTOs, TCIs, SIs, DDs and special requirements to be accomplished. **(T-2)**.

15.2.4.3.1. Agency representatives will inform PS&D of limiting factors that might affect the schedule. **(T-2)**.

15.2.4.3.2. PS&D will discuss aircraft configuration during all aircraft pre-dock meetings. **(T-2).**

15.2.4.3.3. Wings will use the AF Form 2410, or locally-developed product to record additional information discussed during the pre-dock meeting. **(T-2)**.

15.2.4.3.3.1. Maintain the original AF Form 2410, or locally-developed product on file in the aircraft jacket file for use as a guide when conducting the post-dock meeting. **(T-2).**

15.2.4.3.3.2. Provide a copy to the Inspection Dock NCOIC or equivalent for use during the post-dock meeting. **(T-2)**.

15.2.4.3.4. PS&D will provide a copy of the applicable “out of configuration” MIS products (e.g. IMDS screen 810 and 990; G081, screen 8110; serial number checklists) to Inspection Dock NCOIC in pre-dock package for verification/correction. **(T-2).**

15.2.4.3.4.1. The responsible work center will correct verified erroneous data and “out of configurations” in the MIS prior to post-dock. **(T-2).**

15.2.4.3.5. As a minimum, the following will also be discussed at the pre-dock meeting:

15.2.4.3.5.1. The type and number (if applicable) of the inspection to be performed. **(T-2).**

15.2.4.3.5.2. Validation of current aircraft and engine operating times. **(T-2).**

15.2.4.3.5.3. Parts in the TNB that require aircraft installation. **(T-2).**

15.2.4.3.5.4. Any known post inspection fuel cell work required. **(T-2).**

15.2.4.3.5.5. Date the aircraft is to be ready for the flightline to accept back. **(T-2).**

15.2.4.3.5.6. All known engines requiring replacement. **(T-2).**

15.2.4.3.5.7. Review of the aircraft forms open discrepancies including DDs and develop a joint plan to work as many discrepancies as feasible/applicable. **(T-2).**

15.2.4.3.5.8. Any inspections that will require maintenance personnel to stop work (e.g., NDI shop requirements) and when the maintenance dock needs to be clear of personnel to perform the inspections. **(T-2).**

15.2.4.3.5.9. All meeting attendees will sign the AF Form 2410. **(T-2).**

15.2.5. Post-Dock Meetings. Units will hold a post-dock meeting as soon as possible after the inspection but no later than before the functional check flight (FCF) or first flight. **(T-2).** PS&D will:

15.2.5.1. Lead a post-dock meeting for all inspections that required a pre-dock meeting. **(T-2)**. As a minimum, discuss and validate the following information at the post-dock meeting:

15.2.5.1.1. PS&D, Pro Super, Inspection Dock NCOIC, Aircraft Section representative/crew chief and other locally-determined attendees will discuss open discrepancies, review any significant inspection events and identify any problems that may adversely affect future scheduling. **(T-2)**.

15.2.5.1.2. The Inspection Dock NCOIC will provide the completed inspection work package to PS&D for filing until it is replaced by the next similar inspection work package. **(T-2)**. For example, an HPO 1 will be replaced by the next HPO1 and the HPO2 will be replaced with the next HPO2, etc.).

15.2.5.1.3. The Inspection Dock NCOIC will return the completed serial number verification sheet to the PS&D representative. **(T-2).**

15.2.5.1.4. The Inspection Dock NCOIC or designated representative and the aircraft crew chief or equivalent will perform an aircraft documents review. **(T-2).**

15.2.5.1.5. PS&D personnel will validate TCTOs, TCIs, and SIs scheduled during the inspection were completed and signed off in the MIS prior to the post dock meeting. **(T-2).**

15.2.5.1.5.1. Any action that was scheduled but not complied with will be annotated on the AF Form 2410 (used at the pre dock meeting) with the reason why it was not performed. **(T-2).**

15.2.5.1.5.2. Validate that any TCTO/TCI/SI not complied with will not ground the aircraft before releasing the aircraft back to flightline maintenance personnel. **(T-2).**

15.2.5.1.6. Verify all parts placed on order during the inspection but not received have valid document numbers. **(T-1).**

15.2.5.1.7. The Inspection Dock NCOIC and flightline maintenance supervisor (Pro Super or above) agree that all inspection requirements are completed and the flightline supervisor agrees to accept or "buy back" the aircraft. **(T-1).**

15.2.5.1.7.1. If maintenance actions previously identified for completion were not accomplished, establish agreements as to how these inspection requirements will be completed and documented on the AF Form 2410 or locally-developed product. **(T-1).**

15.2.5.1.8. PS&D will file the completed AF 2410, or locally-developed product, and completed/verified copies of the output products in the aircraft jacket file (PS&D retains completed package until the next scheduled PH/ISO inspection for that aircraft). **(T-1).** Electronic versions may be saved to digital media.

15.2.6. MIS (G081/IMDS) extended downtime (more than 48 hours).

15.2.6.1. If the MIS is not available for more than 48 hours, maintenance organizations will use the most current data contained in Maintenance Scheduling Application Tool (MSAT) for IMDS units and "Global Reach" system products for G081 units.

15.2.6.1.1. MSAT usage may continue in a digital format as long as updates can be made and retained.

15.2.6.2. If data cannot be retained by MSAT or Global Reach, the use of AFTO Form 349, *Maintenance Data Collection Record*, or electronic equivalent will be initiated for use in data collection/completion. **(T-2).**

15.2.6.2.1. The most current paper or electronic version of MIS products will be used once AFTO Form 349 or electronic equivalent usage is initiated. **(T-2).**

15.2.6.2.2. The AFTO Form 349 or electronic equivalent, will be used to update applicable MIS products once brought back online. **(T-2).**

15.2.6.2.3. The AFTO Form 349 or electronic equivalent, will be maintained until the data listed on it has been verified as captured/loaded in the MIS. **(T-2).**

15.2.6.2.4. After all changes have been verified in the MIS, destroy the AFTO Form 349 or electronic equivalent.

15.2.6.3. If an aircraft is temporarily moved to an operating location away from the unit of assignment and connectivity to the MIS is unavailable, units will send only those documents necessary to ensure safety of flight and current aircraft status. **(T-2)**.

15.2.7. Aerospace Vehicle and Equipment Mishap Response Procedures:

15.2.7.1. PS&D will coordinate with MMA or equivalent to ensure MIS lock out procedures to prevent further manipulation of data concerning the aerospace vehicle and/or equipment used during maintenance prior to the mishap event are completed IAW **Chapter 5** of this instruction. **(T-1).**

15.2.7.2. At a minimum, produce, consolidate and impound the following products: aircraft jacket file, aircraft AFTO Form 95s, TCTO history, debriefing records, pulled

AFTO Form 781-series forms, SI/TCI data, maintenance history, automated records check. **(T-1).** Include any additional significant historical data, and other decentralized records. **(T-2).**

15.2.7.3. EM will download and impound engine records from the applicable MIS and CEMS. **(T-1).**

15.2.8. **(Added-AFMC)** Status Reporting. Accomplish status reporting IAW AFI 21-103. Aircraft transfer Possession Purpose Code (PPC) "BT" may only be used within the following guidelines. These guidelines also apply for permanent aircraft transfers via PDM/modification or contract repair facility. **NOTE:** If the gaining organization utilizes the aircraft prior to the transfer inspection, use of "BT" status will not be authorized. **(T-2).**

15.2.8.1. **(Added-AFMC)** Intra-command (within AFMC) transferring aircraft may be possessed in this code no longer than 2 workdays for the losing organization (to prepare the aircraft) and no longer than 2 workdays for the gaining organization (to accept the aircraft). This code allows the organization time to prepare and complete pre-transfer inspections and actions in a non-possessed status. HQ AFMC/A4M must approve any extension. **(T-2).**

15.2.8.2. **(Added-AFMC)** Inter-command (into or out of AFMC) transferring aircraft may be possessed in this code no longer than 2 workdays for both accepting and preparing the aircraft. This code allows the organization time to prepare and complete pre-transfer inspections and actions in a non-possessed status. Any extension must be approved by HQ AFMC/A4M. **(T-2).**

15.2.8.3. **(Added-AFMC)** Aircraft going to programmed depot maintenance (PDM)/modification may be possessed in this code for no longer than 2 workdays to prepare the aircraft. Aircraft returning from PDM/modification, contract field team or depot field team maintenance units may use this PPC no longer than 2 workdays after return of the aircraft. PPC "BT" is not authorized for the sole purpose of accomplishing scheduled maintenance such as TCTO, time change items and special inspections before or after PDM/modification input. HQ AFMC/A4M must approve any extension. **(T-2).**

15.3. Configuration, TCTO, SI and TCI Management.

15.3.1. Responsibilities. MAJCOMs will establish PS&D requirements and responsibilities to support work centers who's AFSCs require scheduling functions for the equipment they maintain (e.g. Egress, Armament, and Aerospace Ground Equipment, Fuels) in a supplement to this instruction. **(T-1).**

15.3.1. **(AFMC)** Local procedures are authorized for compliance of any established AF policy unless specified in supplemental guidance for this paragraph. **(T-2).**

15.3.1.1. PS&D will provide work centers who's AFSCs require scheduling functions (e.g. Egress, Armament, and Aerospace Ground Equipment, Fuels) SME training support and oversight of scheduling products necessary to ensure configuration data integrity is maintained. **(T-1).** PS&D will:

15.3.1.2. Outline procedures for ordering hazardous materials for TCIs and TCTOs (e.g. batteries). **(T-2)**.

15.3.1.3. Units using a MIS will not delegate suspense validation processing for TCIs installed on aircraft to the performing work center unless the written procedures include the following: a list of work centers and specific technicians authorized to process suspenses; a list of the specific suspenses authorized to be cleared; and the method for notifying PS&D of the work completed (an audit trail) (IMDS units only). **(T-2)**.

15.3.1.4. Ensure EM processes all IMDS suspense validations for engines and engine components. **(T-2)**.

15.3.1.5. Use MSAT to audit SI, TCI, and TCTO MIS data weekly (IMDS units only). **(T-1)**.

15.3.1.6. Validate that data errors are corrected with appropriate personnel and updated in the MIS weekly. **(T-1).**

15.3.1.7. Submit MSAT trouble tickets at **https://midtier.gunter.af.mil/**, call the Field Assistance Branch at DSN 596-5771, or email **team4@gunter.af.mil** to correct program deficiencies. **(T-1)**.

15.3.2. Configuration Management. Configuration management provides unit managers the capability to determine the actual versus approved configuration of an aircraft or equipment. The intent of configuration management is to ensure selected serially-controlled and/or TCIs are properly loaded to the MIS database. Of major concern are accurate, approved part numbers, Quantity per Assembly (QPA) and Next Higher Assembly (NHA) items by WUC/LCN. PS&D has overall responsibility for the Equipment Configuration Management (ECM) or Aircraft Configuration Management (ACM) subsystem of the MIS and will provide assistance to maintenance personnel (IMDS units only). **(T-1).** The performing work center supervisor and PS&D conduct supervisory reviews of configuration change, TCTO, SI and TCI events using MIS on-line capabilities. **(T-1).** Individual work centers accomplishing TCIs are responsible for changing configuration information in MIS. Unless otherwise specified in local procedures, schedulers will process all removal, installation, TCI, SI and TCTO compliance updates for aircraft and equipment in the applicable MIS and EM processes engines and engine components in applicable engine information system. **(T-1)**.

15.3.2.1. Lead Commands will ensure procedures exist and are executed to provide system configuration tables which are updated, validated, and provided to field maintenance personnel as configurations change. **(T-1)**.

15.3.2.1.1. Items not accessed or visible during routine field-level maintenance shall be identified to Lead Command and AFSC managers for disposition. **(T-1)**.

15.3.2.2. Maintenance personnel discovering an item with a missing data plate, or one which does not have a serial number, will contact PS&D who will coordinate with the Lead Command system functional manager and/or AFSC item manager for disposition. **(T-1).**

15.3.2.3. For those aircraft that do not currently have an established configuration table, the Lead Command will develop procedures to identify, track and validate installed configuration managed items against the data in the MIS.

15.3.2.4. PS&D will coordinate the daily resolution of IMDS configuration management notices with the appropriate maintenance section utilizing the applicable MIS screen. **(T-1)**.

15.3.2.4.1. Uncorrected discrepancies will be briefed weekly at the daily production/scheduling meeting and forwarded to the appropriate maintenance supervision for corrective action. **(T-2)**.

15.3.2.5. When out of configuration items or missing serially-tracked items are discovered, establish a single DD for the "out-of-configuration" condition. **(T-2)**.

15.3.2.5.1. Additionally, add a MIS WCE for each WUC/LCN and part/serial number item requiring verification to the single DD. **(T-2).**

15.3.2.6. **(Added-AFMC)** If ACM responsibilities are delegated to other work centers, MOF PS&D will develop a formal agreement between AFMC and the delegated work center to assign responsibilities and guidelines for updating/correcting the IMDS database (e.g., check suspense validation records in IMDS and coordinate to ensure the appropriate work center processes their suspense's daily). **(T-2).**

15.3.2.6.1. **(Added-AFMC)** When assigning these responsibilities, consideration must be given to the agency performing removal and replacement actions for the configured item, (i.e., the egress shop has the responsibility for CAD/PAD items, while flightline avionics has the responsibility for tracked LRUs, etc.). **(T-2).**

15.3.2.6.2. **(Added-AFMC)** Additionally, this guidance establishes procedures to ensure configuration data is maintained during routine maintenance actions. **(T-2).**

15.3.2.6.3. **(Added-AFMC)** All TO 00-25-107, *Maintenance Assistance*, requests must be certified at the appropriate center level and coordinated through HQ AFMC/A4MM. **(T-2).**

15.3.3. TCTO Management. TCTOs are AF, MAJCOM/Lead Command or Numbered Air Force (NAF) directed modifications and inspections that provide units with instructions for doing a one-time change, modification, or inspection of equipment, (includes applicable Federal Aviation Administration (FAA) Air Worthiness Directives, original equipment manufacturer service bulletins and service instructions, after concurrence by Lead Command). Lead Command, NAF and local inspections are considered OTIs. Use the MIS to process Lead Command and NAF OTIs or modifications in the same manner as TCTOs with compliance periods, remove from service dates and rescission dates IAW TO 00-5-15. TCTOs, with the exception of immediate and urgent action, are considered scheduled maintenance and integrated into maintenance planning cycles. Consider concurrent accomplishment of TCTO work with other unscheduled or scheduled maintenance (e.g., PH, ISO, HSC, HPO). Manage TCTOs using the MIS, TO 00-5-15 and specific MAJCOM instructions.

15.3.3. **(AFMC)** Command-directed temporary (T-1 and T-2) modifications are temporary, and there is no corresponding change to approved weapon system technical data. The approved modification instruction is the authority for both modification and maintenance as long as the modification is installed. QA must maintain a copy of the command T-1 and T-2

modification instructions on file until they are formally rescinded. Follow additional AFMC guidance in AFMCI 21-126, *Temporary 2* (T2) *Modification of Aerospace Vehicles*. **(T-2).**

15.3.3.1. PS&D is responsible for managing all assigned weapon system TCTO programs and will monitor/provide oversight of all aircraft, weapon system, AGE and commodity TCTOs to ensure all compliance requirements are met. **(T-1).**

15.3.3.1. **(AFMC)** MOF PS&D or equivalent has the overall responsibility on depot level TCTO management. MOF PS&D will coordinate with System Program Managers, Lead Commands, and AFMC/A4MM. **(T-2).**

15.3.3.1.1. Munitions-related TCTOs will be managed by the munitions scheduler (if assigned) and engine-related TCTOs will be managed by EM schedulers. **(T-1).**

15.3.3.1.1.1. **(Added-AFMC)** AGE-related TCTOs will be managed by the AGE scheduler (if assigned). **(T-2).**

15.3.3.1.2. PMEL TCTOs will be managed by the owning agency with PS&D oversight. **(T-1).**

15.3.3.1.3. The parent technical training center manages and schedules all TCTOs for training equipment assigned to a training detachment or Mobile Training Team (MTT).

15.3.3.2. PS&D will review MIS products weekly to ensure proper documentation and management by owning and managing TCTO agencies. **(T-1).**

15.3.3.2.1. When an error is detected, PS&D will inform affected work centers and provide assistance to correct the discrepancy IAW TO 00-20-2. **(T-1).**

15.3.3.2.2. Units will complete an annual TCTO status review. **(T-1).**

15.3.3.2.2.1. Units will reconcile rescinded TCTOs using a REMIS Master TCTO report or equivalent annually (NLT 30 Sep) and before deleting/retiring TCTO records from the appropriate MIS. **(T-1)**.

15.3.3.2.2.2. If REMIS or equivalent access is not available, request a REMIS Master TCTO report or equivalent from the MAJCOM MDS WST/SPO identified in the subject TCTO. If TCTO status conflicts are identified, units will contact the applicable Lead Command to establish the process for resolving conflicts and facilitating status correction in REMIS or equivalent system. **(T-2)**.

15.3.3.2.2.3. Once all status errors are corrected, and reconciliation is complete and verified, IMDS units can delete the TCTO from the MIS. G081 automatically retires TCTOs 60 days after rescission, and all equipment shows as complete.

15.3.3.2.2.3.1. Document completion on AF Form 2411. **(T-1).**

15.3.3.2.3. PS&D will brief the MXG/CC (or equivalent) weekly on unaccomplished TCTOs that are within 60 days of grounding. **(T-1)**.

15.3.3.2.3.1. Significant problems or potential delays in TCTO accomplishment will be brought to the immediate attention of the MO OIC/SUPT and MXG/CC (or equivalent). **(T-2)**.

15.3.3.2.4. PS&D will chair a TCTO review meeting attended by all TCTO owning and managing agencies after the monthly supply TCTO reconciliation meeting. These meetings may be combined. **(T-1)**.

15.3.3.2.4.1. PS&D will discuss the supply reconciliation, supply status, scheduling factors, current TCTO status and anticipated problems for all active TCTOs. **(T-2)**.

15.3.3.2.4.2. PS&D will produce meeting minutes on the AF Form 2410 and distribute to all affected agencies. **(T-3).**

15.3.3.2.5. Depot-level TCTOs, excluding commodities, will be loaded and tracked in the MIS for auditing compliance and applicability. **(T-1).**

15.3.3.2.5.1. Depot-level engine TCTOs will be loaded in CEMS only. **(T-1).**

15.3.3.2.5.2. Units shall ensure dual reporting of completed depot-level TCTOs is prevented. **(T-1)**.

15.3.3.2.5.3. All field-level companion TCTOs for commodities must be loaded in the MIS. **(T-1).**

15.3.3.2.6. PS&D will monitor, track, and administer all applicable Computer Program Identification Numbers (CPINS) as commodity TCTOs for configuration management purposes. **(T-1)**.

15.3.3.2.6.1. PS&D will coordinate reprogramming of all passive/active aircraft internal and external electronic warfare systems and equipment with the wing EWO or equivalent before implementing any CPIN changes. **(T-1)**.

15.3.3.2.6.2. PS&D will coordinate with EM before issuing NSS/ETS CPINS. **(T-1).**

15.3.3.2.7. When TCTOs are directed for items without serial numbers, assign permanent serial numbers IAW TO 00-20-2 and AFI 23-101. **(T-1)**.

15.3.3.2.7.1. For serial numbers that cannot be created IAW TO 00-20-2 or AFI 23-101, use the associated equipment serial number the item is assigned to (for example, an aircraft chock serial number would be 0000AXXXC1).

15.3.3.2.8. Control and Transfer of TCTO Kits. Units will transfer aircraft or equipment, with any TCTOs still pending completion, with their applicable TCTO kits. **(T-1)**.

15.3.3.2.8.1. Retain engine TCTO kits for engines installed on aircraft at depot locations if the aircraft is returning to that unit for TCTO compliance. **(T-2).**

15.3.3.2.8.2. Transfer TCTO kits IAW AFI 23-101, TO 00-5-15 and TO 00-5-1. **(T-1).**

15.3.3.2.8.3. **(Added-AFMC)** Until proper disposition is determined, MOF PS&D will record and maintain TCTO kits received for aircraft in waivered status for applicable TCTOs. Consult with TCTO single managers and test program managers for proper disposition of kitted TCTOs IAW TO 00-5-15. If unable to attain disposition of received kitted TCTOs, contact AFMC/A4MM for guidance.

(T-2).

15.3.3.2.9. **(Added-AFMC)** MOF PS&D will manage the status reporting for command-directed assessments, modifications, and modification rescissions that require de-compliance work, as well as organizational, intermediate, and depot TCTOs. Command-directed modifications will be identified by a title, command data code, and rescission date. **(T-2).**

15.3.3.3. Specific TCTO Responsibilities.

15.3.3.3.1. QA personnel will:

15.3.3.3.1.1. Review all new and revised technical data and TCTO's for completeness, accuracy and applicability. **(T-1).** Inform applicable work centers of changes and up channel any problems discovered during this review.

15.3.3.3.1.2. Determine if the TCTO impacts W&B. **(T-1)**.

15.3.3.3.1.3. Distribute copies of TCTOs to the managing agency, performing work centers, and LRS. **(T-2)**.

15.3.3.3.1.4. Provide a supply cover letter requesting the number of items in supply (including WRM) affected by the TCTO. **(T-2).**

15.3.3.3.1.5. Report all deficiencies in technical instructions and kit-proofing to the appropriate TCTO manager IAW TOs 00-5-1 and 00-5-15. **(T-1).**

15.3.3.3.1.6. Attend TCTO planning meetings. **(T-2)**.

15.3.3.3.1.7. Provide technical support to performing work centers. **(T-3)**.

15.3.3.3.2. PS&D personnel will:

15.3.3.3.2.1. Determine the total number of end items applicable to the TCTO. **(T-1)**.

15.3.3.3.2.1.1. Items that are assigned with the same Mission Design Series, WUC, Part Number, etc., but are not applicable to the TCTO will be loaded in "22" status. **(T-1)**. This ensures accurate accountability that all equipment has been verified as being affected or not applicable to TCTO.

15.3.3.3.2.2. Chair a TCTO planning meeting with attendees from QA, owning and performing work centers and Flight Service Center (FSC)/LRS IAW AFMAN 23-122, Chapter 4. **(T-1).**

15.3.3.3.2.2.1. Record meeting minutes on AF Form 2410, or locally-developed product and provide an overall plan to implement the TCTO. **(T-2)**.

15.3.3.3.2.2.2. Minutes will include TCTO applicability by ID number (or applicable part number or serial number for commodity TCTOs), purpose of the inspection/modification and clearly identify and document the performing work centers, training requirements, scheduling parameters, remove from service date, a review of the TCTO procedures, form entries and supply requirements prior to scheduling the TCTO for completion. **(T-2)**.

15.3.3.3.2.2.3. All attendees sign the AF Form 2410, or locally developed

product, at the conclusion of the planning meeting indicating agreement with the conditions. **(T-1)**.

15.3.3.3.2.3. Establish and maintain a TCTO folder for each active TCTO. **(T-1)**.

15.3.3.3.2.3.1. TCTO folders will be standardized and include the basic TCTO and any supplements, completed AF Form 2410, or locally developed product, AF Form 2001**,** (if required), messages and the supply cover letter from QA. **(T-2)**.

15.3.3.3.2.3.2. Once the TCTO has reached its rescission date, print a MIS product showing the current status of equipment and place it in the TCTO folder. **(T-1)**.

15.3.3.3.2.3.2.1. Move the folder to an inactive TCTO file. **(T-1)**.

15.3.3.3.2.3.2.2. The TCTO managing agency will maintain the folder until the TCTO is rescinded in the applicable TO index. MIS TCTO records will be deleted (scheduled to retire for G081users) at that time. **(T-1)**.

15.3.3.3.2.3.3. TCTOs will not be deleted from the MIS *prior* to the rescission date. **(T-1)**.

15.3.3.3.2.3.4. Validate in REMIS that no additional requirements have been submitted or extensions applied. **(T-1)**.

15.3.3.3.2.4. If an initial TCTO load is not received from REMIS or equivalent, notify the single manager and/or equipment specialist IAW TO 00-5-15. **(T-1).**

15.3.3.3.2.5. Use the Integrated Logistics System-Supply (ILS-S) to order required kits/parts/tools IAW MIS manuals. **(T-1)**.

15.3.3.3.2.5.1. When ILS-S is not available, initiate three copies of the AF Form 2001 and forward two copies of the Form with a copy of the TCTO to the supply TCTO monitor. **(T-2).**

15.3.3.3.2.5.2. For locally obtained parts, prepare an AF Form 2001 listing each item by NSN, noun and quantity required. **(T-2).**

15.3.3.3.2.6. Assign ID numbers to kits as they are received. **(T-1).**

15.3.3.3.2.6.1. Use Part II of the AF Form 2001 to manage kit/part assignment and track individual end items, date issued, document numbers and the number of kits remaining. **(T-1).**

15.3.3.3.2.6.2. The LRS/Supply Flight Service Center TCTO monitor will ensure kits and/or parts are assembled prior to release. **(T-1)**.

15.3.3.3.2.7. Control and release TCTO kits from LRS. **(T-1).**

15.3.3.3.2.8. Notify appropriate MAJCOM, by message, when local managers anticipate a problem with TCTO compliance within prescribed time limits. **(T-1)**.

15.3.3.3.2.8.1. The message should include the TCTO number and narrative, total units affected, total units complete, kits on hand, kits on order, estimated delivery date, requisition number and a narrative of the problem.

15.3.3.3.2.8.2. The message will be endorsed by MXG/CC (or equivalent) prior to submission to MAJCOM. **(T-2).**

15.3.3.3.2.9. Report status of TCTOs that cannot be reported under "HOW MAL" codes 793, 797, 798, 801, 802, or 911 IAW the MIS, and 00-20 series TOs. **(T-1)**.

15.3.3.3.2.10. Schedule, track and monitor TCTO accomplishment. **(T-1)**.

15.3.3.3.2.10.1. Prepare a work order in the MIS for each affected end-item, including spares. Agencies owning installed on-equipment TCTOs will coordinate with PS&D prior to scheduling on-aircraft TCTOs. **(T-3)**.

15.3.3.3.2.11. Review suspense validation or equivalent inputs prior to processing TCTO suspenses and updating the MIS. **(T-1)**.

15.3.3.3.2.12. Update equipment/aircraft TCTO status as changes occur. **(T-1)**.

15.3.3.3.2.13. Annotate back-up MIS products as changes occur. **(T-1)**.

15.3.3.3.2.14. Ensure TCTOs are scheduled for completion prior to expiration or grounding date whichever comes first. **(T-1)**.

15.3.3.3.2.15. Schedule all workable TCTOs for accomplishment prior to permanent equipment transfer or storage input. **(T-2)**.

15.3.3.3.2.16. For TCTOs with compliance periods calculated in operating time (hours, cycles, starts, landings, or rounds) create a local JST and load the JST to the equipment; place the TCTO in a workable status once the operating time is reached. **(T-2).**

15.3.3.3.2.16.1. Document the JST number in the TCTO notes.

15.3.3.3.2.17. **(Added-AFMC)** The owning scheduling agencies will ensure all automated reports are verified and corrected IAW TO 00-20-2. **(T-2).**

15.3.3.3.2.18. **(Added-AFMC)** Each month, MOF PS&D, EM section, and TCTO managing agencies receive a copy of the TCTO reconciliation listing and must annotate this listing with TCTO requirements. **(T-2).**

15.3.3.3.2.19. **(Added-AFMC)** MOF PS&D monitors completion of commodity TCTOs and coordinates with performing work centers to ensure compliance within specified time limits. AMU PS&D establishes schedules for completion of installed commodity TCTOs with companion aircraft TCTOs. AMU PS&D schedules aircraft TCTOs or on-equipment munitions type TCTOs. The EM section schedules non-installed engine-related TCTOs and coordinates with AMU PS&D on installed engine related TCTOs. The munitions flight scheduler manages TCTOs for all air-launched surface attack guided missiles and associated support equipment, munitions, nuclear ordnance controlled material (NOCM) items, guidance kits, air intercept/aerial guided missiles and air intercept/aerial rockets. **(T-2).**

15.3.3.3.2.20. **(Added-AFMC)** TCTO Waiver Procedures. Commanders of AFMC organizations may request to temporarily waive compliance with routine,

immediate and urgent action TCTOs (Organizational, Intermediate and Depot Level) only when TCTOs are applicable to components of a system or subsystem that are deactivated or removed from the aircraft because of RDT&E missions or compliance of the TCTO would adversely affect the test mission. Procedures are outlined in AFI 21-101, *Aircraft and Equipment Maintenance Management*. **(T-2).**

15.3.3.3.2.20.1. **(Added-AFMC)** Owning organization will initiate the waiver request for Organizational, Intermediate, and Depot Level TCTOs. **(T-2).**

15.3.3.3.2.20.2. **(Added-AFMC)** The request will include the affected TCTO number, T-2 modification number and specifically why the modification interferes with accomplishing the TCTO. **(T-2).**

15.3.3.3.2.20.3. **(Added-AFMC)** The owning organization will contact the TCTO single manager to ensure that noncompliance will not result in a safety of flight condition, and to see if there are any safeguards that should be taken until the TCTO can be complied with. Include the single manager's name and phone number on the waiver request. **(T-2).**

15.3.3.3.2.20.4. **(Added-AFMC)** Owning organization will coordinate the waiver request with the MXG/CC/CL or equivalent. **(T-2).**

15.3.3.3.2.20.5. **(Added-AFMC)** Once the request has been signed, forward a copy of the signed request to the TCTO monitor, command aircraft manager, and the TCTO single manager. Wing TCTO monitor will retain a record copy. **(T-2).**

15.3.3.3.2.21. **(Added-AFMC)** Noncompliance will be recorded on the AFTO Form 95, Significant Historical Data, and appropriate Maintenance Information System, as applicable IAW TO 00-20-1 and TO 00-5-15. The entry will indicate the reason and estimated date of compliance. **(T-2).**

15.3.3.3.2.21.1. **(Added-AFMC)** Conduct an annual review and validate all waived TCTOs using the original MXG/CC/CL or equivalent approved date or last review date. **(T-2).**

15.3.3.3.2.21.2. **(Added-AFMC)** Send a list of waived TCTOs to HQ AFMC/A4MM no later than the first workday of January and July or when a significant change to a TCTO or waiver has occurred. **(T-2).**

15.3.4. SI and TCI Management:

15.3.4.1. Job Standard Master Listing (JML) Management.

15.3.4.1.1. PS&D will maintain (load, change, and delete) the JML for all inspections and time changes listed in the applicable aircraft/system -6 TO and commodity TOs. **(T-1)**.

15.3.4.1.1. **(AFMC)** Schedulers will monitor -6 and associated TOs to ensure time change/inspection frequencies align and support the maintenance concept of the weapon system. Scheduled maintenance requirements that do not align with the

established maintenance concept and affect aircraft availability will be identified and forwarded to the Product Improvement Working Group (PIWG) for consideration and/or resolution. **(T-2).**

15.3.4.2. Develop a matrix/chart depicting the total number of SIs and TCIs to be loaded in the MIS for each assigned aircraft/system. **(T-1)**.

15.3.4.2.1. Maintain JMLs for off-equipment items in the OWC. PS&D will provide written guidance and training for JML management of off-equipment JSTs when PS&D authorizes OWCs to maintain it. **(T-3)**.

15.3.4.2.2. For units using G081, Lead Command weapon system managers must maintain master inspection and time change requirements. **(T-2)**.

15.3.4.2.3. Once Master Job Standard Numbers (MJSNs) are fielded for a weapon system, local PS&D will review TO 00-20-2, *Maintenance Data Documentation* for MJSN procedures. **(T-1)**.

15.3.4.2.4. PS&D will load, change and delete JSTs in the MIS as soon as possible after receipt of any -6 TOs, or other TO, TCI or inspection change and will promptly notify all affected PS&D sections for action. **(T-1)**. PS&D will:

15.3.4.2.4.1. Load JSTs for all aircraft/systems -6 TOs special/scheduled inspections with frequencies greater than 30 days or 50 hours in the MIS. **(T-1)**.

15.3.4.2.4.1.1. Load Periodic Inspection (PE), PH, engine changes and other event type inspections (e.g., hard landing) as a JST in the MIS as they occur. **(T-1)**.

15.3.4.2.4.1.2. Provide training for maintaining JSTs as necessary. **(T-2)**

15.3.4.2.4.2. Perform a semi-annual review of the JML and all JSTs for accuracy and currency. **(T-1)**.

15.3.4.2.4.2.1. Review matrix/chart depicting the total number of SIs and TCI requirements to be loaded in the MIS for each assigned aircraft/system. **(T-1)**.

15.3.4.2.4.2.2. Reconcile TCI and SI JSTs with the aircraft/systems -6 TOs and applicable commodity TOs and document the semi-annual review on AF Form 2411. **(T-1)**.

15.3.4.2.4.2.3. Units may create JSTs in the MIS to automate required documentation of repetitive or complex tasks (e.g. engine change, tire change, phase inspection, flight control maintenance).

15.3.4.2.4.3. Monitor the inspection and time change subsystems in the MIS. **(T-1)**.

15.3.4.2.4.3.1. Perform a monthly review of all inspections, SIs and TCI JSTs for each assigned aircraft (Quarterly for (ARC). **(T-1)**.

15.3.4.2.4.3.2. Look for missing and/or excess inspections and TCIs loaded to the aircraft and ensure the accuracy of all due dates/times for TCIs and verify the Date of Manufacture (DOM) and Date of Installation (DOI). **(T-1).**

15.3.4.2.4.3.3. Document the review and ensure corrections are made to the MIS. **(T-2)**.

15.3.4.2.4.3.4. Maintain the report on file with corrective actions until the next review. **(T-2)**. The use of automated verification tools is encouraged provided MIS data is the source for verification.

15.3.4.3. PS&D will manage the assigned weapon systems TCI program. **(T-1)**. PS&D Personnel will:

15.3.4.3.1. Identify, monitor, forecast and schedule only those selected items specifically identified in TO 00-20-9, *Forecasting Replacement Requirements for Selected Calendar and Hourly Time Change Items;* applicable commodity TOs; the aircraft -6 TO, AFI 21-201, *Conventional Munitions Maintenance Management* or identified as Federal Supply Group (FSG 13) and Materiel Management Code AQ Items. **(T-1).**

15.3.4.3.2. Establish a JST for both the Date of Manufacture (DOM) and Date of Installation (DOI) for Cartridge-Actuated Devices (CAD), Propellant Actuated Devices (PAD), life sustaining, and other TCI items listed in the aircraft -6 TO and applicable commodity TOs. **(T-1)**.

15.3.4.3.2.1. Load only the DOI or DOM JST that comes due first, in the MIS against a specific part or serial number. **(T-1)**.

15.3.4.3.2.2. As a minimum, when the DOI and DOM frequencies are identical, maintain the JST for the DOM. **(T-1)**. (N/A for G081 units)

15.3.4.3.3. At least annually, meet with Egress and Aircrew Flight Equipment (AFE) activities to verify each aircraft's egress data. **(T-1)**.

15.3.4.3.3.1. Document the annual verification on the AF Form 2411 maintained in the aircraft jacket file. **(T-1)**.

15.3.4.3.3.2. Ensure component background information is provided by Egress to include a list of all components having multiple part numbers with a different service life. **(T-1)**.

15.3.4.3.3.3. Forecasting of CAD/PAD items for long-term CAD/PAD spare requirements will be accomplished by Ogden Air Logistics Complex (OO-ALC) through use of the Requirements Determination Module (RDM) to extract installation and due dates from REMIS. **(T-1).**

15.3.4.3.3.3.1. When CAD/PAD items or forecast requirements are not visible within the maintenance data system (e.g., CLS managed components), units will forecast for TCIs IAW TO 00-20-9 and AFI 21-201. **(T-1)**.

15.3.4.3.3.3.2. Validate and consolidate TCI forecasts for items listed in TO 00-20-9, commodity TOs, and aircraft specific -6 TOs. **(T-1)**.

15.3.4.3.3.3.3. Submit consolidated forecasts to the appropriate Lead Command representative with an info copy to munitions operations. **(T-2)**.

15.3.4.3.3.3.4. Forward any quarterly updated forecasts to munitions

operations. **(T-2)**.

15.3.4.3.4. Initiate, validate, and submit TCI extension requests to the Air Force Sustainment Center (AFSC) item manager (IM) with an info copy to munitions operations. **(T-1)**.

15.3.4.3.4.1. Ensure a copy of approved waivers are placed in the affected aircraft's forms and removed when no longer required. **(T-1).** 15.3.4.3.4.1. Maintain and monitor a suspense copy of the extension request and follow up prior to the grounding date of the TCI. **(T-1)**.

15.3.4.3.4.2. Refer to Technical Orders 00-20-1 and 00-20-9 for additional guidance on TCI extensions and maintain a copy of the AFSC/System Program Director (SPD) approved message until the item is replaced. **(T-1)**.

15.3.4.3.4.3. EM will generate engine TCI extension requests and coordinate through the Command Engine Manager to the appropriate Engine Program Office in AFLCMC. **(T-1)**.

15.3.4.3.5. Perform monthly reconciliation of all TCIs with LRS. **(T-2)**.

15.3.4.3.5.1. The reconciliation will consist of 100 percent validation of existing due-outs. **(T-2).**

15.3.4.3.5.2. Inform FSC of any "mark for" changes or items no longer required. **(T-2).**

15.3.4.3.6. Monitor and requisition TCI requirements based on projected equipment utilization. **(T-1)**.

15.3.4.3.6.1. Order parts using ILS-S, if available unless otherwise specified in -11, -14 and -6 TOs. **(T-1).**

15.3.4.3.6.2. TCIs are considered due for replacement at the HPO, PH, PE, HSC or ISO inspection nearest to the replacement date IAW TO 00-20-1. **(T-1)**. **Note:** life sustaining or CAD/PAD TCIs cannot exceed replacement interval in applicable -6 and commodity TOs without an approved extension/waiver from the SPO/ appropriate item manager.

15.3.4.3.6.3. Notify the Munitions Flight of the need to order munitions items IAW TO 00-20-9 and AFI 21-201. **(T-1)**.

15.3.4.3.6.3.1. Serviceable CAD/PAD TCIs components will not be turned into munitions operations until the remaining service life reaches 9-months or less. **(T-1).** Serviceable CAD/PAD TCIs components with less than 9-months service life remaining will not be reissued. **(T-1)**.

15.3.4.3.6.3.2. Maintenance plans must reflect replacement dates to coincide within the 9-month parameter. **(T-2)**.

15.3.4.3.6.3.3. **(Added-AFMC)** Agencies requesting changes or updates to the need date of any cartridge actuated device/propellant actuated device (CAD/PAD) item must coordinate with AMU PS&D, MOF PS&D, and MASO in sufficient time to preclude emergency issue requests. Agencies

requesting a change shall provide justification if need dates are changed by more than 30 days. No justification is necessary if changes are within 30 days, regardless of the quarter, or if the change is driven by OO-ALC. Issue requests for unforecasted or improperly forecasted items (except for replacement of inadvertently fired items or items found to be unserviceable) will be supported by a letter of justification signed by the MXG/CC/CL or designated representative. **(T-2).**

15.3.4.3.6.4. Order non-CAD/PAD or engine TCIs IAW AFI 23-101. **(T-1)**.

15.3.4.3.7. Schedule the time change in the MIS and incorporate it in the monthly/weekly/ quarterly maintenance schedule. **(T-2)**.

15.3.4.3.8. Review the data (DOM, DOI, LOT number, JST, and Due Date) entered by the performing work center and ensure the suspense validation is updated in the MIS when the time change is completed (N/A for G081). **(T-1).**

15.3.4.3.9. Coordinate management of respective TCIs with applicable maintenance and operation work centers. **(T-1)**.

15.3.4.3.10. Schedule drogue chute TCIs, except chute harnesses, for replacement during the drogue chute repack before the expiration of the component service or shelf life. **(T-2)**.

15.3.4.3.10.1. These components will not be over flown without an approved waiver from the appropriate item manager. **(T-2)**.

15.3.4.3.10.1.1. A copy of approved waivers must be maintained in the affected aircraft's forms and removed when no longer required. **(T-1).**

15.3.4.3.11. Prepare TCI forecasts IAW TO 00-20-9. **(T-1)**.

15.3.4.3.11. **(AFMC)** Prepare AFTO Form 223, Time Change Requirements Forecast for TO 00-20-9 and applicable -6 TO requirements. Forward AFTO Form 223 to the MOF PS&D section. MOF PS&D will review all AMU AFTO Form 223 and will forward a combined list of requirements to the appropriate supply agency. AMU PS&D is responsible for forecasting only those selected items specifically identified in TO 00-20-9, and the aircraft -6 TO. **(T-2).**

15.3.4.3.11.1. Provide squadron Operations Officers/MX SUPTs a forecast for non-munitions items for their supply section. **(T-2)**.

15.3.4.3.12. To facilitate quarterly requisitioning, P&S will submit the quarterly validated time-change AFTO Form 223, Spreadsheet, or IMDS/G081 generated forecast to the MASO between 45 and 60 calendar days (CONUS) or between 90 and 120 calendar days (OCONUS) before the next calendar year quarter IAW Table 7.3, OCONUS and CONUS Time Change Requisitioning Schedule IAW AFI 21-201.. **(T-2)**.

15.3.4.3.12.1. Validate current requirements against the annual forecast and make corrections based on aircraft utilization. **(T-2)**.

15.3.5. Major Maintenance Work Processing. PS&D will:

15.3.5.1. Coordinate on all TO 00-25-107 requests for AFI 21-103 reporting. **(T-2)**.

15.3.5.1.1. The work center discovering the discrepancy is responsible for drafting the TO 00-25-107 request and forwarding the request to QA for coordination and release.

15.3.5.1.2. PS&D will make the appropriate possession code changes in MIS when AFI 21-103 messages have been released. **(T-1)**.

15.3.5.1.3. Depot-level assistance provided by contractor support will be accomplished IAW contract specifications. **(T-1)**.

15.3.5.2. Develop procedures in conjunction with QA for routing all major maintenance requests to ensure all affected parties are informed. **(T-2)**.

15.3.5.3. Conduct an initial meeting upon arrival of a DFT to validate maintenance support requirements are in place. **(T-2)**.

15.3.5.3. **(AFMC)** Conduct an initial meeting upon arrival of a Depot Pre-Induction Inspection team (DPII). **(T-2)**.

15.3.5.3.1. The meeting will be documented on an AF Form 2410, or locally-developed product. **(T-2)**.

15.3.5.3.2. PS&D will initiate/accomplish all purpose possession identifier changes in the MIS . **(T-1)**.

15.3.5.3.3. Once work is completed, PS&D will ensure appropriate possession codes are changed and a completed copy of the work package is placed in the aircraft jacket file. **(T-1)**.

15.3.5.3.3.1. PS&D will document significant historical data on the appropriate AFTO Form 95 IAW 00-20 series TOs. **(T-1)**.

15.3.6. Transfer Inspections.

15.3.6.1. Units will perform gaining/losing transfer inspections IAW TO 00-20-1, MAJCOM guidance and this instruction. **(T-1)**.

15.3.6.1.1. In conjunction with QA, develop a local JST/work package for both gaining and losing aircraft and equipment transfer. **(T-2)**.

15.3.6.1.1.1. This JST/work package must meet all TO 00-20-1, 2J-1-18, *Preparation for Shipment and Storage of Gas Turbine Engines*, applicable aircraft -6 and -21 TOs, as well as AFI 21-103 and MAJCOM specific transfer requirements. **(T-2)**.

15.3.6.1.1.2. Include all historical records (e.g. NDI records, Egress records, W&B records, OAP records, strut records) and other applicable items. **(T-2).**

15.3.6.1.1.3. **(Added-AFMC)** MOF PS&D personnel will:

15.3.6.1.1.3.1. **(Added-AFMC)** Ensure a minimum of 6 months of engine operating time are remaining on time change items (TCI) such as modules/compressors/turbines/gearboxes and other major components at time of transfer or according to established MOA. **(T-2).**

15.3.6.1.1.3.2. **(Added-AFMC)** Ensure all engines have a comprehensive borescope inspection accomplished unless a borescope was accomplished within the last 10 aircraft flying hours. **(T-2).**

15.3.6.1.1.3.3. **(Added-AFMC)** Verify TCIs have a minimum of 60 days or 50 hours remaining at time of transfer. **(T-2).**

15.3.6.1.1.3.4. **(Added-AFMC)** Verify all SI have at least 25 percent of the usable time remaining at time of transfer. **(T-2).**

15.3.6.1.1.3.5. **(Added-AFMC)** Include two copies of the IMDS pilot reported discrepancy (PRD) report (NFS1SO screen 179) for the previous 90-day period in the aircraft records file. **(T-2).**

15.3.6.1.2. Losing PS&D ensures all actions are completed in the MIS prior to permanently transferring an aircraft to another unit. **(T-2)**.

15.3.6.1.3. Losing PS&D conducts a transfer pre-dock meeting one duty day prior to start of the aircraft transfer. **(T-2)**.

15.3.6.1.4. All items to be accomplished during the transfer inspection will be documented on an AF Form 2410, or locally-developed product, and scheduled in the MIS. **(T-2)**.

15.3.6.2. Losing PS&D will complete a total verification of all TCIs installed on the transferring aircraft. **(T-2)**.

15.3.6.2.1. Verify the correct computation of all due dates/hour/cycles based on DOM, DOI, installed times, or equivalent factors. **(T-2).**

15.3.6.2.2. For IMDS units only:

15.3.6.2.2.1. Ensure the IMDS-REMIS synchronization programs are processed and errors are corrected prior to transfer. **(T-2)**.

15.3.6.2.2.2. Ensure an up-to-date Transfer of Equipment (TRE) report and an AFTO Form 95 with current engine trend and performance data are placed in the aircraft jacket file. **(T-2)**.

15.3.6.2.2.3. Ensure a backup copy is maintained until receipt is verified by the gaining unit. **(T-2)**.

15.3.6.3. Losing PS&D will ensure an ADR is performed and conduct a transfer post dock meeting to ensure all required actions have been completed, all forms are current/accurate, and the MXG/CC (or equivalent) has certified each aircraft ready to transfer aircraft IAW TO 00-20-1, AFI 16-402 and AFI 21-103. **(T-1)**.

15.3.6.3.1. **(Added-AFMC)** MOF/AMU PS&D will generate two copies of the following products listed below and forward one copy of each to the gaining unit not later than (NLT) 30 days before the aircraft is scheduled to be transferred. Annotate changes in red on the remaining copy and include it with the aircraft record jacket file at time of transfer. **(T-2).**

15.3.6.3.1.1. **(Added-AFMC)** Automated records check (ARC). **(T-2).**

15.3.6.3.1.2. **(Added-AFMC)** Transfer of equipment (TRE) for aircraft and engine(s). **(T-2).**

15.3.6.3.1.3. **(Added-AFMC)** Significant history data (SHD) for aircraft and engine(s) CFT, W/B/T, and EFT. **(T-2).**

15.3.6.3.1.4. **(Added-AFMC)** AFTO Form 427, Aircraft Integral Fuel Tank Repair Historical Record, or AFTO Form 428, B-1B Aircraft Integral Fuel Tank Repair History Record. **(T-2).**

15.3.6.4. **(Added-AFMC)** During AGE Transfers. In addition to the inspection requirements in TO 00-20-1 and TO 35-1-4, QA may perform an assessment on each AGE item. The inspection includes a complete records check. When the capability exists, ensure all discrepancies are corrected prior to equipment transfer. Annotate in the equipment forms any discrepancy not corrected due to lack of parts. **(T-2).**

15.3.6.5. **(Added-AFMC)** Foreign country and/or sister service aircraft that will be flown/maintained by AFMC units will require a transfer inspection (reference T.O. 00-20-1 and 00-35D-54 Chapter 8). **(T-2).**

15.3.6.6. **(Added-AFMC)** Loaner aircraft from another USAF unit require a signed MOA from both the losing and the gaining MXG/CC or equivalent containing, at a minimum, the inspection requirements listed in AFI 21-101 para. 15.3.6.1.1 – 15.3.6.2.1. **(T-2).**

15.3.6.6.1. **(Added-AFMC)** Foreign country and/or sister service loaner aircraft require a signed MOA from both the losing and the gaining MXG/CC or equivalent containing, at a minimum, the inspection requirements listed in AFI 21-101 para. 15.3.6.1.1 – 15.3.6.2.1. or foreign country/sister service equivalent requirements. **(T-2).**

15.3.6.7. **(Added-AFMC)** In conjunction with MMA DBM, MOF PS&D personnel will process the aircraft transfer file from REMIS IAW AFCSM 21-576V2, Generic Configuration Status Accounting System (GCSAS), Software User Manual. NOTE: DBMs must process NFS6A0, screen 47 and 942, upon receipt of approved file from REMIS. This must be accomplished prior to processing IMDS-CDB program NFS3W0 (actual configuration). **(T-2).**

15.3.6.8. **(Added-AFMC)** MOF PS&D personnel will request approved configuration tables for B-1, B-2, F-15 and F-16 units and actual configuration tables for all other MDSs using IMDS screen 334 (IMDS-CDB units only). **(T-2).**

15.3.6.9. **(Added-AFMC)** Ensure maintenance performs a complete aircraft Dash 21 series TO equipment inventory IAW AFI 21-103. **(T-2).**

15.3.6.10. **(Added-AFMC)** Complete an egress system CAD/PAD inspection on newly assigned aircraft and upon those returning from depot/PDM where the egress system has been work on by depot personnel. Inspection will include 100% MIS (IMDS/G081) verification, and all visible and disturbed systems. **(T-2).**

15.3.6.11. **(Added-AFMC)** An ADR must be completed prior to first flight after inspection. AMU PS&D or equivalent will make appropriate entries in the MIS aircraft

automated history for all aircraft transfers detailing the date, current operating time, location, unit, and a general synopsis of worked performed or reason for transfer. **(T-2).**

15.3.7. Acceptance Inspections. Units perform acceptance inspections IAW TO 00-20-1, MAJCOM guidance and this instruction.

15.3.7. **(AFMC)** Aircraft acceptance inspections are optional for AFMC units. **(T-2).**

15.4. ENGINE MANAGEMENT (EM).

15.4. (AFMC)[DEV] Within the 412 MXG. The 412 MXS Propulsion Flight Business Unit will perform duties and responsibilities of Engine Management (EM) Section listed in AFI 21-101.

15.4.1. Engine Management (EM). EM manages unit efforts to maintain adequate engine support for mission requirements. EM monitors engine removals and replacements, component tracking, engine TCTOs and TCIs, engine records in the MIS and CEMS and performs engine manager duties.

15.4.1.1. The MXG/CC will:

15.4.1.1.1. Ensure EM is the wing focal point for both the Engine Trending and Diagnostics (ET&D) and Engine Health Management (EHM+) program when applicable. **(T-1)**.

15.4.1.1.2. Appoint in writing a qualified 2A6X1, minimum 7-skill level, (or civilian equivalent) technician to manage the EHM+ program IAW AFI 20-115. **(T-1)**.**Exception:** 2A6X1 or 2R1X1, minimum7-skill level for ARC.

15.4.1.2. EM will:

15.4.1.2.1. Manage the MIS and CEMS IAW AFI 21-101, AFI 20-115, AFI 23-101, TO 00-25-254-1, TO 00-25-254-2, *System Manual–Comprehensive Engine Management System for DSD: D042*, TO 00-20-5-1-3, *Instructions for Jet Engine Parts Tracking of OC-ALC/LPA Managed Engines*, AFCSM 21-558, *Comprehensive Engine Management System*, and applicable aircraft -6 TOs. **(T-1)**.

15.4.1.2.2. Coordinate with Propulsion Flight CC/Chief and organization leadership to support WRE requirements. **(T-2)**.

15.4.1.2.3. Ensure plans, schedules, and maintenance actions are documented on assigned engines. **(T-1)**.

15.4.1.2.4. Provide TCI information (cycles remaining, Engine Operating Time (EOT), etc.) on serially-controlled items to the Propulsion Flight and AMXS/AMU for engine and engine component CANN actions. **(T-1)**.

15.4.1.2.5. Ensure all engine SIs are loaded in MIS against the engine, not against the aircraft. **(T-1)**.

15.4.1.2.6. Ensure all engine/module inspections/TCIs tracked by EOT, Calculated Cycles (CCY), Total Accumulated Cycles (TAC), etc., are loaded/tracked in the MIS and CEMS databases. **(T-1)**.

15.4.1.2.7. Ensure serial numbers erroneously input into CEMS are followed by a Possessor Change (6D) Transaction Condition Code (TCC). **(T-1)**.

15.4.1.2.7. **(AFMC)** Ensure engine SIs are loaded in IMDS or G081 to ensure availability of information to all maintenance activities. Units are authorized to use a separate AFTO Form 781K for each engine to document and monitor SIs and TCTOs. **(T-2).**

15.4.1.2.7.1. After the TCC has successfully processed, notify the CEMS Program Management Office (PMO) help desk stipulating the serial number was erroneously input and should be deleted from CEMS, **CEMS.PMO.HELPDESK@us.af.mil.** **(T-1).**

15.4.1.2.7.2. A matrix by engine type should be developed to depict specific inspection and TCI quantities for each TMSM. Inspections tracked by flight hours must be loaded in the MIS. **(T-1).**

15.4.1.2.8. Comply with TCTO duties and responsibilities for engine items IAW this chapter. **(T-1).**

15.4.1.2.9. Manage TCTOs on all assigned engines and engine components, installed and uninstalled, as well as, manage TCTOs for support equipment to include engine trailers. **(T-1)**.

15.4.1.2.10. Accomplish quarterly TCTO status reviews and reconciliations IAW TO 00-25-254-1. **(T-1)**.

15.4.1.2.11. Maintain records on TCTO kits and status for all engines installed on aircraft sent to depot. **(T-2).**

15.4.1.2.12. Manage time changes on all engines and engine components. **(T-1)**.

15.4.1.2.12.1. EM will forecast parts requests and ensure requests are submitted to LRS up to 60 days (but not less than 10 days) prior to the need date of the scheduled time change or JEIM/CRF induction (see sections **15.2** and **15.3** of this instruction). **(T-1)**.

15.4.1.2.13. Reconcile all TCIs during the monthly TCI meeting with PS&D and LRS. **(T-2)**.

15.4.1.2.13. **(AFMC)** [DEV] Within the 412 MXG, Engine Management will provide data to PS&D for incorporation of engine-installed items for the monthly TCI meeting chaired by PS&D.

15.4.1.2.13.1. Reconciliation will consist of 100 percent validation of existing due-outs and a complete physical inventory of all issued TCIs. **(T-1)**.

15.4.1.2.13.2. Inform FSC of any “mark for” changes or items no longer required. **(T-2).**

15.4.1.2.14. Maintain and update historical documents for all assigned engines, modules, and major assemblies that are not managed by a Performance Based Logistics (PBL) or contractually thru a CLS contract. **(T-1)**.

15.4.1.2.14. **(AFMC)** Perform and document annual reviews of both paper (if applicable/maintained) and automated engine records IAW TO 00-20-1. (Paper history can be maintained in conjunction with automated history). **(T-2)** In addition to TO 00-20-1 requirements, the following historical entries in MIS are required for serially tracked engines, modules, components and major assemblies:

15.4.1.2.14.1. **(Added-AFMC)** Engine removal. Conduct a detailed records review to ensure utilization was properly recorded against the engine and sub-components. A removal narrative is required for all removal actions, except for HOW MAL codes 866, 879, and 800. Use the correct Automated History Event indicator when processing MIS transactions to ensure removal times are posted to automated AFTO IMT 95. Ensure utilization is updated in the MIS before processing the engine removal. **(T-2).**

15.4.1.2.14.2. **(Added-AFMC)** SIs, occurrences, and all borescope inspections. Include total time (EOT, TACs, CCYs, etc.), findings (no defect noted, discrepancies noted, etc.) and other pertinent information. **(T-2).**

15.4.1.2.14.3. **(Added-AFMC)** Engine test cell rejects IAW TO 00-25-254-1. Include total time (EOT, TACs, CCYs, etc.), the reason for reject, any specific test cell data and a summary of work performed at the test cell. **(T-2).**

15.4.1.2.14.4. **(Added-AFMC)** FSE or modifications. Include total time (EOT, TACs, CCYs, etc.), a brief summary of modifications to include part number and serial number of modified items, and other pertinent information. **(T-2).**

15.4.1.2.14.5. **(Added-AFMC)** Shipping engine, module (uninstalled), and major assemblies (uninstalled). Include the reason for shipment, the destination, and other pertinent information.

15.4.1.2.14.6. **(Added-AFMC)** Receiving/acceptance inspections, transfers and shipment of engines to designated repair facilities for engine, module (uninstalled), and major assemblies (uninstalled). Include received or departing from unit, discrepancies, and other pertinent information. **(T-2).**

15.4.1.2.14.7. **(Added-AFMC)** Data corrections. Include corrections to erroneous entries and other pertinent information. **(T-2).**

15.4.1.2.14.8. **(Added-AFMC)** Work completed on engine, module (uninstalled), and major assemblies (uninstalled). Include total time (EOT, TACs, CCYs, etc.) and a brief maintenance summary to include major assemblies replaced, test cell run, engine preservation, annual engine records reviews and other pertinent information (e.g., FOD). **(T-2).**

15.4.1.2.15. Check life-limited components forecast for additional component changes, TCTOs and SIs on all removed engines. **(T-1)**.

15.4.1.2.16. Coordinate with the propulsion Flight CC/Chief to develop a detailed 6-month engine and module TCI removal forecast and publish the forecast in the monthly flying and maintenance schedule. **(T-2)**.

15.4.1.2.16.1. This 6-month forecast must be accomplished monthly using CEMS product E373/MIS products and the projected unscheduled removals based on the

Unscheduled Removal Rate. **(T-2)**.

15.4.1.2.16.2. Removal rate formula (total number of unscheduled removals divided by flying hours, multiplied by 1000). Provide a copy of the forecast to maintenance leaders, PS&D, AMU and the MAJCOM engine manager. **(T-2)**.

15.4.1.2.17. Publish scheduled engine changes in the weekly and monthly maintenance schedule. **(T-2)**.

15.4.1.2.18. Verify engine total time versus aircraft total time, flying hours and manual cycles with PS&D during aircraft document reviews. **(T-1)**.

15.4.1.2.19. Maintain the portion of the JML for engine inspections and time changes. **(T-1)**.

15.4.1.2.19.1. Maintain (load, delete, and change) and conduct a semi-annual review of the JML for engine inspections and time changes listed in the aircraft -6 TO. **(T-2)**.

15.4.1.2.20. Establish a CEMS and MIS contingency plan for when either or both systems are down for more than 48 hours. **(T-1)**.

15.4.1.2.20.1. The plan will include procedures for retaining data in date-time order for input when MIS/CEMS operation resumes. **(T-1).** The plan will also address both home station and deployed procedures. **(T-1)**.

15.4.1.2.21. Develop local engine tracking procedures and documentation methods to be used at deployed locations. **(T-1)**.

15.4.1.2.21.1. Procedures must include the method of communication (message, e-mail or FAX), documentation and shipping responsibilities with SRAN addresses, and reporting procedures for CANNs and engine removals. **(T-1)**.

15.4.1.2.21.2. Procedures will ensure units take immediate action to correct all reporting errors between the base MIS and CEMS using the engine manager's data list. **(T-1)**.

15.4.1.2.22. Accomplish UEM duties IAW AFI 20-115, TOs 00-25-254-1/-2, and this instruction. **(T-1)**.

15.4.1.2.22.1. Act as liaison to the SRAN engine manager when part of a tenant unit is supported by the host base engine manager. **(T-1)**.

15.4.1.2.22.2. Provide the primary SRAN engine manager all quarterly reporting information required for submission to higher headquarters. **(T-2)**.

15.4.1.2.22.3. **(Added-AFMC)** Coordinate with the propulsion flight to ensure a copy of the latest work folder accompanies permanent and transferred engines. **(T-2).**

15.4.1.3. SRAN Engine Manager. The MXG/CC (or equivalent), will appoint a SRAN engine manager (if a host), or a UEM (if a tenant), in writing to accomplish the duties IAW 00-25-254 TOs and this instruction. **(T-1)**. The SRAN engine manager will:

15.4.1.3.1. Be selected from AFSC 2R1X1 or 2A6X1, minimum 7-skill level (or civilian equivalent). **(T-1)**.

15.4.1.3.1.1. The assistant will be a minimum 5-skill level from the same AFSCs or civilian equivalent. **(T-2).**

15.4.1.3.1.2. Both individuals will be aligned under EM. **(T-1)**.

15.4.1.3.2. Advise CMS or MXS/CC and MXG/CC (or equivalent), on administration of the base EM Program, engine maintenance concepts, principles, policies, procedures and techniques. **(T-1)**.

15.4.1.3.3. Act as the single point of contact between the unit, MAJCOM and MMA for EM questions. **(T-2)**.

15.4.1.3.4. Establish written procedures to support EM responsibilities IAW AFI 20-115 and this instruction. **(T-1)**. Unit procedures must:

15.4.1.3.4.1. Specify responsibilities of affected work centers for accurate and timely MIS/CEMS reporting of TCTO, SI, TCI, and other documentation requirements (e.g., borescope inspections, blade blending, CANN actions). **(T-1)**.

15.4.1.3.4.2. Ensure engine, module, and component data is reported to EM no later than close of business the first duty day after the event (e.g., part removal, installation, time update, TCTO status change). **(T-1)**.

15.4.1.3.4.3. Address tenant, transportation, maintenance, aircraft distribution, supply, and support personnel requirements and be coordinated with the MAJCOM EM prior to publication. **(T-2)**.

15.4.1.3.5. Request Initialization Decks (I-Deck) for engines and major modules (cores, High Pressure Turbine (HPT), Low Pressure Turbine (LPT), fans, etc.), to include embedded parts, part number, serial number, EOT, inspections, active TCTOs and TCIs, from CEMS Central Data Base (CDB) and ensure data in the MIS matches the CEMS CDB. **(T-1)**.

15.4.1.3.6. Ensure deployed engine monitors are identified and trained to perform duties while deployed. **(T-1)**.

15.4.1.3.6.1. Designated engine monitors will ensure all deployed spare engines have a copy (paper or electronic) of CEMS product E407, option 1 and 4, included in the deployment package. **(T-2)**.

15.4.1.3.6.2. **(Added-AFMC)** Maintain original copies of historical records at home station unless directed to transfer the engine to a gaining SRAN. **(T-2).**

15.4.1.3.6.3. **(Added-AFMC)** Perform engine manager duties for shipment and receipt of all assigned modules, related equipment, and shipping devices. **(T-2).**

15.4.1.3.7. Perform engine manager duties for shipment and receipt of all assigned engines. **(T-1)**.

15.4.1.3.8. Perform periodic quality audits to monitor accuracy and timeliness of reporting. **(T-1)**.

15.4.1.3.9. Perform annual EM training for all affected personnel (back shop, test cell, flightline, aircraft maintenance scheduler, etc.) who report engine status or are responsible for engine documentation and scheduling IAW AFCSM 21-558, Vol 2; TO 00-25-254-1/2 and TO 00-20-1. **(T-1).**

15.4.1.3.10. Maintain a jacket file of engine shipping documents and receipts. **(T-1)**.

15.4.1.3.10.1. Obtain MAJCOM EM approval prior to returning engines to CRF/depot. **(T-2)**.

15.4.1.3.11. Perform duties and requirements for engine shipments IAW AFPD 24-2, *Preparation and Movement of Air Force Materiel*, AFI 20-115, and TOs 00-85-20, *Engine Shipping Instructions*, 2J-1-18, and 2-1-18-WA-1, *Aircraft Engine Operating Limits and Factors.* **(T-1)**.

15.4.1.3.11.1. Engines requiring off-base shipment must be delivered to transportation within 24 hours of notification/decision to ship the engine and/or the engine change is complete. **(T-2)**. Notify MAJCOM EM and the owning SRAN EM if this time frame cannot be met.

15.4.1.3.12. The work folder will transfer with the engine. **(T-1).**

15.4.1.3.12.1. A copy will be maintained by the losing organization until verification of receipt by gaining unit. **(T-1).**

15.4.1.3.12.2. Gaining units will maintain the work folders and ship the documents with the engine to depot when appropriate. **(T-1).**

15.4.1.3.12.2.1. Gaining units will retrieve a copy of the previous EAWP from the Data Repository Center (DRC) or equivenent data in the applicable MIS upon receipt of the engine. **(T-1).**

15.4.1.3.12.2.2. EAWP users are required to send completed EAWP files to the DRC or MIS equivalent within 3 duty days of EAWP close-out. **(T-1).**

15.4.1.3.13. The SRAN EM will report the following in CEMS:

15.4.1.3.13.1. Receipt transactions for engines as of the date and time engines are delivered from the transportation hold area and accepted at the JEIM facility. **(T-1)**.

15.4.1.3.13.2. Shipment transactions with the “as of” date and time the engine(s) physically leave the base. **(T-1)**.

15.4.1.3.13.2.1. Once engine is received at gaining unit, ensure trailer and adapter are transferred in MIS. **(T-1)**.

15.4.1.3.13.3. All engine and tracked item removals, installations, and engine status changes. **(T-1)**.

15.4.1.3.13.4. All engine status transaction removals, installations, gains, Engine-Not-Mission Capable for Supply (ENMCS), work completed, test cell rejects, work stopped, work started, change in level of maintenance, awaiting disposition, intra-AF receipt and intra-AF shipments, transfer, and HOW MAL codes IAW AFI 20-115 and TO 00-25-254-series. **(T-1)**.

15.4.1.3.13.5. **(Added-AFMC)** Use the MAJCOM's command code the aircraft is assigned to when processing engine installation in CEMS. Refer to TO 00-25-254-1 for guidance. **(T-2).**

15.4.1.3.13.6. **(Added-AFMC)** Develop a memorandum of agreement (MOA) IAW AFI 25-201, Support Agreements Procedures, with SRANs at pre-positioned sites to manage engines, and manage tenant spare engines. **(T-2).**

15.4.1.3.14. Verify all update transactions (e.g., times, TCTO, part removal and installations) are input before reporting an engine removal or installation. **(T-2)**.

15.5. Maintenance and FHP Planning Cycle.

15.5.1. Responsibilities. MAJCOMs will develop procedures to ensure the intent of the maintenance and FHP planning cycle is met. The objective of the planning cycle is to execute the wing FHP consistent with operational requirements and maintenance capabilities. The maintenance and FHP planning cycle begins with the annual allocation of flying hours. Maintenance and operations schedulers propose an annual flying plan that balances both operational requirements and maintenance capabilities. Units should commit the fewest number of aircraft possible to meet programmed UTE rate standards and goals.

15.5.1.1. If applicable, MAJCOMs will develop scheduling procedures for units involved in Operational Test and Evaluation, Developmental Test and Evaluation, or Initial Operational Test and Evaluation to ensure the intent of the maintenance and FHP planning cycle is met. **(T-2)**.

15.5.1.1. **(AFMC)** Due to the non-standard nature of the test mission, typical daily, weekly, and monthly scheduling plans are not conducive to test mission requirements. Refer to Attachment 8 for any additional aircraft flying and maintenance procedures. **(T-2).**

15.5.1.2. AMC units tasked by the 618th Air and Space Operations Center (AOC) will adhere to Commander, Air Force Forces (COMAFFOR) Apportionment and Allocation Process (CAAP) policies and procedures. **(T-1).**

15.5.1.3. The annual plan, detailed by month, will evaluate the capability of maintenance to support the annual FHP. **(T-1)**.

15.5.1.4. When developing the annual plan, units will utilize the MDS specific MxCAP2 model, if available. **(T-1)**.

15.5.1.4. **(AFMC)** See deviation at paragraph 2.2.4.3.

15.5.1.5. Maintenance Plans and Schedules. PS&D builds, coordinates, publishes and distributes an integrated aircraft/system annual and quarterly plan & monthly and weekly schedule to support maintenance and operational requirements.

15.5.1.5.1. Plans will be developed, coordinated and consolidated jointly by the Operations OSS's Current Operations Flight Scheduling, and PS&D. **(T-1)**.

15.5.1.5.2. The printed wing plan will include an assessment of the wing's ability to execute the FHP and will be coordinated with the OG/CC and MXG/CC before being approved by the WG/CC. **(T-1)**.

15.5.1.5.3. Plans and schedules may be published via electronic means (e.g. web pages, SharePoint®, or e-mail) provided operations security is not compromised.

15.5.1.5.4. Normal daily operations and training schedules are For Official Use Only (FOUO) and should not be restricted to classified systems.

15.5.1.5.5. **(Added-AFMC)** The principal area of concern is the overall flying/ground test schedule. For mission accomplishment and improved efficiency, the following must be considered: maximize crew training on all flights, plan alternate missions when possible, ensure configurations and fuel loads are accurate, and establish launch and recovery patterns, and utilize historical attrition data. **(T-2).**

15.5.2. First Look Requirements. The First Look report is an internal wing document intended to highlight potential maintenance-capacity and operational-requirement disconnects in the upcoming year. Every year, NLT 15 March, PS&D will task MMA to provide PS&D with an airframe capabilities assessment. **(T-2).** This assessment will take into account personnel, facilities, and airfield infrastructure for each aircraft maintenance organization (N/A to AMC). **(T-2)**.

15.5.2.1. In wings operating aircraft supported by the MxCAP2 model, PS&D and MMA will coordinate with the AMXS Operations Officer/MX SUPT to establish local requirements, responsibilities and procedures for utilizing the MxCAP2 model to develop, sustain or reflow FHP/contingency requirements. **(T-1).**

15.5.2.1. **(AFMC)** See deviation at paragraph 2.2.4.3.

15.5.2.2. The assessment will be provided to PS&D NLT the last workday of March. **(T-2)**. **Note:** AMC units tasked by the 618 AOC will adhere to the COMAFFOR CAAP policies and procedures.

15.5.2.3. PS&D will provide copies of the capability assessment to each OS scheduling section and maintenance supervision. **(T-1)**.

15.5.2.3.1. The assessment will provide first look maintenance capability projections in a monthly format IAW MAJCOM guidance. **(T-2)**.

15.5.2.3.1. **(AFMC)** Refer to Attachment 8 of this supplement. **(T-2).**

15.5.2.3.2. The assessment will include operational requirements, an assessment of maintenance's ability to support the monthly requirement and an overall assessment of the unit's maintenance capability to meet the annual FHP (N/A for AMC units). **(T-2)**.

15.5.2.4. OS and maintenance responses are sent to PS&D and OSS's Current Operations Flight Scheduling and will be consolidated into a comprehensive package that includes a breakdown of the following items by OS:

15.5.2.4.1. Sortie UTE Rates (N/A to AMC units). **(T-2).** Compute UTE rates by month for the entire fiscal year (FY) for contracted (required) sorties and scheduled sorties using the formula: (number of sorties per month) divided by (number of Primary Aerospace Vehicle (Aircraft) Inventory (PAI) aircraft).

15.5.2.4.2. Sorties contracted/scheduled per day (N/A to AMC units). **(T-2).** Compute the number of sorties required per operations and maintenance (O&M) day

to meet the operational requirement using the following formula: (Number of Sorties Required) divided by (Number of O&M days in a Given Month). Sorties per day need to be computed by month for the entire FY.

15.5.2.4.3. Monthly scheduled sorties (N/A to AMC units). **(T-2).** Compute monthly scheduled sortie requirements using the following formula: (Number of Sorties or Hours Required) divided by (1 Minus the Attrition Factor). For example, (1,000 sorties or hours required) divided by (1 minus 0.15) equals 1,177 sorties or hours to schedule. Round any part to the next whole sortie or hour.

15.5.2.4.4. Inspection dock capability. **(T-2).**

15.5.2.4.4.1. Compute the number of PH/ISO inspections to be accomplished for each maintenance unit, by month, for the entire FY in order to meet operational requirements.

15.5.2.4.4.2. Compute dock capability using the following formula: (Number of O&M Days) divided by (Number of PH/ISO Days) multiplied by (Inspection Cycle) = Inspection Dock Capability. Inspection dock capability is provided at the wing level and provided by the squadron performing inspections.

15.5.2.5. Once compiled, first look packages will be presented to the OG and MXG/CCs before being presented to the WG/CC. **(T-1).**

15.5.2.5. **(AFMC)** Final assessments of maintenance capabilities to support the operations "first look" projections will be sent to MAJCOM A3 and A4. **(T-2).**

15.5.3. Annual Maintenance Planning Cycle.

15.5.3.1. MAJCOMs will develop procedures to ensure the objectives of the annual maintenance planning cycle are met.

15.5.3.1.1. At a minimum, MAJCOM procedures will produce an annual flying and maintenance plan that allocates sorties and hours into quarters, is approved by the WG/CC, and published prior to the beginning of the FY.

15.5.3.1.1. **(AFMC)** Annual Maintenance Planning Cycle. PS&D or equivalent will perform the long-range planning function and uses MIS products such as time distribution index (TDI), planning requirements (PRA), and workable TCTO report (WTR) to determine long-range maintenance requirements. PS&D will forecast and monitor requirements for the planned fiscal year. Refer to paragraph 15.5.1.1. for more guidance on test schedule planning. **(T-2).**

15.5.3.1.2. Due to the unpredictable nature of most future AMC mission requirements, units tasked by 618 AOC will prepare flying and maintenance plans with focus on supporting local operational training requirements based on historical data as well as all known future maintenance and operational requirements.

15.5.3.2. Flying Hour Allocation. Using the MAJCOM Baseline Allocation message, PS&D, the OS, and OSS's Operations Scheduling will provide affected work centers the following planning factors NLT 20 August each year, or within 10 working days after receipt of the flying hour allocations:

15.5.3.2.1. PS&D will provide updated capabilities which are computed by MMA and the PDM schedule. **(T-2)**.

15.5.3.2.2. OSS will provide the:

15.5.3.2.2.1. Required flying hours and estimated sorties and missions in monthly increments. **(T-2)**.

15.5.3.2.2.2. Flying days in each month. **(T-2)**.

15.5.3.2.2.3. Aircraft and aircrew alert requirements. **(T-2)**.

15.5.3.2.2.4. Known and projected TDYs and special mission requirements. **(T-2)**.

15.5.3.2.2.5. Configuration and munitions requirements. **(T-2).**

15.5.3.3. NLT 1 September, or within 10 working days after receipt of the planning factors, maintenance supervision will provide PS&D, SQ/CCs, and OSS's Operations Scheduling the following planning factors:

15.5.3.3.1. Estimated number of aircraft available by month, taking into consideration aircraft required for training. **(T-2)**.

15.5.3.3.2. A projected airframe capability statement. **(T-2)**.

15.5.3.3.3. Forecasted personnel capability, taking into consideration required training for maintenance personnel. **(T-2)**. (N/A to contract maintenance organizations).

15.5.3.3.4. The number of supportable sorties for each month. **(T-2)**.

15.5.3.3.5. An estimated monthly attrition factor (N/A to AMC units) provided by MMA. **(T-2)**.

15.5.3.3.5.1. This factor combines operations, weather and materiel (maintenance and supply) factors.

15.5.3.3.5.2. Maintenance is responsible for adding the attrition factor to operational requirements.

15.5.3.3.6. A recommended block scheduling pattern. **(T-2)**.

15.5.3.3.7. A statement of limitations. **(T-2)**.

15.5.3.4. **(Added-AFMC)** Maintenance requirements are included in long-range plans to project aircraft availability. Develop long-range maintenance plans in as much detail as possible. All maintenance requirements will be consolidated into a single long-range plan using AF Form 2401, Equipment Utilization and Maintenance Schedule, or computer generated form. As a minimum, the long-range plan shows the current month's and the next 2 month's known maintenance requirements. As a minimum, include the next due date for all calendar inspections, calendar time change items, TCTOs in workable status, PDM schedules, and at least the next 3 aircraft ISO/PE/Phase inspections. Other maintenance requirements such as engine changes, hourly requirements, acceptance/transfer inspections, training and cannibalization aircraft will be posted as they become known or planned. Add Alternate Mission Equipment (AME) inspections to

the long-range plan if the aircraft is scheduled to stay in that configuration to ensure the inspections are included in the monthly and weekly schedules. **(T-2).**

15.5.3.4.1. **(Added-AFMC)** Maintenance planning includes predictable maintenance factors based on historical data and other staff inputs (e.g., flow times for maintenance, turnaround times, and parts replacement schedules). **(T-2).**

15.5.3.4.2. **(Added-AFMC)** Include all known operational events (e.g., exercises, deployments, and development tests) during maintenance planning to determine the maintenance capability to meet operational needs. **(T-2).**

15.5.4. Quarterly Maintenance and FHP Planning. Quarterly planning starts with the operational requirement for flying hours, UTE rate, airframe availability, alert and other related scheduling data.

15.5.4.1. MAJCOMs will develop procedures to ensure the objectives of the Quarterly Planning cycle are met.

15.5.4.1.1. **(Added-AFMC)** The Test Wing scheduling office will use the following priority as a guide to determine which objectives to support if a lack of resources prevents meeting requirements such as: alert commitments, HHQ directed missions, training, and test and test support missions. Refer to 15.5.1.1. for test scheduling flexibility. **(T-2).**

15.5.4.2. The OS Operations Officer will provide these requirements to maintenance supervision and PS&D NLT 25 days before the beginning of the quarter. **(T-2)**.

15.5.4.3. Maintenance supervision and the OS Operations Officer will discuss these requirements at the scheduling meeting before the quarter being planned. **(T-2)**.

15.5.4.4. Schedulers will ensure quarterly plans are as detailed and accurate as possible. **(T-2)**.

15.5.4.4.1. Plans should include known special missions, PDM schedules, Higher Headquarters (HHQ) commitments and lateral command support requirements.

15.5.4.4.2. All maintenance requirements will be consolidated into a single, quarterly plan using AF Form 2401, *Equipment Utilization and Maintenance Schedule,* or computer generated form. **(T-1)**.

15.5.4.4.2.1. Specific locally-developed codes will be used to identify inspections, SI, TCI, and TCTO on the AF Form 2401. **(T-2)**.

15.5.4.4.3. As a minimum, the quarterly plan will show the next 3 months planned sorties and known maintenance requirements. **(T-1)**.

15.5.4.4.3.1. Known maintenance requirements include all maintenance events that impact aircraft availability and require management attention to ensure proper Time Distributed Index (TDI) flow.

15.5.4.4.3.2. Multiple maintenance events should be bundled for completion during a single aircraft downtime event to the greatest extent possible.

15.5.4.4.3.2.1. The goal is to reduce the number of times per month an aircraft is removed from the schedule for scheduled maintenance, thus

increasing aircraft availability.

15.5.4.4.3.2.2. Unit/Wing/MAJCOM requests to change the frequency of -6 TO requirements to increase bundling opportunities will be submitted through the applicable Lead Command for consideration and/or resolution. **(T-2)**.

15.5.4.4.3.3. To prevent operational utilization for that day(s) flying schedule, the quarterly plans will include, at a minimum, calendar inspections that hold an aircraft down, calendar TCIs, TCTOs in workable status, PDM schedules, training aircraft, cannibalization aircraft and aircraft ISO/PE/PH inspections. **(T-2)**.

15.5.4.4.3.4. Other maintenance requirements, such as engine changes, hourly requirements, acceptance/transfer inspections, training aircraft and cannibalization aircraft will be posted as they become known or planned. **(T-2)**.

15.5.4.4.3.5. Add AME inspections to the quarterly plan if the aircraft is scheduled to stay in that configuration to ensure the inspections are included in the monthly and weekly schedules. **(T-2)**.

15.5.4.4.4. Revise weekly schedule and monthly plan to meet the quarterly plan objectives while staying within the maintenance capability. **(T-2)**.

15.5.4.4.5. Use the following priority to determine which objectives to support if a lack of resources prevents meeting requirements:

15.5.4.4.5.1. Alert commitments. **(T-2).**

15.5.4.4.5.2. HHQ directed missions. **(T-2).**

15.5.4.4.5.3. Training. **(T-2).**

15.5.4.5. The OG/CC and MXG/CC (or equivalent) chair a quarterly meeting NLT 14 days before the next quarter.

15.5.4.5.1. OSS's Current Operations Flight Scheduling will compile, coordinate and brief the unit's quarterly plan and include operational requirements, support capability and any difficulties expected. **(T-2)**.

15.5.4.5.2. Once an approved quarterly plan is established, OSS's Current Operations Flight Scheduling will forward a copy to the OS, AMXS, OG/CC and MXG/CC along with all scheduling agencies. **(T-2)**.

15.5.4.5.3. The plan will be posted so it may be viewed by both maintenance and operations. **(T-2)**.

15.5.4.5.3.1. **(Added-AFMC)** The annual plan will show the number of projected flying hours by aircraft MDS. Flying hours will be subdivided into planned test/test support, test pilot school, and an all other category (i.e. proficiency, maintenance, ferry, etc.). **(T-2).**

15.5.5. Monthly Maintenance and FHP Planning.

15.5.5.1. MAJCOMs will develop procedures to ensure the objectives of the monthly planning cycle are met.

15.5.5.1. **(AFMC)** Refer to 15.5.1.1. for test scheduling flexibility. **(T-2).**

15.5.5.1.1. Include predictable maintenance factors based on historical data along with other inputs, such as flow times for maintenance, turnaround times and parts replacement schedules.

15.5.5.1.2. MAJCOMs will develop maintenance scheduling effectiveness guidance in their supplements to this AFI.

15.5.5.1.2. **(AFMC)** Refer to attachment 8 of this supplement. **(T-2).**

15.5.5.2. The monthly flying and maintenance plan schedule refines the quarterly plan by combining all aspects of aircraft utilization and will include:

15.5.5.2.1. A detailed monthly operations utilization calendar that specifies total aircraft flying hours, total sorties and missions, alert requirements, scheduled sortie or mission requirements and daily turn plans for each MDS by squadron, group or wing. **(T-2)**.

15.5.5.2.1.1. Do not assign attrition sorties to a specific aircrew/mission for the monthly planning process. **(T-2)**.

15.5.5.2.2. Monthly maintenance requirements (as required). **(T-2).**

15.5.5.2.3. Transient work schedule, if applicable. **(T-2)**.

15.5.5.2.4. Scheduled inspections, TCTOs, engine changes, time changes, DDs, contract or depot maintenance, washes, corrosion control, training aircraft and all other known maintenance requirements. **(T-2)**.

15.5.5.2.5. SE scheduled inspections, contract or depot maintenance, TCTOs, time changes, DDs, washes and corrosion control. **(T-2)**.

15.5.5.2.6. Avionics and other off-equipment maintenance scheduled inspections, TCTOs, assembly or repair operations. **(T-2)**.

15.5.5.2.7. Engine/module 6-month removal forecast and in-shop inspection requirements. **(T-2)**.

15.5.5.2.8. Munitions, photo, ECM and other mission loading or configuration requirements, including ammunition changes. **(T-2)**.

15.5.5.2.9. Total ordnance requirements for aircraft support. **(T-2)**.

15.5.5.2.10. Tanks, Racks, Adapters and Pylons (TRAP) and WRM scheduled inspections, TCTOs, assembly or repair operations. **(T-2)**.

15.5.5.2.11. Monthly training schedules, if not published separately. **(T-2)**.

15.5.5.2.12. Detailed support requirements (e.g. POL servicing, supply, food service, fire department, security, civil engineer, and airfield operations requirements). **(T-2).**

15.5.5.2.13. All known operational events (e.g., exercises, deployments, surges) to determine maintenance's capability to meet operational needs. **(T-2)**.

15.5.5.2.14. **(Added-AFMC)** Known operational needs and maintenance requirements are the basis for developing the monthly flying and maintenance plans.

QA scheduled inspections listed by type and quantities are included in the monthly flying and maintenance plan unless published separately by QA. **(T-2).**

15.5.5.2.15. **(Added-AFMC)** The monthly maintenance plan may be published separately or as an annex to the last weekly schedule of the preceding month. If published separately, distribute the plan NLT five calendar days before the beginning of the month. **(T-2).**

15.5.5.3. Monthly planning cycle requirements.

15.5.5.3.1. NLT the first weekly scheduling meeting of the month, the OS Operations Officer will provide maintenance supervision and PS&D with the estimated operational needs for the following month in as much detail as possible. **(T-2)**.

15.5.5.3.1.1. To optimize aircraft and munitions support, CMS, EMS, MUNS, MXS, AMXS, and OS will ensure the number of aircraft, and/or munitions configurations, are minimized and standardized. **(T-2)**.

15.5.5.3.1.2. Include known takeoff times, landing times and flying hour windows. **(T-2)**. **Note:** Landing times are not required if the unit has an established and constant average sortie duration.

15.5.5.3.2. The OS Operations Officer and maintenance supervision will review their applicable portion of the monthly maintenance plan and weekly schedule prior to submission to PS&D. **(T-2)**.

15.5.5.3.3. NLT the second weekly scheduling meeting of the month, AMXS maintenance supervision will notify the OS Operations Officer whether requirements can be met or limitations exist and collectively make necessary adjustments to the proposed schedule to satisfy maintenance and operational requirements. **(T-2).**

15.5.5.3.4. MXG/CC and OG/CC will formalize the next month's flying and maintenance plan prior to presenting it to the WG/CC for approval NLT the third scheduling meeting of the preceding month. **(T-2)**.

15.5.5.4. WG/CC's monthly scheduling meeting.

15.5.5.4.1. OS scheduling will outline past accomplishments, status of flying goals, problems encountered and detailed needs for the next month. **(T-2)**.

15.5.5.4.2. PS&D will outline projected maintenance capability and aircraft/equipment availability. **(T-2)**.

15.5.5.4.3. If conflicts arise between operational requirements and maintenance capability, present alternatives and limitations, the MXG/CC (or equivalent), OG/CC and WG/CC will decide what portion of the mission to support and to what degree. **(T-2)**.

15.5.5.5. When the WG/CC approves/signs the proposed monthly flying plan, PS&D will include it as a portion of the monthly flying and maintenance plan. **(T-2)**. Monthly plans may be published electronically provided local security requirements are met.

15.5.6. Weekly Scheduling. The weekly schedule is the final refinement to the monthly plan and results in the weekly flying and maintenance schedule.

15.5.6.1. MAJCOMs will develop procedures to ensure the objectives of the weekly scheduling process are met.

15.5.6.1. **(AFMC)** Refer to paragraph **15.5.1.1** for test scheduling supplemental instruction and paragraph **15.5.6.3.8** for weekly schedule changing guidance. **(T-2).**

15.5.6.1.1. PS&D will review matrix/chart depicting the total number of SI and TCI requirements to be loaded in the MIS for each assigned aircraft/system and verify against the MIS totals weekly. **(T-1)**. Overdue and uncorrected discrepancies will be briefed weekly during a daily production/scheduling meeting chaired by the MXG/CD (or equivalent). **(T-2)**.

15.5.6.2. NLT 2 workdays before the weekly scheduling meeting, the OS Operations Officer will provide maintenance supervision the following information (as required for missile units):

15.5.6.2.1. Aircraft takeoff and landing times. **(T-2).**

15.5.6.2.2. Configuration requirements. **(T-2).**

15.5.6.2.3. Munitions requirements. **(T-2).**

15.5.6.2.4. Fuel loads. **(T-2).**

15.5.6.2.5. Special or peculiar mission support requirements. **(T-2).**

15.5.6.2.6. Alert requirements. **(T-2).**

15.5.6.2.7. Exercise vulnerability. **(T-2).**

15.5.6.2.8. Deployments. **(T-2).**

15.5.6.2.9. Off-base sorties. **(T-2).**

15.5.6.2.10. On-equipment training requirements. **(T-2).**

15.5.6.2.11. Other special requirements. **(T-2).**

15.5.6.2.12. All mission unique requirements are annotated by OS Operations Officers on the weekly and daily flying schedule. **(T-2).**

15.5.6.2.13. **(Added-AFMC)** Maintenance Debrief will load all sorties considered flown as scheduled (e.g., Functional Check Flights (FCF)/Operational Check Flight (OCF), Ferry and cross country returns) in the MIS. **(T-2).**

15.5.6.2.14. **(Added-AFMC)** Finalize aircraft and equipment configurations at the daily maintenance scheduling meeting and document it on an AF Form 2407. To prevent excessive expenditures of work hours, configuration changes made after the daily maintenance scheduling meeting and prior to the first crew ready time the next day, require an AF Form 2407 coordinated through the required agencies. **(T-2).**

15.5.6.3. Home and deployed units will publish a weekly schedule. **(T-1)**. Include the following in the weekly flying and maintenance schedule:

15.5.6.3.1. Sortie sequence numbers, aircraft tail numbers (primary and spares), scheduled takeoff and landing times, aircraft or equipment scheduled use times,

configurations, fuel loads, and special equipment requirements. **(T-2)**. Units that fly a published and constant average sortie duration need not publish land times.

15.5.6.3.2. Spare aircraft requirements. **(T-2)**. Spare requirements are printed by day for each maintenance unit. Generate only the absolute minimum of spare aircraft.

15.5.6.3.2. **(AFMC)** Spare aircraft requirements are based on projected test mission needs. The following factors are used to determine spares and are not hard limits but guidelines, and as such, it is up to the AMU to actually schedule what it can support:

15.5.6.3.2.1. **(Added-AFMC)** The spare requirement may be adjusted to compensate for multiple configurations and test or school syllabus constraints. **(T-2).**

15.5.6.3.2.2. **(Added-AFMC)** Additional spares are authorized to support HHQ taskings and special missions (if required by the tasking). **(T-2).**

15.5.6.3.3. Scheduled maintenance actions, by aircraft and equipment serial number, to include inspections, TCTOs, time changes, contract and depot inputs, engine changes, washes or corrosion control, document reviews and DDs. **(T-2)**.

15.5.6.3.4. Required pre-inspection and other maintenance/scheduling meetings. **(T-2)**.

15.5.6.3.5. Wash rack use. **(T-2)**.

15.5.6.3.6. On-equipment training requirements. **(T-2)**.

15.5.6.3.7. AGE inspections or maintenance schedule by type and ID number. **(T-2)**.

15.5.6.3.8. MAJCOMs will develop standardized procedures to record and coordinate changes to the weekly schedule using an AF Form 2407. Include minimum approval levels for approving changes to the weekly schedule.

15.5.6.3.8. **(AFMC)** Changes to the Weekly Schedule. Pen-and-Ink. The pen-and-ink AF Form 2407, Weekly/Daily Flying Schedule Coordination is not intended to be used as a tool to extend the scheduling process by another day. Pen-and-ink changes made to next week's schedule are authorized, provided they are submitted to the PS&D by 1600 hours Friday or at the daily maintenance scheduling/production meeting, whichever occurs first (exception: NLT 2 hours after the last landing during printed wing night flying weeks). They are non-reportable and become part of the printed weekly flying schedule. An AF Form 2407 is required stating the changes are pen-and-ink. **NOTE: The intent of the pen-and-ink AF Form 2407 is to correct minor errors and not complete revisions of the previously Wing/CC approved schedule. (T-2).**

15.5.6.3.8.1. **(Added-AFMC)** AF Form 2407, Approval Authority. All AF Form 2407 changes that add aircraft, sorties, or increase the flying window require both OG and MXG commander (or designated group level representative) approval. MXG/CD or equivalent will approve changes to the final schedule and coordinated through affected AMXS Operations Officer/MX SUPT, AMU OIC/SUPT, MXS Operations Officer/MX SUPT, operations group representative, maintenance group, and wing staff agencies. (e.g., MOC, PS&D, Analysis, etc.)

using an AF Form 2407. MOC will coordinate higher headquarters directed taskings that require immediate execution. **(T-2).**

15.5.6.3.8.2. **(Added-AFMC)** AFMC units are authorized to use the Center Scheduling Enterprise (CSE) in recording and coordinating changes to the weekly schedule in place of AF Form 2407. Electronic coordination is acceptable provided receipt is acknowledged and the sender enters the name of the person notified, along with date/time of notification, and logged-in accordance with requirements on the AF Form 2407. **(T-2).**

15.5.6.3.8.3. **(Added-AFMC)** Interchanges (Tail Number Swaps). Interchanges should be used to prevent reconfigurations and unnecessary expenditures of work hours when the prime aircraft is not mission-capable by its scheduled takeoff time. Every effort is made to make the aircraft interchanges at the daily maintenance scheduling meeting the day prior to the aircraft scheduled flight and entered on the AF Form 2407. All interchanges made at the daily maintenance scheduling meeting are entered on an AF Form 2407 for audit and analysis purposes. **(T-2).**

15.5.6.3.8.4. **(Added-AFMC)** Configuration. Finalize aircraft and equipment configurations at the daily maintenance scheduling meeting and document it on an AF Form 2407. To prevent excessive expenditures of work hours, configuration changes made after the daily maintenance scheduling meeting and prior to the first crew ready time the next day, require an AF Form 2407 coordinated through the required agencies. **(T-2).**

15.5.6.3.8.5. **(Added-AFMC)** Units must effectively plan and execute operations, test and maintenance schedules. Each day, no later than 1600 local time, the OG/CC and MXG/CC/CL or their designated group representative will review the flying and maintenance schedule, agree on revisions, and coordinate with other agencies to confirm the next day's activities. Use AF Form 2407 or authorized automated system in coordinating the final schedule through the affected AMXS Operations Officer/MX SUPT, AMU OIC/SUPT, MXS Operations Officer/MX SUPT, operations group representative, maintenance group, and wing staff agencies. (i.e. MOC, PS&D, Analysis, etc.). **(T-2).**

15.5.6.3.8.5.1. **(Added-AFMC)** Each unit will establish local publications for making modifications to the weekly schedule. Refer to Attachment 8 for more instructions **(T-2).**

15.5.6.3.8.5.2. **(Added-AFMC)** The MXG/CC/CL, OG/CC, and/or director(s) will approve the proposed weekly flying schedule and forward to the WG/CC for final approval. Once the weekly schedule is reviewed and signed by the OG/CC, MXG/CC and WG/CC it becomes the final planning guide for both operations and maintenance and the basis for deviation reporting. The schedule will be followed as printed or as amended by coordinated changes. MOF PS&D will publish the final weekly flying schedule. **(T-2).**

15.5.6.3.8.5.3. **(Added-AFMC)** MOF PS&D will record maintenance scheduling deviations and forward the computations to MOF maintenance analysis weekly for publication in the monthly maintenance summary. **(T-2).**

15.5.6.3.9. Any change to the printed schedule will require an AF Form 2407 with the following exceptions: a change to the original printed takeoff or landing time of 15 minutes or less; a change of aircrew names, ranges, or airspace; or a change arising after the first crew ready time for the squadron's current day's scheduled flying window. **(T-2)**.

15.5.6.3.9. **(AFMC)** Any aircraft or sortie added to the flying schedule and any sortie duration changes that extends flying or landing beyond the flying hour window will require an AF Form 2407 with the following exceptions: Changes arising after the first crew ready time for the remainder of the flying day, such as tail number swaps. However, these changes will be coordinated by telephone or radio with all affected agencies. **(T-2).**

15.5.6.3.9.1. Changes made during the daily scheduling meeting also require an AF Form 2407. **(T-2)**.

15.5.6.3.9.2. The agency requesting the change initiates the AF Form 2407 and coordinates it IAW MAJCOM procedures. **(T-2)**.

15.5.6.3.9.2. **(AFMC)** Refer to para 15.5.6.3.8., under Changes to the Weekly Schedule. **(T-2).**

15.5.6.4. The OS Operations Officer and Maintenance Supervision will review and coordinate on the proposed weekly flying and maintenance schedule with OS, AMXS, MXS, CMS, and EMS prior to presenting it to the OG/CC and MXG/CC (or equivalent). **(T-1)**.

15.5.6.5. The approved schedule will be submitted to PS&D for compilation and a complete copy provided to the WG/CC. **(T-3)**.

15.5.6.6. At the weekly scheduling meeting wings will evaluate the past week's accomplishments (to include flying and MSE) and negotiate/approve refinements to the coming week's schedule. **(T-2)**.

15.5.6.6.1. The AF Form 2402, *Weekly Equipment Utilization and Maintenance Schedule*, or locally developed product, will be used to summarize the upcoming week's schedule. **(T-2).**

15.5.6.6.2. The AF Form 2403, *Weekly Aircraft Utilization/Maintenance Schedule*, or locally-developed equivalent product that contains all requirements and creates a finite depiction of aircraft utilization and maintenance. **(T-2)**.

15.5.6.7. Once the weekly schedule is reviewed and signed by the OG/CC, MXG/CC (or equivalent), and WG/CC it becomes the final planning guide for both operations and maintenance and the basis for deviation reporting. **(T-1)**.

15.5.6.7.1. The schedule will be followed as printed or as amended by coordinated changes. **(T-1)**.

15.5.6.7.2. Coordinated changes do not negate reporting deviations IAW MAJCOM guidance.

15.5.6.8. PS&D will distribute the schedule to each appropriate activity and work center NLT time determined in MAJCOM supplements to this AFI. **(T-2)**.

15.5.6.8. **(AFMC)** PS&D distributes the schedule to each appropriate activity and work center NLT 1200 Friday preceding the effective week. **(T-2).**

15.5.6.8.1. Weekly schedules may be published electronically provided local security requirements are met.

15.6. Contingency and Expeditionary Responsibilities.

15.6.1. Responsibilities of Contingency/Expeditionary (Cont/Exp) units (i.e., maintaining non-assigned aircraft). **Note:** This does not include AMC-established en route stations.

15.6.1.1. Most planning and scheduling is the responsibility of units with assigned aircraft and is provided through reachback support to home stations. Contingency units have fewer responsibilities as described below. Commanders of expeditionary units will ensure the intent of the guidance is met, when the dynamic nature of a Cont/Exp organization make strict adherence impossible. **(T-1)**.

15.6.1.2. Cont/Exp PS&D will conduct the following programs as outlined below:

15.6.1.2.1. ADR, pre- and post-dock meetings, acceptance inspections (from DFT/CFTs) and the major work program. **(T-1)**.

15.6.1.2.1.1. Cont/Exp PS&D will use the procedures developed by the aircraft-owning organizations. **(T-1)**.

15.6.1.2.1.2. If aircraft from multiple bases/units are supported, procedures do not have to be standardized.

15.6.1.3. Ensure discrepancies noted by the aircraft-owning PS&D for the ACM, TCI and SI programs are corrected. **(T-1)**. Cont/Exp PS&D will not develop programs independent of the aircraft owning organization. **(T-1)**.

15.6.1.4. Develop local coordination procedures for contingency aircraft affected by Immediate and Urgent Action (I/UA) TCTOs. **(T-1)**.

15.6.1.5. When notified by the aircraft-owning organization of an I/UA TCTO, the Cont/Exp PS&D will host a TCTO meeting. **(T-1)**.

15.6.1.5.1. The purpose of the meeting is to determine if the Cont/Exp unit has the maintenance capability to perform the TCTO.

15.6.1.5.1.1. Invite AMU, QA and affected work centers. Cont/Exp will notify the Expeditionary Maintenance Group Commander (EMXG/CC) of the unit's capability to perform the TCTO. **(T-1)**.

15.6.1.5.1.2. Develop and implement local tracking methodology to track TCTO completion. **(T-1)**.

15.6.1.5.1.3. Update MIS when the aircraft-owning Cont/Exp PS&D loads the requisite JST/JCNS. **(T-1)**.

15.6.1.5.1.4. If the Cont/Exp unit does not have the maintenance capability to perform the TCTO, Cont/Exp PS&D will notify the owning organization of that inability. **(T-1).**

15.6.1.5.2. Cont/Exp PS&D will only maintain aircraft I/UA TCTO files while active. **(T-1)**.

15.6.1.5.2.1. Once TCTOs are completed and loaded in MIS, records will be sent to home station for filing. **(T-1)**.

15.6.1.5.2.2. A TCTO meeting is not necessary for Routine Action aircraft TCTOs.

15.6.1.5.3. A full TCTO program IAW this chapter is required for AGE and other special equipment which is assigned to the contingency unit. **(T-1)**. This is intended to cover equipment that does not rotate with aviation packages.

15.6.1.5.4. Monthly and weekly maintenance planning. Cont/Exp PS&D will produce maintenance plans detailing all known maintenance requirements for the upcoming month/week. **(T-1)**.

15.6.1.5.4.1. This plan will detail by tail number, due date, JST and a description of the scheduled maintenance required for the time period. **(T-1).**

15.6.1.5.4.1.1. Use of the AF Form 2401 is not required.

15.6.1.5.4.1.2. The list will be published 2-days prior to the covered time period, coordinated through maintenance supervision, and approved by the EMXG/CC. **(T-3)**.

15.6.1.5.4.2. The weekly schedule will additionally identify those actions which will be deferred. **(T-1)**.

15.6.1.5.4.2.1. It will specifically identify if the action is deferred for mission requirements or due to a lack of capability. **(T-1)**.

15.6.1.5.4.2.2. Actions which are not identified as “pre-deferred” are expected to be accomplished during the upcoming week.

15.6.1.5.4.3. MSE will not be calculated for Cont/Exp units. **(T-2)**. It is anticipated that Cont/Exp units require a great deal of flexibility to meet mission requirements.

15.6.1.6. Cont/Exp organizations are not responsible for Aircraft Generation Planning, Transfer Inspections, Flying/Maintenance Planning Cycle, First Look, Annual/Quarterly Mx Planning, AVDO and 2R1 functional management responsibilities.

15.6.1.7. Cont/Exp PS&D will develop procedures with home station AVDOs to communicate and ensure AVDO responsibilities are performed. **(T-1)**.

15.7. (Added-AFMC) Depot Pre-Induction Inspection (DPII). DPIIs are designed to determine the aircraft condition lead-time before induction to depot maintenance. Depot teams use the aircraft condition knowledge to establish a supportable Bill of Work (BOW) process for specific repair actions, parts, tools, and equipment; i.e., generating what needs to be done, with what, and ensuring it will be there when planned. DPIIs are synchronized with the HSC, Phase,

or ISO prior to depot input on MDS directed by program office. DPII can be a physical inspection or a pre-induction analysis of records. The determination on who will accomplish the DPII (Depot Team, Contract Team, or Field 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. As part of the conference the DPII will be "scheduled" ~9 months prior to induction to Programmed Depot Maintenance (PDM). The MAJCOM/Unit Representative will declare their intent to accomplish "Organizationally" or request DFT/CFT support for the DPII. If none of these options are feasible at a particular time, any aircraft not receiving a DPII would still be inducted into PDM. **(T-2).**

15.7.1. **(Added-AFMC)** If a depot or contract team is accomplishing the PII, the PS&D Section Chief or designated representative will:

15.7.1.1. **(Added-AFMC)** Be provided a visit agenda by the DPII team lead. **(T-2).**

15.7.1.2. **(Added-AFMC)** Coordinate with PII team lead to present situational awareness in/out-brief to the MXG as required. **(T-2).**

15.7.1.3. **(Added-AFMC)** Coordinate/request tail number data pull queries from applicable MIS. **(T-2).**

15.7.1.4. **(Added-AFMC)** Act as liaison and refer DPII team to maintenance units for equipment support as required. **(T-2).**

15.7.1.5. **(Added-AFMC)** Maintain a file copy of the DPII report from DPII Team Lead. **(T-2).**

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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

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AF Form 2402, *Weekly Equipment Utilization and Maintenance Schedule*

AF Form 2403, *Weekly Aircraft Utilization/Maintenance Schedule*

AF Form 2407, *Weekly/Daily Flying Schedule Coordination*

AF Form 2408, *Generation Maintenance Plan*

AF Form 2409, *Generation Sequence Action Schedule*

AF Form 2410, *Inspection/TCTO Planning Checklist*

AF Form 2411, *Inspection Document*

AF Form 2419, *Routing and Review of Quality Control Reports*

AF Form 2426, *Training Request and Completion Notification*

AF Form 2430, *Specialist Dispatch Control Log*

AF Form 2434, *Munitions Configuration and Expenditure Document*

Adopted Forms

AF Form 55, *Employee Safety and Health Record*

AF Form 623, *Individual Training Record*

AF Form 797, *Job Qualification Standard Continuation*

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

AFTO Form 66, *TMDE Bar Codes (polyester Film)*

AFTO Form 82, *TCTO Verification Certificate*

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AFTO Form 244, *Industrial/Support Equipment Record*

AFTO Form 349, *Maintenance Data Collection Record*

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Abbreviations and Acronyms

ABDR—Aircraft Battle Damage Repair

AC—Aircraft Commander

ACC—Air Combat Command

ACFT—Aircraft

ACM—Aircraft Configuration Management

ACN—Authorization Change Notice

ACO—Administrative Contracting Officer

ACPINS—Automated Computer Program Identification Number System

ACR—Authorization Change Requests

ACS—Agile Combat Support

AD—Airworthiness Directives

ADCC—Assistant Dedicated Crew Chief

ADF—Automatic Direction Finder

ADPE—Automated Data Processing Equipment

ADR—Aircraft Document Review / Ammunition Disposition Report

ADS—Automated Data System

AEF—Aerospace Expeditionary Force

AETC—Air Education and Training Command

AF/A4L—Air Force Directorate of Logistics

AFCSM—Air Force Computer Systems Manual

AFE—Aircrew Flight Equipment

AFETS—Air Force Engineering and Technical Service

AFFARS—Air Force Federal Aquisition Regulation Supplement

AFI—Air Force Instruction

AFJMAN—Air Force Joint Manual

AFLCMC/EBH—Air Force Life Cycle Management Center, Munition Division

AFMAN—Air Force Manual

AFMC—Air Force Materiel Command

AFMETCAL—Air Force Metrology and Calibration Program

AFNCC—Air Force Network Control Center

AFORMS—Automated Forms

AFOSH—Air Force Occupational Safety and Health

AFOSHSTD—Air Force Occupational Safety and Health Standards

AFPAM—Air Force Pamphlet

AFPD—Air Force Policy Directive

AFPLS—Air Force Primary Standards Laboratory

AFRC—Air Force Reserve Command

AFREP—Air Force Repair and Enhancement Program

AFRIMS—Air Force Records Information Management System

AFSATCOM—Air Force Satellite Communications

AFSC—Air Force Specialty Code/Air Force Sustainment Center

AFSOC—Air Force Special Operations Command

AFIT—Air Force Institute of Technology

AFRL—Air Force Research Laboratory

AFTO—Air Force Technical Order

AGE—Aerospace Ground Equipment

AGETS—Automated Ground Engine Test Set

AGM—Air Surface Attack Guided Missile

AHRS—Attitude Heading Reference System

AIMS—Air Intercept Missile System

AIRCAT—Automated Inspection, Repair, Corrosion, and Aircraft Tracking

AIS—Aircraft Instrumentation System

ALC—Air Logistics Complex

ALIS—Autonomic Logistics Information System

AMA—Acceleration Monitor Assemblies

AMC—Air Mobility Command

AME—Alternate Mission Equipment

AMU—Aircraft Maintenance Unit

AMOG—Air Mobility Operations Group

AMQP—Aircraft Maintenance Qualification Program

AMS—Air Mobility Squadron

AMXS—Aircraft Maintenance Squadron

ANG—Air National Guard

AOC—Air and Space Operations Center

AOL—All Operator Letters

AOR—Area of Responsibility

A/P—Airframe/Powerplant

APU—Auxiliary Power Unit

AQL—Acceptable Quality Level

ARC—Air Reserve Component / Automated Records Check

ART—AEF Reporting Tool

ARRT—Automated Requirements Roadmap Tool

AS—Allowance Standard

ASC—Aeronautical Systems Center

ASIP—Aircraft Structural Integrity Program

ASIMIS—Aircraft Structural Integrity Management Information System

ASM—Aircraft Structural Maintenance

ATC—Air Traffic Control

ATD—Aircrew Training Devices

ATERS—Automatic Test Reporting System

ATO—Air Tasking Order

ATSO—Ability To Survive and Operate

AUR—Accomplishment Utilization Report / All-Up-Round

AURC—All-Up-Round Container

AVDO—Aerospace Vehicle Distribution Office

AVTR—Airborne Videotape Recorder

AWBS—Automated Weight and Balance System

AWM—Awaiting Maintenance

AWP—Awaiting Parts

BCS—Bench Check Serviceable

BE—Bioenvironmental Engineering

BOW—Bill of Work

BPO—Basic Post-Flight

BRA—Bomb Rack Assembly

BRU—Bomb Rack Unit

BSL—Basic Systems Listing

CA—Cannibalization Authority / Combat Support Coded

CAAP—COMAFFOR Apportionment and Allocation Process

CAC—Common Access Card

CA/CRL—Custodian Authorization/Custody Receipt Listing

CAD—Computer Aided Design

CAD/PAD—Cartridge/Propellant Activated Device

CALCM—Conventional Air Launched Cruise Missile

CANN—Cannibalization

CAMS—FM/G081—Core Automated Maintenance System-For Mobility

CAR—Corrective Action Request

CAS—Combat Ammunition System

CASS—Centralized Aircraft Support System

CAST—Combat Armament Support Team / Command Aircraft Systems Training

CAT I—Category I

CAT II—Category II

CATM—Captive Air Training Munition

CB—Customer Bulletins

CBM—Carriage Conventional Bomb Module

CBM+—Condition-Based Maintenance Plus

CBRNE—Chemical, Biological, Radiological, Nuclear and high-yield Explosive

CBT—Computer-Based Training

CBU—Cluster Bomb Unit

CC—Commander

CCD—Course Control Document

CC—Controlled Cryptographic Item/Customer Comment

CCMS—Compass Call Mission Simulator

CCY—Calculated Cycles

CD—Command Disable / Deputy Commander (e.g., MXG/CD)

CDA—Commercial Derivative Aircraft

CDB—Central Database

CDC—Career Development Course

CDDAR—Crash Damaged, or Disabled Aircraft Recovery

CE—Civil Engineer / Communications Electronics

CEMP—Comprehensive Emergency Management Plan

CEMS—Comprehensive Engine Management System

CETS—Contractor Engineering and Technical Services

CFACC—Combined Forces Air Component Commander

CFETP—Career Field Education and Training Plan

CFT—Conformal Fuel Tank / Contract Field Team

CGO—Continuing Government Organization

CGP—Central Ground Processors

CHPMSK—Centralized High Priority Mission Support Kit

CIP—Control Indicator Programmer

CITS—Central Integrated Test System

CJCSI—Chairman of The Joint Chiefs of Staff Instruction

CL—Checklist

CLS—Contract Logistics Support

CSLE—Customer Support Liaison Element

CM—Configuration Management

CMS—Calibration Measurement Summaries/Component Maintenance Squadron

CND—Can Not Duplicate

COMAFFOR—Commander, Air Force Forces

Cont/Exp—Contingency/Expeditionary

COMBS—Contractor Operated and Maintained Base Supply

COMSEC—Communications Security

CONUS—Continental United States

CONOPS—Concept of Operations

COR—Contracting Officers Representative

COTR—Contracting Officer Technical Representative

CO2—Carbon Dioxide

CPARS—Contractor Performance Assessment Rating System

CPINS—Computer Program Identification Numbering System

CPT—Cockpit Trainer

CRF—Centralized Repair Facilities

CRP—Centralized Rotable Pool

CRSP—Consumable Readiness Spares Package

CSA—Client Support Administrators

CSO—Concurrent Servicing Operation

CSRL—Conventional Stores Rotary Launcher

CSS—Concurrent Servicing Supervisor / Chief Servicing Supervisor

CTK—Composite Tool Kit

CTVS—Cockpit Television Sensor

CUT—Cross Utilization Training

CV—Vice Commander

CVR—Cockpit Voice Recorder

CW—Chemical Warfare / Complied With / Continuous Wave

CWDE—Chemical Warfare Defense Equipment

CWO—Combat Wing Organization

CWT—Customer Wait Time

DAFSC—Duty Air Force Specialty Code

DATM—Dummy Air Training Missiles

DBM—Database Manager

DCC—Dedicated Crew Chief

DCMA—Defense Contract Management Agency

DD—Delayed Discrepancy

DDR—Daily Demand Rate

DDTS—Data Display Training Set

DECC—Defense Enterprise Computer Center

DEROS—Date Eligible for Return from Overseas

DEV—Deviation

DFARS—Department of Defense Federal Acqusition Regulation Supplement

DFAS—Defense Finance & Accounting Service

DFT—Depot Field Team

DIAMONDS—Defense Integration and Management of Nuclear Data Services

DIFM—Due-in From Maintenance

DISA—Defense Information System Agency

DIREP—Difficulty Report

DIT—Data Integrity Team

DLA—Defense Logistics Agency

DLIR—Downward-Looking Infrared Radar

DLO—Dual Loading Operation

DMS—Decentralized Materiel Support

D04—Daily Document Register

D18—Priority Monitor, Report

D23—Repair Cycle Asset Management Listing

DOC—Designed Operational Capability

DOD—Department of Defense

DOI—Date of Installation

DOM—Date of Manufacture / Director of Maintenance

DOP—Dropped Object Prevention

DOR—Due-Out Release

DR—Deficiency Report

DRC—Data Repository Center

DLADS—Defense Logistics Agency Disposition Service

DRU—Direct Report Unit

DS—Defensive Systems

DSN—Defense Switching Network

DSS—Decentralized Supply Support

DSV—Detected Safety Violations

DVR—Document Validation Report

eTools—Electronic Tools

E&E—Electro-Environmental

E&HWG—Environmental and Health Working Group

EA—Electronic Attack

EAID—Equipment Authorization Inventory Data

EAWP—Engine Automated Work Package,

EC—Equipment Condition

ECM—Electronic Countermeasures

ECM—Equipment Configuration Management

ECO—Electronic Combat Officer

ECP—Entry Control Point

ECSS—Expeditionary Combat Support System

ED—Incapacitated

EDSC—Engineering Data Service Center

EHM+—Engine Health Management

EHR—Event History Recorder

EI—Evaluation and Inspection

EID—Event Identification Description / Equipment Identification Designator

EIP—Equipment Inoperative for Parts

ELT—Emergency Locator Transmitter

EM—Engine Management/Emergency Management

EMFR—Electrommagnetic Field Radiation

EMOC—Enhanced Maintenance Operations Center

EMS—Equipment Maintenance Squadron / Environmental Management System

EMXG/CC—Expeditionary Maintenance Group Commander

ENMCS—Engine Not Mission Capable for Supply

ES—S—Enterprise Solution-Supply

EOD—Explosive Ordnance Disposal

EOR—End of Runway

EOT—Engine Operating Time

EPA—Environmental Protection Agency

EPE—Evaluator Proficiency Evaluation

EPR—Evaluator Proficiency Report

ER—Exceptional Release

ERRC—Expendability, Recoverability, Reparability Code

ESOH—Environment Safety and Occupational Health

ESOHMS—Environment, Safety, and Occupational Health Management System

ESP—Expeditionary Site Plan

ESTA—En Route Support Team Advanced

ETS—Engineering Technical Service

ETTAS—Engine Test Trim Automated System

ETIC—Expected Time in Commission

ETIMS—Enhanced Technical Information Management System

ET&D—Engine Trending and Diagnostics

EVS—Electro-optical Viewing System

EW—Electronic Warfare

EWO—Emergency War Order/Electronic Warfare Officer

EWS—Electronic Warfare System

EX—Exercises/Contingencies

EXPRESS—Execution and Prioritization of Repair Support System

FAA—Federal Aviation Administration

FAD—Force Activity Designator

FAM—Functional Area Manager

FAR—Federal Acquisition Regulation

FARP—Forward Area Refueling Point

FC/FD—Functional Commander/Functional Director

FCC—Flying Crew Chief

FCF—Functional Check Flight

FCT—Flight Circuit Test

FDR—Flight Data Recorder

FEMS—Facility and Equipment Management System

FHP—Flying Hour Program

FIAR—Financial Improvement and Audit Readiness

FIT—Facility for Interoperability Testing

FK—Air Force Stock Record Account Number Prefix (munitions)

FLIR—Forward-Looking Infrared Radar

FO—Foreign Object

FOA—Field Operating Unit

FOD—Foreign Object Damage

FOL—Forward Operating Location

FOM—Facilitate Other Maintenance

FOUO—For Official Use Only

FSA—Functional Systems Administrators

FSAS—Fuel Savings Advisory System

FSC—Flight Service Center

FSG—Federal Supply Group

FSL—Full Systems Listing

FSR—Field Service Representatives

FTD—Field Training Detachment

FUD—File Update Mode

FV—Air Force Stock Record Account Number Prefix (munitions)

FW—Fighter Wing

FY—Fiscal Year

GACP—Global Ammunition Control Point

GBL—Government Bill of Lading

GBU—Guided Bomb Unit

GCSAS—Generic Configuration Status Accounting Subsystem

GEOLOC—Geographical Location

GFE—Government Furnished Equipment

GITA—Ground Instructional Trainer Aircraft

GLSC—Global Logistics Support Center

GMAW—Gas Metal Arc Welding

GOX—Gaseous Oxygen

GP—Group

GP/CC—Group Commander

GPC—Government Purchase Card

GPS—Global Positioning System / Groups

GPWS—Ground Proximity Warning System

GS—General Schedule

GSAS—Generation Sequence Action Schedule

GTAW—Gas Tungsten Arc Welding

GSU—Geographically Separated Units

HAF—Headquarters, US Air Force

HAZMAT—Hazardous Material

HC/D—Hazard Class Division

HF—High Frequency

HHQ—Higher Headquarters

HOW MAL—How Malfunction

HPO—Hourly Post-flight / High Performance Organization

HPT—High Pressure Turbine

HQ—Headquarters

HSC—Home Station Check

IA—Inspection Authorization

IAT—Individual Aircraft Tracking

IAW—In Accordance With

ID—Identification

IDEA—Innovation Development through Employee Awareness

I-Deck—Initialization Deck

IDS—Intrusion Detection Systems

IETM—Interactive Electronic Technical Manuals

IFCS—Instrument and Flight Control Systems

IFE—In-Flight Emergency

IFF—Identification Friend or Foe

IFR—In Flight Refueling

IG—Inspector General

IGE—Internal Government Estimates

ILM—Intermediate Level Maintenance

ILS—S—Integrated Logistics Systems-Supply

IM—Item Manager

IMDS—Integrated Maintenance Data System

IMDS—CDB—Integrated Maintenance Data System-Central Data Base

IMIS—Integrated Maintenance Information System

INS—Inertial Navigation System

INW—In Work

IP—Instructor Pilot

IPCOT—In-Place Consecutive Overseas Tour

IPI—In-Process Inspection

IPL—Immediately Prior to Launch

IPMS—Information Processing Management System

IRADS—Infrared Acquisitions/Designation System

IREP—Intermediate Repair Enhancement Program

IRSP—In-place Readiness Spares Packages

ISO—Isochronal Inspection

I/UA—Immediate and Urgent Action

ISU/DOR—Issue/Due-Out Release

JCALS—Joint Computer-Aided Acquisition and Logistics Support

JCN—Job Control Number

JDD—Job Data Documentation

JDRS—Joint Deficiency Reporting System

JEDMICS—Joint Engineering Data management Information and Control System

JEIM—Jet Engine Intermediate Maintenance

JETSC—Jet Engine Test Stand Calibrator

JFACC—Joint Forces Air Component Commander

JFS—Jet Fuel Starter

JML—Job Standard Master Listing

JPRA—Joint Personnel Recovery Agency

JQS—Job Qualification Standard

JST—Job Standard

JTIDS—Joint Tactical Information Distribution System

JUMPS—Joint Uniform Military Pay System

KTL—Key Task List

LAN—Local Area Network

LANTIRN—Low Altitude Navigation and Targeting Infrared for Night

LCAT—Logistics Compliance Assessment Team

LCL—Local Checklist

LCN—Logistics Control Number

L/ESS—Loads/Environment Spectra Survey

LIMFAC—Limiting Factor

LJG—Local Job Guides

LM—Limited-use Munition

LME—Locally Manufactured Equipment

LMR—Land Mobile Radio

LN2—Liquid Nitrogen

LO—Low Observable

LOLA—Live Ordnance Loading Area

LORAN—Long Range Aid to Navigation

LOX—Liquid Oxygen

LPS—Local Page Supplement

LPT—Loaded Pylon Test / Low Pressure Turbine

LRE—-Launch Recovery Element

LRS—Logistics Readiness Squadron

LRU—Line Replaceable Unit

LSC—Load Standardization Crew

LSP—Logistics Support Plan

LV—Leave

LWC—Local Work Cards

M30—Monthly Due-Out Validation Listing

MADAR—Malfunction Detection, Analysis, and Recording System

MAJCOM—Major Command

MALD—Miniature Air Launched Decoy

MANFOR—Manpower Force Packaging System

MASO—Munitions Accountable System Officer

MC—Mission Capable

MCD—Magnetic Chip Detectors

MCE—Mission Control Element

MDF—Mission Data File

MDS—Mission Design Series

MEL—Minimum Equipment Level

MMA—Maintenance Management Analysis

MEP—Mission Essential Personnel

MEO—Most Efficient Organization

MER—Multiple Ejection Rack

MESL—Minimum Essential Subsystems List

MFG—Munitions Family Group

MFM—MAJCOM Functional Manager

MFR—Memorandum for Record

MFT—Multi-Functional Team

MGN—Mission Generation Networks

MI—Management Inspection

MICAP—Mission Capable

MISCAP—Mission Capability

MIL—Master Inventory List

MILSPEC—Military Specification

MIS—Maintenance Information Systems

MJSN—Master Job Standard Numbers

MMCL—MAJCOM Mandatory Course List

MMA—Maintenance Management Analysis

MMHE—Munitions Materiel Handling Equipment

MOA—Memorandum of Agreement

MOC—Maintenance Operations Center

MOF—Maintenance Operations Flight

MO—Maintenance Operations

MOU—Memorandum of Understanding

MPPEH—Management of Materiel Potentially Presenting an Explosive Hazard

MPS—Military Personnel Section

MPRL—Minimum Required Proficiency Load

MQC—Maintenance Qualification Centers

MRSP—Mobility Readiness Spares Package

MRT—Maintenance Recovery Team

MRRT—Munitions Rapid Response Team

MSA—Munitions Storage Area

MSAT—Maintenance Scheduling Application Tool

MSE—Maintenance Scheduling Effectiveness

MSE—Munition Support Equipment

MSEP—Maintenance Standardization & Evaluation Program

MSG—Mission Support Group

MSIM—Mission Simulator

MSK—Mission Support Kit

MSPE—Maintenance Safety and Protection Equipment

MT—Maintenance Training

MTD—Maintenance Training Device

MTP—Master Training Plan

MTR—Military Travel Request

MTT—Mobile Training Team

MUNS—Munitions Squadron

MX—Maintenance

MxCAP2—Maintenance Capability and Capacity (model)

MXG—Maintenance Group

MXG/CC—Maintenance Group Commander

MXG/CD—Maintenance Group Deputy Commander

MXS—Maintenance Squadron

MX SUPT—Maintenance Superintendent

NAF—Numbered Air Force

NAS—National Aerospace Standard

NATO—North Atlantic Treaty Organization

NBCC—Nuclear, Biological, Chemical and Conventional

NCE—Nuclear Certified Equipment

NCOIC—Non-Commissioned Officer in Charge

NDI—Nondestructive Inspection

NFTBU—Nestable Fuel Tank Build-Up

NEW—Net Explosive Weight

NHA—Next Higher Assembly

NIE—Normally Installed Equipment

NLT—Not Later Than

NMC—Non Mission Capable

NMCS—Not Mission Capable - Supply

NPA—Non-Powered AGE

NRTS—Not Repairable This Station

NSN—National Stock Number

NSS—Noise Suppression System

NWRM—Nuclear Weapons-Related Materiel

O&M—Operations and Maintenance

OAP—Oil Analysis Program

OAS—Offensive Avionics System

OBOGS—On-Board Oxygen Generating Systems

OCF—Operational Check Flight

OCONUS—Outside Continental U.S.

OCR—Office of Collateral Responsibility

OEM—Original Equipment Manufacturer

OFP—Operations Flight Program

OG—Operations Group

OG/CC—Operations Group Commander

OI—Operating Instruction

OIC—Officer in Charge

OJT—On-the-Job Training

O/M—Organizational Maintenance

OO—ALC—Ogden Air Logistics Complex

OPLAN—Operational Plan

OPR—Office of Primary Responsibility

ORE—Operational Readiness Exercises

OSAT—Oil System Awareness Training

OSHA—Occupational Safety and Health Administration

OS—Operational Squadron

OSS—Operations Support Squadron

OSS&E—Operational Safety Suitability and Effectiveness

OTI—One Time Inspection

OTS—Over-The-Shoulder

OWC—Owning Work Center

PAA—Primary Aerospace Vehicle (Aircraft) Authorized

PACAF—Pacific Air Forces

PAFSC—Primary AFSC

PAI—Primary Aerospace Vehicle (Aircraft) Inventory

PAMS—PMEL Automated Management System

PAS—Protective Aircraft Shelter / Personnel Assignment System (Code)

PATEC—Portable Automatic Test Equipment Calibrator

PBL—Performance Based Logistics

PBR—Percent of Base Repair

PBSA—Performance-Based Service Acquisition

PCO—Procuring Contracting Officer

PCS—Permanent Change of Station

PDM—Programmed Depot Maintenance

PE—Personnel Evaluation/Periodic Inspection

PGM—Product Group Manager

PH—Phase

PIM—Product Improvement Manager

PIP—Product Improvement Program

PKI—Public Key Infrastructure

PM—Primary Munition/Program Manager

PMA—Portable Maintenance Aids

PMAP—Performance Management Assessment Program

PMC—Partially Mission Capable

PME—Precision Measurement Equipment

PMCB—Partially Mission Capable - Both (maintenance & supply)

PMCM—Partially Mission Capable - Maintenance

PMCS—Partially Mission Capable - Supply

PMEL—Precision Measurement Equipment Laboratory

PMI—Preventive Maintenance Inspection/ Program Management Inspection

PMO—Program Management Office

PMP—Program Maintenance Package

PO—Program Office

POC—Point of Contact

POL—Petroleum, Oil, and Lubricants

POMX—Point Of Maintenance

PPC—Possession Purpose Code

PPE—Personal Protective Equipment

PSC—Production Support Center

PR—Program and Resources

PRD—Pilot Reported Discrepancy

PRMS—Personnel Recovery Mission Software

PRP—Personnel Reliability Program

PRS—Performance Requirements Statement

PS&D—Plans, Scheduling, and Documentation

PWCS—Personal Wireless Communications Systems

PWS—Performance Work Statement

QA—Quality Assurance

QAPC—Quality Assurance Program Coordinators

QAR—Quality Assurance Representative

QASP—Quality Assurance Surveillance Plan

QC—Quality Control /Quality Check

QE—Quarterly Evaluation

QEC—Quick Engine Change

QP—Quality Program

QPA—Quantity Per Assembly

QPD—Qualified Product Database

QPL—Quality Products List

QRC—Quick Reaction Checklists

QRL—Quick Reference List

QIMSS—Quality Information Management Standard System

QVI—Quality Verification Inspections

RAM—Radar Absorbent Material

RAMPOD—Reliability, Availability, Maintainability for Pods

RAP—Rack, Adapter, Pylons

RASCAL—Rapid Assistance Support for Calibrations

RCM—Reliability Centered Maintenance

RCT—Repair Cycle Time

RDM—Requirements Determination Module

REA—Request for an Equitable Adjustment

RegAF—Regular Air Force

REMIS—Reliability and Maintainability Information System

RFA—Requests for Assistance

RIL—Routine Inspection List

RN—Repair Network

RNI—Repair Network Integration

RNM—Repair Network Manager

RPA—Remotely Piloted Aircraft

RSO—Remote Split Operations

RSP—Readiness Spares Package

RTC—Regional Training Center

RTHW—Radar Threat Warning

RTS—Radar Test Set

RTOK—Re-Test O.K.

RWR—Radar Warning Receiver

R&M—Reliability and Maintainability

R&R—Repair and Reclamation

SA—Support Agreement

SAE—Semi-Annual Evaluations

SARSAT—Search and Rescue Satellite Aided Tracking

SAS—Stability Augmentation Systems

SATCOM—Satellite Communication

SAV—Staff Assistance Visit

SB—Service Bulletins

SBSS—Standard Base Supply System

SCL—Standard Conventional Load

SCR—Special Certification Roster

SDAP—Special Duty Assignment Pay

SE—Support Equipment

SEI—Special Experience Identifier

SF—Standard Form

SGNSC—Self Generating Nitrogen Servicing Cart

SI—Special Inspection

SIPRNET—Secret Internet Protocol Router Network

SIT—System Interface Test

SM—Single Manager / Support Munitions

SMAW—Shielded Metal Arc Welding

SME—Subject Matter Expert

SMR—Source of Maintenance and Recoverability

SNCO—Senior Non-Commissioned Officer

SORTS—Status of Resources and Training System

SOT—Status of Training

SOW—Statement of Work

SPD—System Program Director

SPINS—Special Instructions

SPM—System Program Manager

SPO—System Program Office

SPRAM—Special Purpose Recoverables Authorized Maintenance

SQ—Squadron

SQ/CC—Squadron Commander

SR—Service Report / Strategic Radar

SRAN—Stock Record Account Number

SRD—Standard Reporting Designator

SRU—Shop Replaceable Unit

SS—non-Service Summary

SSEA—System Safety Engineering Analysis

STC—Supplemental Type Certificate

SUPT—Superintendent (Enlisted Duties)

SY—Sympathy

TAA—Training Aid Aircraft

TAC—Total Accumulated Cycles

TACAN—Tactical Air Navigation

TACC—Tanker/Airlift Control Center

TAL—Task Assignment List

TAR—Tactical / Theater Airborne Reconnaissance System

TAS—Tool Accountability System

TBA—Training Business Area

TC—Type Certified

TCAS—Traffic Collision Avoidance System

TCC—Transaction Condition Code

TCI—Time Change Item

TCN—Transportation Control Number

TCS—TCTO Status Report

TCTO—Time Compliance Technical Order

TD—Training Detachment/Temporary Duty

TDI—Tamper Detection Indicators/Time Distribution Index

TDV—Technical Data Violation

TDY—Temporary Duty

TEC—Type Event Code

TEMS—Turbine Engine Monitoring System

TER—Triple Ejection Rack

TF—Training Funded

TFI—Total Force Integration

TFCU—Transportable Field Calibration Unit

TI—Technical inspections

TIN—Turn In

TISL—Target Identification Set Laser

TK—Tool Kit

TMATS—Transmitter/Modulator Assembly Test Set

TMDE—Test Measurement and Diagnostic Equipment

TMF—Traffic Management Flight

TMS—Type Make Series

TNB—Tail Number Bin

TNO—Theater Nuclear Option

TO—Technical Order

TODA—Technical Order Distribution Account

TODO—Technical Order Distribution Office

TRAP—Tanks, Racks, Adapters, and Pylons

TRE—Transfer of Equipment

TRIC—Transaction Identification Code

TRN—Turnaround Transaction

TRSS—Training Support Squadron

TSC—Technical Support Center

TTML—Test/Training Munitions List

TTP—Tactics, Techniques & Procedures

UAV—Unmanned Aerial Vehicle

UCAV—Unmanned Combat Aerial Vehicle

UCI—Unit Compliance Inspection

UCML—Unit Committed Munitions List

UCR—Unsatisfactory Condition Report

UDM—Unit Deployment Manager

UEC—Unit Environmental Coordinator

UEM—Unit Engine Manager

UHF—Ultra High Frequency

UJC—Urgency Justification Code

UMD—Unit Manning Document

UND—Urgency of Need Designator

UPMR—Unit Personnel Management Roster

USAF—United States Air Force

USAFE—United States Air Forces in Europe

UTA—Unit Training Assembly

UTC—Unit Type Code

UTE—Utilization (rate)

UTM—Unit Training Manager

VHF—Very High Frequency

VTR—Video Tape Recorder

VTT—Video Tele-Training

W&B—Weight and Balance

W&T—Wheel and Tire

WAWF—Wide Area Work Flow System

WBT—Weapons Bay Tank

WCE—Work Center Event

WES—Work Event Separator

WG—Wing / Wage Grade

WG/CC—Wing Commander

WG/CV—Vice Wing Commander

WJQS—Work Center Job Qualification Standard

WLCMT—Weapons Load Crew Management Tool

WLCTP—Weapons Load Crew Training Program

WLT—Weapons Load Training

WMP—War Mobilization Plan

WRCS—Weapons Release Computer System

WRE—War Reserve Equipment / War Readiness Engine

WRM—War Reserve Materiel

WRMO—War Reserve Materiel Officer

WS—Weapons Standardization

WSM—Weapon System Manager

WST—Weapons Systems Team

WS3—Weapons Storage and Security System

WTQC—Weapons Task Qualification Crew

WTQM—Weapons Task Qualification Training Manager

WWID—Worldwide Identification (code for TAS)

WWM—Wing Weapons Manager

WX—Weather

WUC—Work Unit Code

XOCL—Logistics Readiness Division

Terms

Aircraft Impoundment—Isolation of an aircraft due to an unknown malfunction or condition making it unsafe for flight.

AIRCAT—is the Individual Aircraft Tracking Program (IATP) of record for the C-130 as mandated by the USAF Aircraft Structural Integrity Program (ASIP). This effort includes development and maintenance of an extensive Oracle database and a wide variety of both client/server and web-based applications to provide data entry, reporting, and analysis.

Aircraft Maintenance Qualification Program (AMQP)—Conducts training in an environment that is not in competition with sortie production. Ensures personnel arrive at their work center with the necessary skills to be immediately productive.

Aircrew Training Device (ATD)—Weapons systems simulator or designated training aircraft.

AF Portal Gadgets—Computer displays that provide the functional capability to track and update asset status.

Aircraft B-Status Possession Codes—Sample B-status codes (specified in AFI 21-103): BJ=crash/battle damage awaiting AFMC assist/decision; BK=command programmed maintenance; BL=extended transit maintenance; BN=crash damaged (unit repairable); BO=battle damage; BQ=major maintenance awaiting AFMC decision/action; BR= major maintenance awaiting parts; BT=aerospace vehicle transfer; BU=depot level maintenance; BW=weather/bird strike damage awaiting AFMC assist/decision; BX=weather/bird strike damage repairable by unit.

Aircraft D-Status Possession Codes—Sample D-status codes (specified in AFI 21-103): DJ=awaiting depot level maintenance work; DK=contract work; DL=depot delivery flight;

DM=undergoing depot level maintenance; DO=programmed depot maintenance; DR=post depot/contractor maintenance.

Air Reserve Component—The Air National Guard and Air Force Reserve together form the ARC.

Allowance Standard (AS)—Authorized document that identifies the amount and type of equipment for an organization.

Alternate Mission Equipment (AME)—Equipment identified to a higher end-item, not listed in the table of allowance. Normally, -21 equipment.

Awaiting Maintenance (AWM)—Designation for a deferred discrepancy on an aircraft awaiting maintenance.

Awaiting Parts (AWP)—Designation for a deferred discrepancy on an aircraft awaiting parts.

Bench Stocks—Stores of expendability, recoverability, reparability coded (ERRC) XB3 items kept on-hand in a work center to enhance maintenance productivity.

Cannibalization—Authorized removals of a specific assembly, subassembly, or part from one weapons system, system, support system, or equipment end-item for installation on another end-item to meet priority mission requirements with an obligation to replace the removed item.

Certified Load Crew Member—A load crew member trained and certified by position according to **Chapter 10** of this instruction.

Class I and Class II Aircraft—Classification categories used when calculating aircraft's weight and balance.

Code 1, Code 2, Code 3, Code 4, Code 5—Landing status codes used by aircrew to inform maintenance of their inbound aircraft's condition. A Code 1 aircraft has no additional discrepancies other than those it had when it last departed; a code 2 aircraft has minor discrepancies, but is capable of further mission assignments; a code 3 aircraft has major discrepancies in mission-essential equipment that may require repair or replacement prior to further mission tasking; a code 4 indicates suspected or known nuclear, biological, or chemical contamination; and a code 5 indicates battle damage. Codes 4 and 5 are entered into the MIS as code 8.

Commercial Derivative Aircraft—Any fixed or rotary-wing aircraft procured as a commercial Type Certified off-the-shelf aircraft, and whose serial number is listed on an FAA-approved Type Certified Data Sheet.

Commodity Time Compliance Technical Order—TCTO concerning a designated item, subsystem, or system that is not identified as a weapon or military system.

Composite Tool Kit (CTK)—A controlled area or container used to store tools or equipment and maintain order, positive control, and ease of inventory. CTKs are assembled as a kit and designed to provide quick, easy visual inventory and accountability of all tools and equipment. CTKs may be in the form of a toolbox, a shadow board, shelves, system of drawers (Stanley Vidmar®, Lista®, etc.), cabinets, or other similar areas or containers. The CTK contains tools and equipment necessary to accomplish maintenance tasks, troubleshooting, and repair.

Condition-Based Maintenance Plus—A set of maintenance processes and capabilities derived from real-time assessment of weapon system condition obtained from embedded sensors and/or external tests and measurements using portable equipment. The goal of CBM+ is to perform maintenance only when internal/external sensors indicate the need instead of performing maintenance on a periodic basis.

Contracting Officer Representative (COR)—A COR is an individual designated in accordance with DFARS subsection 201.602-2 and authorized in writing by the contracting officer to perform specific technical or administrative functions.

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 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.

Course Control Documents (CCD)—Set of documents that dictate how a course is taught. These documents include a course training standard, course chart, and a plan of instruction.

Crash Damaged or Disable Aircraft Recovery (CDDAR)—The ability to move damaged or disabled aircraft using specialized equipment

Cross-tell—Cross-tells are used to highlight trends, benchmarks or safety conditions relating to maintenance equipment, personnel, training or processes. A cross-tell is initiated to assist other maintenance or logistics personnel with similar equipment to do their jobs more safely and/or efficiently. Typically a cross-tell will be initiated when a condition or trend is discovered regarding, but not limited to, a weapon system or common components that should be shared with other users or potential users. This information should be transmitted using signed and encrypted email to ensure widest dissemination and ensure it is brought to the attention of unit commanders in order to prevent or mitigate mishaps, injury or damage to AF personnel, equipment or property. Typically cross-tells will provide relevant background information and history and can include such information as NSNs, part numbers, specific location of problem areas, etc.

Customer Wait Time (CWT)—CWT for LRUs is the total elapsed time between the issuance of a customer order and satisfaction of that order, regardless of source (immediate issues or backorders), and can include issues from wholesale and/or retail stocks as well as various other arrangements. CWT for end items (engines and pods) includes time for the retrograde and serviceable transportation legs.

Debriefing—Program designed to ensure malfunctions identified by aircrews are properly reported and documented.

Decertification—The removal of certification status from a person for a specific task

Dedicated Crew Chief—DCCs are first-level supervisors in the flightline management structure who manage and supervise all maintenance on their aircraft, and are selected on the basis of initiative, management and leadership ability, and technical knowledge.

Delayed or Deferred Discrepancies—Malfunctions or discrepancies not creating NMC or PMC status that are not immediately corrected.

Delayed Release—Munition or store that fails to eject from an aircraft upon firing of impulse cartridge, but releases sometime afterwards. Release times qualifying "delayed" bombs are outlined in MDS-specific technical orders.

Demand Response Team—Two-member team where one person reads technical order

steps and the other person performs the task and responds when each step is completed.

Depot Level Maintenance—Maintenance consisting of those on- and off-equipment tasks performed using the highly specialized skills, sophisticated shop equipment, or special facilities of a supporting command; commercial activity; or inter service agency at a technology repair center, centralized repair facility, or, in some cases, at an operating location. Maintenance performed at a depot may also include organizational or intermediate level maintenance as negotiated between operating and supporting commands.

Dispatchable CTK—CTK issued out and is designed to be used outside the work center.

Equipment Custodian—Individual responsible for all in-use equipment at the organizational level whose duties include requisitioning, receiving, and controlling of all equipment assets.

Equipment Identification Designator (EID)—A number assigned to a piece of shop equipment, used to track status and accountability.

Equipment Items—Item authorized in the allowance standard within an organization.

Evaluated Load—A loading task that is assessed according to **Chapter 10** of this instruction.

Flight Chief—NCO responsible to the maintenance officer or superintendent for management, supervision, and training of assigned personnel.

FK or FV—Prefix used to identify the munitions supply account. FV denotes units utilizing the Combat Ammunition System (CAS) system and FK denotes units utilizing ILS-S or manual records supply point within a munitions'' operations unit for conventional munitions.

Functional Checklist—locally developed checklists used to identify the steps required to react to specific events. Functional checklists are required for use by functional area(s) during actions such as aircraft crash, mass loads, severe weather warning or evacuation, self-inspections, etc.

Hung Ordnance—Any item attached to the aircraft for the purpose of dropping or firing which has malfunctioned or failed to release. In addition, hung ordnance includes the following items: (1) External fuel tanks after unsuccessful jettison attempt; (2) Remaining ordnance after an inadvertent release; (3) 20/30 mm ammunition after a gun malfunction (no fire, unplanned cease fire, runaway gun, or gun unsafe indication); (4) Any stores determined to be in an unsafe condition

Immediately Prior to Launch (IPL)—Specific tasks accomplished immediately prior to launching an aircraft.

In-Process Inspection (IPI)—Inspection performed during the assembly or reassembly of systems, subsystems, or components with applicable technical orders.

Inadvertent Release—Uncommanded launch or release of a store or ordnance, or launch/release of a store/ordnance other than those selected when a launch/release command was generated (i.e.; system malfunction); does not include an unintentional release. If commanding a single

release, do not consider a double bomb release as an inadvertent release if the releases occur from a practice bomb dispenser.

Individual Tools and Equipment—Tools and equipment that are available for individual sign-out but stored in the tool room in storage bins, cabinets, shelves, etc., with every item having an assigned location (e.g., flashlights, ladders).

Intermediate-Level Maintenance—Maintenance consisting of those off-equipment tasks normally performed using the resources of the operating command at an operating location or at a centralized intermediate repair facility.

Lead Crews—A load crew certified by the load standardization crew (LSC), which is assigned to WS to assist in conducting the weapons standardization program.

Levels—Computed and authorized requirements for a quantity of assets.

Loading Standardization Crew (LSC)—A load crew designated by the WWM and the WS superintendent to administer the weapons standardization program. LSC members have certification and decertification authority

Loading Task—The actions required by one crew member, in a designated position, to accomplish a munitions load

Local Commander—The group commander with responsibility for maintenance (as applicable to loading technical data).

Locked Out or Tag Out—Energy isolating device is capable of being locked out if it has a hasp or other means of attachment to which or through which a lock can be affixed. Tag out devices, shall be substantial enough to prevent inadvertent or accidental removal.

Maintenance capability—Unit's ability to generate and sustain weapon systems to support the mission. It is composed of personnel, capacity (facilities, support equipment, and parts), and weapons systems and is affected by policies and business practices.

Maintenance Training—Any proficiency, qualification, or certification tasking required by a technician to perform duties in their primary AFSC.

Master Inventory List (MIL)—Primary source document for inventory of CTKs. The MIL indicates the total number of items in each drawer or section of the tool kit. MIL may be automated.

Mission Design Series (MDS)—Alpha and numeric characters denoting primary mission and model of a military weapons system.

Mission Generation Network— The MGN supports all Organizational-level, on-equipment and off-equipment maintenance and is optimized at the Wing-level across the USAF. MGN consists of the cumulative effort required to generate, and sustain sortie/mission production to meet assigned mission requirements.

Minimum Required Proficiency Load (MPRL)—Recurring loading of munitions for which a person is certified.

Munitions Decertification—Removal of the certification status of a person that precludes them from loading a specific type munitions or MFG.

Normally Installed Equipment (NIE)—Bomb racks, launchers, and pylons normally installed on an aircraft.

No-Lone Zone—Area where the two-person concept must be enforced because it contains nuclear weapons, nuclear weapons systems, or certified critical components.

Non-Release—System malfunction in which a weapon does not release from the delivery system.

Off-Equipment Maintenance—Maintenance tasks that are not or cannot be effectively accomplished on or at the weapon system or end-item of equipment, but require the removal of the component to a shop or facility for repair.

On-Equipment Maintenance—Maintenance tasks that are or can be effectively performed on or at the weapon system or end-item of equipment.

Operating Stock—The bits and pieces needed to support a maintenance work center that does not meet the criteria of bench stock. It includes reusable items such as dust covers, hydraulic line covers, caps, items leftover from work orders, TCTOs. Items deleted from bench stock that are less than a full Unit of Issue (UI) are not considered operating stock but may be retained as work order residue.

Organizational Level Maintenance—Maintenance consisting of those on-equipment tasks normally performed using the resources of an operating command at an operating location.

Personnel Protective Equipment (PPE)—Equipment required to do a job or task in a safe manner.

Plan—A forecasted scheme of sequenced and timed events for accomplishing broad objectives. The plan is the product of annual, quarterly, and monthly planning of scalable operations and maintenance activities necessary to achieve long term mission requirements

Preload—A complete munition and suspension equipment package ready for loading

Possession Purpose Code (PPC)—Also known as Purpose Identifier Code, it is a two-letter code that indicates ownership (possession) of the asset. For example, “BQ” = major maintenance awaiting AFMC decision/action; “CC” = combat; “DO” = depot level maintenance possession for depot work; etc.

Primary Aerospace Vehicle Authorization (PAA)— The number of aircraft authorized to a unit for performance of its operational mission. The primary authorization forms the basis for the allocation of operating resources to include manpower, support equipment, and flying-hour funds.

Primary Aerospace Vehicle Inventory (PAI)— The aircraft assigned to meet the primary aircraft authorization. Includes PMAI, PTAI, PDAI and POAI.

Production Superintendent (Pro Super)—Senior NCO responsible for squadron maintenance production. Directs the maintenance repair effort.

Programmed Depot Maintenance (PDM)—Maintenance activities requiring skills, equipment, or facilities not normally possessed by operating locations.

Quality Assurance (QA)—Office or individual who monitors maintenance (organic or contractor) on a daily basis.

Quarterly Evaluation (QE)—Recurring calendar task evaluations required by munitions and weapons personnel.

Queen Bee—A facility that performs engine repair for a specified region.

Quick Reference List (QRL)—Listing of fast moving, high use items required for primary mission aircraft. The basic purpose of the QRL is to provide maintenance personnel with a speedy way to place a demand on the supply system.

Rag—A remnant of cloth purchased in bulk or a standardized, commercial quality, vendor-supplied shop cloth (uniform size and color) or similar material used in general industrial, shop, and flightline operations.

Reclama—A request to a duly constituted authority to re-consider its decision or its proposed action (see JP 1-02).

Recurring Discrepancy—A recurring discrepancy is one that occurs on the second through fourth sortie or attempted sortie after corrective action has been taken and the system or sub-system indicates the same malfunction when operated.

Reliability-Centered Maintenance—A logical discipline for developing a scheduled-maintenance program that will realize the inherent reliability levels of complex equipment at minimum cost.

Remote Split Operations—Occurs when the ground control stations, the Unmanned Aerial Vehicle (UAV) launch and recovery functions, and the satellite uplink are geographically separated.

Repair Cycle Asset—Any recoverable item with an expendability, recoverability, reparability code (ERRC) category of XD or XF.

Repeat Discrepancy—One repeat discrepancy occurs on the next sortie or attempted sortie after corrective action has been taken and the system or sub-system indicates the same malfunction when operated.

Retrograde—Returning assets (particularly reparable assets) from the field to their source of repair.

Schedule—Planned events that result in final review and agreement of how to execute a proposed plan of sequenced and timed events. Results in a binding commitment captured in writing and approved by signature between operations and maintenance to complete activities required to accomplish agreed upon objectives. Refers to the execution phase of weekly and daily operations and maintenance activities.

Shop CTK—Tool kits (not dispatched) used by work center personnel during a shift, provided a single person is responsible for the tool kit.

Shop Stock—Includes items such as sheet metal, electrical wire, fabric, and metal stock, used and stored within a maintenance work center to facilitate maintenance.

Spares—Serviceable assets that are available for future use, and in the logistics pipeline. The term spare carries the assumption that there are already enough assets in the AF inventory to satisfy end item or quantity per aircraft requirements.

Special Certification Roster (SCR)—Management tool that provides supervisors a listing of personnel authorized to perform, evaluate, and inspect critical work.

Special Purpose CTK—Small individually issued tool kits that because of the nature of contents or type of container could preclude shadowing or silhouetting (e.g., launch kits, recovery kits, cartridge cleaning kits, oxygen servicing kits, etc.).

Subcrew—Two or more certified and/or qualified personnel who may perform specific tasks

Supply Point—Forward warehouse located within or near the maintenance work center.

Sub-Pool—A parking area designated by the Airfield Operations Flight that provides authorized pooling of serviceable AGE to enhance close proximity support to using organizations.

Tactical/Theater Airborne Reconnaissance System (TARS)—is a sensor package offers improved timeliness, reduced support costs, and improved operational capability over film systems. Once fielded, this system will provide the tactical commander with an organic system capable of responding in Near Real time (NRT) (in time) to battlefield requirements.

Tail Number Bins (TNB)—Locations established and controlled to store issued parts awaiting installation and parts removed to FOM. Holding bins are set up by tail number, serial number, or identification number.

Task Assignment List (TAL)—Functional grouping of procedural steps from applicable -33 series TOs, by crew position, to be accomplished in sequence by each crew member during an operation.

Technical Administrative Function—Function responsible for ordering and posting instructions, processing all orders, enlisted performance ratings, and general administrative tasks for the section.

Technical Order Distribution Office (TODO)—Function required to maintain records on TOs received and distributed.

Time Compliance Technical Order (TCTO)—Authorized method of directing and providing instructions for modifying equipment, and performing or initially establishing one-time inspections.

Tool Storage Facility/Tool Room—A controlled area within a work center designated for storage and issue of tools and equipment.

Total Asset Visibility—The capability to provide users with timely and accurate information on the location, movement, status, and identity of units, personnel, equipment, materiel, and supplies. It also includes the capability to act upon that information to improve overall performance of the Department of Defense's logistic practices.

Unintentional Release—Store or ordnance launched or released through pilot error.

Unit Committed Munitions List (UCML)/Test/Training Munitions List (TTML)—The UCML/TTML is a list of primary munitions (PM), support munitions (SM), and limited-use munitions (LM) necessary to meet unit operational/training requirements.

Unmanned Aerial Vehicle (UAV)—An unmanned aircraft that is either remotely piloted (e.g., Predator) or programmed (e.g., Global Hawk).

Urgency Justification Code (UJC)—Two-digit code used to reflect the impact and type of need. The urgency of need designator (UND) fills the first position of the UJC. Use of UND 1, A and J is restricted and is verified by designated personnel.

Utilization Rate (UTE Rate)—Average number of sorties or hours flown per primary assigned aircraft per period. Usually time period is based on a monthly rate.

Weapons Certification—The act of verifying and documenting a person's ability to load a particular type of aircraft, and munition or MFG within established standards

Weapons Locally-Manufactured Equipment (LME)—All equipment that measures, tests, or verifies system, subsystem, component, or item integrity. It also includes equipment such as handling dollies, storage racks (except storage shelves), maintenance stands, or transport adapters. It does not include simple adapter cables and plugs constructed as troubleshooting aids to replace pin-to-pin jumper wires specified in TOs.

Weapons Standardization (WS)—Organization comprised of the WWM, a Superintendent, the Load Standardization Crew, an academic instructor, and lead crews.

Weapons Task Qualification—A munitions related task not requiring certification

Weight and Balance (W&B) Program—Program used in calculating, verifying, updating, and computing weight and balance on a weapon system.

Attachment 1 (AFMC)

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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AFMC Form 62, CTK Inventory and Control Log, 8 Nov 2005

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AFTO Form 428, B-1B Aircraft Integral Fuel Tank Repair Historical Record, 1 May 1989

DD Form 2026, Oil Analysis Request, 01 Aug 2014

Abbreviations and Acronyms

AA—Air Abort

AED—Automated External Defibrillators

AF—Air Force

AF CPI—Air Force Continuous Process Improvement

AFGM—Air Force Guidance Memorandum

AFMAN—Air Force Manual

AFNWC—Air Force Nuclear Weapons Center

AFTC—Air Force Test Center

AIS—Avionics Intermediate Section

ARMS—Aviation Resource Management System

BB—Black Belt

BPA—Blanket Purchasing Agreement

BR—Break Rate

CAP2—Capability and Capacity

CCR—Circuit Card Repair

CEM—Command Engine Manager

CFT—Combined Flight Test

COA—Coarse of Action

CPI—Continuous Process Improvement

CPI/LSS—Continuous Process Improvement/Lean Six Sigma

CSE—Center Scheduling Enterprise

DCS—Defense Collaboration Services

DoDD—Department of Defense Directive

DoDI—Department of Defense Instruction

DPII—Depot Pre-Induction Inspection

DT&E—Developmental Test & Evaluation

EFT—External Fuel Tank

EIMSURS—Equipment Inventory, Multiple Status and Utilization Reporting Subsystem

ESS—Edwards Scheduling System

FD—Functional Director

GA—Ground Abort

GB—Green Belt

HQ—Headquarters / Hangar Queen

IMF—Integrated Maintenance Facility

IPS—Integrated Product Support

IQU—Integrated Query Utility

LCL—Life Cycle Logistics

LCLMS—Life Cycle Logistics Management Specialist

LT&E—Logistics Test & Evaluation

MXLS—Maintenance Logistics Test Squadron

MXO—Maintenance Operations Flight

MXOL—Maintenance Operations Flight Logistics Site Support

MXOPL—Maintenance Operations Flight Programs Element

MXOPM—Maintenance Operations Flight Manpower

MXOPO—Maintenance Operations Flight Organizational Design and Improvement

MXW—Maintenance Wing

NASA—National Aeronautics and Space Administration

NOCM—Nuclear Ordnance Commodity Management

NRPIE—Non-Real Property Installed Equipment

OCR—Organization Change Request

OPSEC—Operations Security

OT&E—Operational Test and Evaluation

PGM—Precision Guided Munitions

PI—Program Introduction

PIM—Prime Item Manager

POM—Program Objective Memorandum

PPS—Product Performance Subsystem

PPSM—Practical Problem Solving Method

PRA—Planning Requirements

PRS—Performance Requirements Statement / Propulsion Requirements System

PTO—Preliminary Technical Order

QASP—Quality Assurance Evaluation Program

QLP—Query Language Processor

RM/CM—Requirements Management/Configuration Management

RNEP—Repair Network Enhancement Program

RP—Real Property

RPA—Request for Personnel Actions

RPV—Remote Piloted Vehicle

SEM—Scheduling Effectiveness for Maintenance

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

SHD—Significant History Data

SOC—Statement of Capabilities

SOI—Sustainment Operating Instructions

SQL—Structured Query Language

SRT—Sample Response Time

SRU—Shop Replaceable Unit

TD—Technical Data and/or Test Directive

T&E—Test and Evaluation

TMSM—Type Make Series Modification

TNMCM—Total Not Mission Capable for Maintenance

TNMCS—Total Not Mission Capable for Supply

TSE—Test Schedule Effectiveness

TW—Test Wing

UMD—Unit Manning Document

WTR—Workable TCTO Report

Terms

Acceptable Quality Level (AQL)/Standards—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

Assessment—The evaluation of a system, component, process, procedure or person.

Corrective Action—The action to eliminate the cause of a detected defect or other undesirable condition.

Critical Path—Schedule network analysis technique that is performed using the schedule model. The critical path method calculates the theoretical early start and finish dates, and late start and finish dates, for all schedule activities without regard for any resource limitations by performing a forward pass analysis and backward pass analysis through the project schedule network paths.

Detected Safety Violation (DSV)—An unsafe act by an individual.

Evaluator Proficiency Evaluations (EPE) —An EPE is the direct evaluation of a Quality Assurance (QA) individual or any individual performing a quality/compliance assurance function in a unit.

Flightline—Any area or facility including aprons, hardstands, and ramps on or in which aircraft may be parked, stored (AMARG gravel storage areas are not considered flightline), serviced or maintained and operated under their own power.

Foreign Object (FO)—A substance alien to aircraft, engines, munitions, missiles, drones, space systems, support equipment, AGE, trainers or components thereof that has been allowed to invade the product. Any FO in a maintenance area has the potential to cause damage.

Maintenance Area—Any area where jet engine, on-equipment aircraft, aircraft assemblies, subassemblies, munitions, missiles, rockets, and support equipment maintenance operations are conducted to include hangars, shelters, docks (closed or semi closed), test cell, hush house, paint barns, fuels barns, back shops, industrial areas, on the flightline or outside maintenance areas such as wash racks, aprons, hardstands and run pads.

Maintenance Wing Quality Manual—A quality assurance manual provides an organized way of communicating how quality is managed; defines specific roles and responsibilities and defines how the organizations quality program is implemented. It provides the basic implementation

guide required at each ALC to ensure all requirements standardized within each Production Group's QAP.

Major Finding—Defined as a condition that would endanger personnel, jeopardize equipment reliability, or warrant discontinuing process or equipment operation.

Minor Finding—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

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

Personnel Evaluation (PE)—A PE is an over-the-shoulder evaluation of a PAC certified mechanic/ technician or team performing a maintenance task.

Property Damage—Damage to facilities, equipment, property, materiel, or resources. If the occurrence meets mishap reporting criteria, then the cost of environmental cleanup shall be included in property damage costs.

Quality Assurance Plan (QAP)—The QAP identifies specific detailed quality processes and procedures relative to a particular organization. QAPs provide documentation of an organization's day-to-day operational procedures.

Quality Assessment Results (QAR) Rating—A numerical value reflecting the results of a quality assessment. There are two QAR ratings (1 and 3) each based on the number and severity of defect in the rated area.

Quality Assurance Surveillance Plans (QASP)—The QASP identifies the functions and associated actions performed by a particular organization to ensure that requirements are performed in accordance with specified standards and that an appropriate level of quality control activities are in place and operational.

Quality Information Management Standard System (QIMSS)—A data collection system used to collect and analyze QA data.

Quality Verification Inspection (QVI)—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 stamped.

Readyline —A mass parking area where AGE is positioned for dispatch by AGE personnel.

Repair Network Integration (RNI)— CSAF initiative to develop an enterprise wide repair capability managed by a single process owner that provides integrated support to the warfighter. The end goals of RNI are: to be able to rationally manage the entire repair infrastructure; improve investment decision making; rationally allocate manpower for the repair network; develop standardized and repeatable management processes; and lower total system costs while increasing maintenance's ability to respond to changing Air Force requirements with greater agility and effectiveness.

Routine Inspection List (RIL)—A list of inspection requirements/areas generally designated by the MAJCOM to be conducted on a recurring basis?

Special Inspections (SI)—SIs are inspections not covered by CI checklists, Management Inspections, PEs, QVIs, or checklists accomplished as part of the Annual Technical Compliance Review. SIs can include, but are not limited to, applicable MAJCOM inspection checklists. Special Inspections when driven by the analysis of assessment data may be conducted at the discretion of the local QA. However, observed deficiencies beyond those identified as a checklist question (i.e., stumble on) will be recorded in QIMSS under the category of Special Inspection. SIs will be assigned a rating (QAR 1, 2 or 3) based on severity of the observation. SIs are designed to provide a flexible tool to complement other quality assessment types. The Maintenance Wing Quality Manual or QAP should clearly describe how SIs are conducted as part of an overall QA program.

Sub-Pool—A site, other than the central AGE readyline, where AGE is positioned for future dispatch by the user. Sub-pools are set up based on mission needs, facilities, or base layout. The purpose of the sub-pool is to provide the user flexibility to use the AGE multiple times without AGE technicians performing a service inspection.

Technical Data—Approved instructions relating to the management, repair, and/or use of a weapon system or component. Technical data includes, but is not limited to, TOs, Military Standards/Specifications, engineering drawings, schematic diagrams, flow diagrams, manufacturer’s handbooks, manuscripts of Operations & Maintenance (O&M), Preliminary Technical Orders (PTOs), Commercial Technical Manuals (TMs, Research & Development (R&D) TMs, and other systems or equipment O&M procedures developed under AFMC or other acquisition agency directions during the systems acquisition phase.

Technical Data Violation (TDV)—An observation of any person performing maintenance without the proper technical data available and in use.

Trainer Proficiency Evaluations (TPE) —A TPE is the direct evaluation of a unit instructor/trainer to determine their ability to teach accurately and sufficiently. TPEs also assess weapon system, equipment or process knowledge; teaching methods and techniques; the ability

to operate trainers; and adequacy and effectiveness of training programs. Any individual training personnel on a task or process is subject to a TPE.

Unsatisfactory Condition Report (UCR)—A UCR is considered a condition other than a DSV or TDV, chargeable to the work center supervisor.

Attachment 2

AIRCRAFT COMMANDER FEEDBACK ON FCC

Figure A2.1. Aircraft Commander Feedback on FCC.

MEMORANDUM FOR <Unit Designation/Office Symbol> Date

<Street>

<Base, State, and Zip Code>

FROM: <Aircraft Commander>

<Street>

<Base, State, and Zip Code>

SUBJECT: Aircraft Commander Feedback of the Flying Crew Chief (FCC)

Was the FCC knowledgeable of the aircraft and the systems?
a - Extremely knowledgeable c - Lacks knowledge
b - Sufficient knowledge d - Not observed

Did the FCC know the status of PMC and NMC discrepancies?
a - Always c - Rarely
b - Most of the time d - Never

Did the FCC perform duties willingly and enthusiastically?
a - Always c - Never
b - Sometimes d - Not Observed

What type of working relationship did the FCC have with the aircrew?
a - Outstanding c - Fair
b - Good d - Poor

Rate the overall maintenance support provided by the FCC:
a - Outstanding c - Fair
b - Good d - Poor

This FCC was:
a - An asset to the FCC program c - Just getting by
b - A hard worker, but needs more experience d - Detriment to the FCC program

Remarks:

POC is <FCC Program Manager's Name, office symbol, duty phone number>.

<signed>
Aircraft Commander

Note: Please fold and return to the squadron FCC Program Manager upon return to home station.

Attachment 3

QUARTERLY FCC REPORT FORMAT

Figure A3.1. Quarterly FCC Report Format.

MEMORANDUM FOR HQ MAJCOM/A4L Date

FROM: <Unit Designation/Office Symbol>

<Street>

<Base and Zip Code>

SUBJECT: <State fiscal quarter (e.g., FY98/3)> Quarterly Flying Crew Chief Report (RCS: HAF-A4L(Q&A)0011)

In accordance with AFI 21-101 <unit designations> report is submitted.
Number of C-coded FCC positions on the Unit Manpower Document entitled to be filled.
Include approved changes (losses/increases):
Number of people filling C-coded positions:
Number of qualifying missions flown per quarter by C-coded crew chiefs. Include the number of TO directed missions:
Number of qualifying missions flown by personnel without C-coded prefix. Include TO directed missions flown by non c-coded prefix personnel:
Number of all missions away from home station that required FCCs:
Total number of days TDY for all C-coded crew chiefs on qualifying missions:
Total number of days TDY for all non C-coded crew chiefs on qualifying missions:
Unit and MAJCOM remarks and overall program assessment. Include remarks to justify vacant positions:
FCC Program Manager is <rank, name>, office symbol, DSN number.

<Sign>
Commander, <Unit Designation>

Attachment 4

ANNUAL FCC REPORT

Figure A4.1. Annual FCC Report.

MEMORANDUM FOR HQ MAJCOM/A4L or DOM Date

FROM: <Unit Designation/Office Symbol>

<Street>

<Base and Zip Code>

SUBJECT: <state fiscal year (e.g., FY98)> Annual Flying Crew Chief Report RCS: HAF-A4L(Q&A)0011)

In accordance with AFI 21-101<unit designations> report is submitted.
Number of C-coded FCC positions on the Unit Manpower Document entitled to be filled.
Include approved changes (losses/increases):
Number of people filling C-coded positions:
Number of qualifying missions flown per quarter by C-coded crew chiefs. Include the number of TO directed missions:
Number of qualifying missions flown by personnel without C-coded prefix. Include TO directed missions flown by non c-coded prefix personnel:
Number of all missions away from home station that required FCCs:
Total number of days TDY for all C-coded crew chiefs on qualifying missions:
Total number of days TDY for all non C-coded crew chiefs on qualifying missions:
Unit and MAJCOM remarks and overall program assessment. Include remarks to justify vacant positions:
FCC Program Manager is <rank, name>, office symbol, DSN number.

<Sign>
Commander, <Unit Designation>

Attachment 5

FCC SDAP REQUEST

Figure A5.1. FCC SDAP Request.

MEMORANDUM FOR HQ MAJCOM/A4L or DOM Date.

ROM: FROM: <Unit Designation/Office Symbol>

<Street>

<Base and Zip Code>

SUBJECT: Flying Crew Chief (FCC) SDAP Positions <Increase/Decrease> Request

In accordance with <unit designations> requests <increase or decrease> of <state quantity of positions>.
Provide brief justification; include comments about force structure changes, additional mission requirements, etc.
FCC Program Manager is <rank, name>, office symbol, DSN number.

<Sign>
Commander, <Unit Designation>

Attachment 6

FOREIGN OBJECT DAMAGE (FOD) REPORT

Figure A6.1. Foreign Object Damage (FOD) Report.

MEMORANDUM FOR
Date

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-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, ETS, etc.)

Owning Unit, Base and MAJCOM

MDS and Tail Number (N/A for ETS incidents)

Engine Type, Make, Series (TMS):

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>

Attachment 7 (Added-AFMC)

DROPPED OBJECT PROGRAM (DOP) REPORTING FORMAT

Figure A7.1. Dropped Object Program (DOP) Reporting Format.

MEMORANDUM FOR Date

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-060501).

1. DOP program report number (unit, year, and month, followed by sequence number -- example, 301FW-060501).

2. MDS.

3. Type mission and mission profile.

4. Aircraft tail number.

5. Owning organization and base.

6. Origin of sortie.

7. Date of incident and discovery location (if different than origin of sortie).

8. Geographical location of object, if known.

9. Item, noun, and description (use information from the applicable aircraft -4 series TOs).

10. TO, figure, and index.

11. Part number.

12. Correct WUC (full five-digit) or Logistics/Maintenance Control Number (full seven-digit).

13. Last PH, PE, PDM, HSC, or ISO inspection.

14. Last maintenance performed in the area and date.

15. Investigation findings (cause).

16. Costs in dollars to repair or replace dropped object and any collateral aircraft damage as appropriate and cost in man-hours to repair.

17. Actions to prevent recurrence.

18. DR Control Number (if submitted).

19. Unit POC information.

20. Other pertinent information.

<Sign>DOP Monitor, <Unit Designation>

Attachment 8 (Added-AFMC)

TEST WING MAINTENANCE AND FLYING SCHEDULING PROCEDURES

A8.1. (AFMC) General Responsibility And Policy

A8.1.1. **(AFMC) Goals and Objectives.** The goal of this attachment is to provide the most effective guidance for unit planning and execution of operations flying and maintenance scheduling activities in support of the AFMC flying hour program. The objectives of this guidance are to:

A8.1.1.1. **(AFMC)** Provide methods for units to develop and improve their flying and maintenance scheduling programs.

A8.1.1.2. **(AFMC)** Provide audit methods so that units may analyze their effectiveness.

A8.1.1.3. **(AFMC)** Provide methods for local commanders, and the MAJCOM, to assess effectiveness of unit performance in schedule planning and execution.

A8.1.2. **(AFMC) Guidance.** These instructions provide procedures and audit methods for units to develop their flying and maintenance scheduling program and analyze their effectiveness. It is intended to be a local tool for operations and maintenance activities to use in support of their programs. Reviewing flying and maintenance schedule deviations, and the reasons for those deviations, allows wing commanders (WG/CC) and their staffs/subordinates to evaluate unit flying program and scheduling procedures for efficiencies and effectiveness. Higher Headquarters (HHQ) management attention is directed to those areas beyond a unit's control.

A8.1.3. **(AFMC) Applicability.** This publication is applicable to all AFMC Centers and activities possessing, flying or supporting aircraft, to include contractor maintained operations.

A8.1.4. **(AFMC) Standardization.** Wings will develop a supplement to this instruction standardizing attrition rate, spare factors and scheduling practices for the wing and each assigned mission design series (MDS). Minimum topics should include quiet hour policies, cross country takeoffs and returns, minimum turn times, crew ready times, etc. Supplements will include local schedule input and publishing deadlines along with any wing unique requirements.

A8.1.5. **(AFMC) Reporting Requirements.** Flying scheduling deviation recording and reporting is required for all AFTC and AFLCMC possessed aircraft while status, inventory, and utilization reporting is required for all AFMC units and activities possessing or supporting AFMC possessed aircraft to include those possessed for the AFMC mission by contractors.

A8.1.5.1. **(AFMC)** Reporting procedures are contained in Chapter 2 of this publication. Operations, maintenance, test agencies, and others share in the responsibility for monitoring and controlling deviations. Schedule deviations altering the planned use of resources generally have a domino effect that upsets future and near-term events. Every effort must be made to reduce or eliminate deviations.

A8.1.5.2. **(AFMC)** Units will use approved MIS reporting procedures. This includes contractor-maintained, AFMC assigned and possessed aircraft. In the event that the contractor is not obligated to utilize the MIS, the MXG commander or equivalent is responsible to ensure all reporting procedures are complied with.

A8.1.6. **(AFMC) First Look.** The maintenance planning cycle ensures proper and effective use of maintenance resources. Maintenance schedulers use both maintenance and operational long-range planning to assess maintenance's ability to support the wing flying program, Programmed Depot Maintenance (PDM) schedules, Time Compliance Technical Order programs, scheduled inspections and exercises. PS&D or equivalent will perform the long range planning function and uses MIS products such as time distribution index (TDI), planning requirements (PRA), and workable TCTO report (WTR) to determine long range maintenance requirements. PS&D will forecast and monitor requirements for the planned fiscal year. Maintenance requirements are included in long-range plans to project aircraft availability.

A8.1.6.1. **(AFMC)** Every year, on or about 15 March, MOF PS&D will request Maintenance Management Analysis (MMA) accomplish airframe, personnel, and facility capabilities for each AMU based on historical data to start the First Look requirements. The capabilities are due back to MOF PS&D no later than (NLT) the last workday of March.

A8.1.6.2. **(AFMC)** MOF PS&D will provide copies of the capability study to each Operations Squadron (OS) operations scheduling and maintenance supervision. AMU PS&D will refine the initial MMA airframe capability by applying projected maintenance requirements to the historical data. AMU PS&D will provide first look maintenance capability projections in a monthly format to OS operations officer, AMU OIC/ NCOIC, AMXS/CC/MOO, and MOF PS&D by 15 May. Projections include known operational and test requirements, an assessment of maintenance's ability to support the monthly contract requirements, and an overall assessment of the unit's maintenance capability to meet the annual flying hour program.

A8.1.6.3. **(AFMC)** MOF PS&D will gather the AMXS and OS coordinated operational capability and forward them to OSS Operations Flight scheduling section for consolidation into a comprehensive package that includes a breakdown of the following items by OS/AMU:

A8.1.6.3.1. **(AFMC)** Sorties contracted/scheduled per day. Compute the number of sorties (hours) required per operations and maintenance (O&M) day to meet the operational and test requirement using the formula: Number of sorties (hours) required divided by number of O&M days in a given month. Sorties (hours) per day will be computed by month for each operational squadron/AMU.

A8.1.6.3.2. **(AFMC)** Monthly scheduled sorties. Compute monthly scheduled sortie requirements using the formula: (Number of sorties or hours required) divided by (1 minus the attrition factor). Example: 1,000 sorties or hours required divided by (1 minus 0.15) equals 1,177 sorties or hours to schedule. Remember to round any part up to the next whole sortie or hour.

A8.1.6.3.3. **(AFMC)** Inspection dock capabilities. Compute the number of Phases/ISO inspections to be accomplished in order to meet operational and test requirements for each AMU, by month, for the entire fiscal year. Compute dock capability using the formula (number of O&M days) divided by (number of phase days) times (inspection cycle). Inspection dock capabilities is provided at the wing level and provided by the squadron performing inspections.

A8.1.6.3.4. **(AFMC)** Sortie UTE Rates. Compute UTE rates by month for the entire fiscal year for contracted (required) sorties and scheduled sorties using formula: (number of sorties per month) divided by (number of PAI aircraft).

A8.1.6.4. **(AFMC)** Once compiled, the annual maintenance plan will be presented to the OG and MXG CCs (or equivalents) before being presented to the WG/CC for final approval. MOF PS&D will review the comprehensive package submitted to OSS Operations Flight scheduling section and provide feedback to AMU PS&D and MXG/CC if required. Final assessments of maintenance capabilities to support the operations ―first look‖ projections are sent to AFMC/A4.

A8.1.7. **(AFMC) Flying Hour Allocation/Annual Maintenance Planning Cycle.**

A8.1.7.1. **(AFMC)** Flying Hour Allocation. Using the Lead Command Baseline Allocation message (provided by AFMC/A3), PS&D and OS/OSS scheduling provide affected work centers the following planning factors NLT 20 August each year, or within 10 working days after receipt of the flying hour allocations:

A8.1.7.1.1. **(AFMC)** Updated capabilities computed by MMA, provided by PS&D.

A8.1.7.1.2. **(AFMC)** Required flying hours and estimated sorties and missions, provided by OSS, in monthly increments.

A8.1.7.1.3. **(AFMC)** Flying days in each month, provided by OSS.

A8.1.7.1.4. **(AFMC)** Aircraft and aircrew alert requirements, provided by OSS.

A8.1.7.1.5. **(AFMC)** Known and projected TDY and special mission requirements, provided by OSS.

A8.1.7.1.6. **(AFMC)** PDM schedule, provided by PS&D.

A8.1.7.1.7. **(AFMC)** Configuration and munitions requirements, provided by OSS.

A8.1.7.1.8. **(AFMC)** Special mission and test requirements.

A8.1.7.2. **(AFMC)** NLT 1 September, or within 10 working days after receipt of the planning factors, maintenance supervision provides PS&D, SQ/CCs, and OSS operations scheduling the following planning factors:

A8.1.7.2.1. **(AFMC)** Estimated number of aircraft available by month, taking into consideration aircraft required for training.

A8.1.7.2.2. **(AFMC)** A projected airframe capability statement.

A8.1.7.2.3. **(AFMC)** Forecasted personnel capability, taking into consideration required annual training for maintenance personnel. (Not applicable to contract maintenance organizations).

A8.1.7.2.4. **(AFMC)** The number of supportable sorties for each month.

A8.1.7.2.5. **(AFMC)** An estimated monthly attrition factor provided by MMA. This factor combines operations, weather and materiel (maintenance and supply) factors. Maintenance is responsible for adding the attrition factor to operational requirements.

A8.1.7.2.6. **(AFMC)** A recommended block scheduling pattern.

A8.1.7.2.7. **(AFMC)** A statement of limitations.

A8.1.7.3. **(AFMC)** The OSS Operations Flight commander consolidates unit inputs into a final package and coordinates it through the OG and MXG CCs before final approval from the WG/CC. MOF PS&D will review the package and provide feedback to AMU PS&D and MXG/CC, if required. The final approved package constitutes the wing annual FHP. A copy of the approved annual plan and changes thereafter will be forwarded to MOF PS&D and the Analysis section. Units will submit the annual FHP (contract) to AFMC/A3 and AFMC/A4M around the 15th of September.

A8.1.7.4. **(AFMC)** The annual plan will show the number of flying hours projected to fly by aircraft Mission Design Series (MDS). Flying hours will be subdivided into planned test/test support, test pilot school, and an —all other category (i.e. proficiency, maintenance, ferry, etc.).

A8.1.8. **(AFMC) Quarterly Scheduling**. The quarterly plan applies to Test Wing training missions and all known test missions.

A8.1.8.1. **(AFMC)** Quarterly planning starts with the operational requirements for the flying hours, UTE rate, and airframe availability, alert and other related scheduling data. The OS operations officer provides these requirements to maintenance supervision and PS&D NLT 25 days before the beginning of the quarter. Maintenance supervision and the OS operations officer discuss these requirements at the scheduling meeting before the quarter being planned.

A8.1.8.1.1. **(AFMC)** The Test Wing scheduling office will use the following priority as a guide to determine which objectives to support if a lack of resources prevents meeting requirements such as: alert commitments, HHQ directed missions, training, and test and test support missions.

A8.1.8.2. **(AFMC)** The unit's rolling 3-month maintenance plan briefed each month meets the intent of the quarterly scheduling process. The meeting may be held in conjunction with the weekly or as a separate scheduling meeting. The plan will be posted so it may be viewed by both maintenance and operations.

A8.1.9. **(AFMC) Monthly Scheduling**. Due to the nature of the test mission, publishing the monthly flying schedule according to AFI 21-101 is not conducive to mission requirements; instead, a tentative monthly plan will be created for planning purposes.

A8.1.9.1. **(AFMC)** The monthly scheduling meeting may be held in conjunction with the weekly scheduling meeting or as a separate scheduling meeting.

A8.1.9.2. **(AFMC)** Included in the monthly flying and maintenance plan are:

A8.1.9.2.1. **(AFMC)** Follow guidelines in AFI 21-101 Chapter 15 with the following exceptions:

A8.1.9.2.1.1. **(AFMC)** Only known operational and test requirements are reported (not detailed utilization).

A8.1.9.2.1.2. **(AFMC)** Known ground test/mount requirements are included.

A8.1.9.3. **(AFMC)** Post the monthly flying and maintenance plan before the beginning of the affected month. All agencies will submit their monthly schedule inputs to PS&D for consolidation and coordination.

A8.1.10. **(AFMC) Weekly Scheduling**. Refer to details within this attachment along with para. 15.5.5 of this instruction for any additional guidance.

A8.1.10.1. **(AFMC)** Also included in the weekly flying and maintenance schedule will be:

A8.1.10.1.1. **(AFMC)** Sortie sequence numbers, aircraft tail numbers (primary and spares), scheduled take-off and landing times, aircraft or equipment scheduled use times, configurations, fuel loads and special equipment requirements.

A8.1.10.1.2. **(AFMC)** Scheduled maintenance actions by aircraft and equipment serial number to include inspections, TCTOs, time changes, contract and depot inputs, engine changes, washes or corrosion control, documents review, deferred discrepancies, modifications and hours remaining to phase.

A8.1.11. **(AFMC) Daily Scheduling Process.** Units must effectively plan and execute operations and maintenance schedules. Each day, no later than 1600 local time, the OG and MXG CCs or their designated group representative will review and publish the daily flying and maintenance schedule, agree on revisions, and coordinate with other agencies to confirm the next day's activities. Use AF IMT 2407 or authorized automated system in coordinating the final schedule through the affected production superintendent, AMU OIC/SUPT, AMXS Maintenance Supervision (MS), MXS MS, operations group representative, maintenance group, and wing staff agencies. (i.e. MOC/ROC, PS&D, Analysis, etc.). Deviations will be recorded based on this final daily flying schedule. Additional scheduling reporting procedures are located in para 2.3 and 5.1 of this Attachment.

A8.1.11.1. **(AFMC)** The finalized daily flying schedule will include, at a minimum, the following details:

A8.1.11.1.1. **(AFMC)** Aircraft tail numbers.

A8.1.11.1.2. **(AFMC)** Aircraft takeoff and landing times.

A8.1.11.1.3. **(AFMC)** Configuration requirements.

A8.1.11.1.4. **(AFMC)** Munitions requirements.

A8.1.11.1.5. **(AFMC)** Fuel loads.

A8.1.11.1.6. **(AFMC)** Special or peculiar test support requirements.

A8.1.11.1.7. **(AFMC)** Special or peculiar mission support requirements.

A8.1.11.1.8. **(AFMC)** Off station sorties.

A8.1.11.1.9. **(AFMC)** On equipment training requirements.

A8.1.11.1.10. **(AFMC)** Other special requirements (i.e. ground test/mount).

A8.1.11.2. **(AFMC)** Maintenance Debrief will load all sorties considered "flown as scheduled" (e.g. Functional Check Flights (FCF)/Operational Check Flight (OCF), Ferry and cross country returns) in the MIS.

A8.2. (AFMC) Total Scheduling Effectiveness

A8.2.1. **(AFMC) Purpose**. This section defines flying schedule deviations and provides formulas for computing Total Scheduling Effectiveness (TSE). A cornerstone of successful flying scheduling and execution is an understanding of how the schedule is executed versus how it was planned to be executed. These differences in scheduled versus actual events, are only recorded in the execution phase of the scheduling process and are called deviations. Deviation data must be recorded so that follow-up analysis can identify appropriate corrective actions, if any. Deviation data recording and analysis is the beginning of the process that will, in the end, improve unit's flying operations. The unit is responsible for documenting deviations to the flying schedule and determining the cause for each deviation. Deviations must be coordinated with the appropriate agency before being assigned to a specific category. Schedule deviations that result from a sequence of events will be assigned a primary cause. A determination of the primary cause will be made by the parties involved to arrive at a unit position. The Operations representative and the AMU/AMXS MS will monitor deviations to ensure they meet the criteria in this publication. When conflicts arise, leadership of involved units will resolve them at the lowest level. All deviations will be recorded as described in this publication. Although deviations are a key indicator with regards to scheduling effectiveness, they are sometimes necessary to meet dynamic mission sets that cannot be predicted, such as some flight test activities. Although every attempt will be made to properly schedule and reduce deviations, this metric must be viewed in conjunction with additional mission execution metrics to allow a more comprehensive assessment of maintenance effectiveness.

A8.2.2. **(AFMC) Requirements.** Total scheduling effectiveness computation and deviation recording are required for all AFMC assigned aircraft. Reporting procedures are contained in para 2.5.

A8.2.3. **(AFMC) Deviations.**

A8.2.3.1. **(AFMC)** Deviations apply to the respective test wing's final/approved daily flying schedule. Any change to the approved daily flying schedule after 1600 the day prior will be recorded as a deviation. Multiple deviations will not be recorded against a single line entry except for (a) additions that air abort, (b) additions that cancel or ground abort, (c) added sorties that take-off late, and (d) late take-offs that air abort; however, all deviations will be recorded. The AFTO Form 781, **ARMS Aircrew/Mission Flight Data Document** is the official source document for takeoff and landing data. For **all deviations**, the person recording the deviations in the MIS will provide a detailed explanation in the remarks section and a Job Control Number/Event ID in IMDS screen 350, if applicable. Schedule deviations fall into one of the following categories:

A8.2.3.2. **(AFMC) Ground Deviations.** Ground deviations are events occurring before aircraft takeoff or scheduled ground test. All ground deviations are recorded and used in total scheduling effectiveness calculations unless otherwise noted. FCF and OCF whose primary purpose is to perform maintenance checks and sorties originating off-station

without home-unit support will be considered "flown as scheduled‖ without recording deviations with the exception of aborts. Specific ground deviations are:

A8.2.3.2.1. **(AFMC) Addition (AD).** An aircraft or event (including both sortie and ground test) added to the approved flying schedule. Will be recorded against the agency (OP, MX, HQ, Test Agency, etc.) requesting the additional sortie or aircraft.

A8.2.3.2.2. **(AFMC) Cancellation (CX).** A sortie or ground-test event that is removed from the printed schedule for any reason before crew ready time. Cancellations occur when it is determined the originally scheduled mission cannot be met. For training sorties, if the sortie can launch and recover during the squadron's flying window and perform its original mission with the original crew, a cancellation is not recorded. If any sortie does not launch within the late takeoff criteria, a late takeoff is recorded. Any cancellations will be recorded against the agency (OP, MX, HQ, Test Agency, etc.) that is responsible for the cancellation.

A8.2.3.2.3. **(AFMC) Early Takeoff (ET).** An early take An early takeoff is a scheduled sortie launching more than 30 minutes prior to the published takeoff time.

A8.2.3.2.4. **(AFMC) Ground Abort (GA).** A ground abort is an event, after crew show, which prevents a ―crew ready aircraft on a scheduled or added sortie event from becoming airborne. Ground aborts will be recorded against the responsible agency or condition that caused the abort. Ground aborts are categorized as maintenance (GAA/GAB/GAC), operations, higher headquarters, weather, sympathy, project, other, etc.

A8.2.3.2.5. **(AFMC) Late Takeoff (LT).** A late takeoff occurs when a scheduled sortie becomes airborne more than 30 minutes after the scheduled takeoff time.

A8.2.3.2.6. **(AFMC) Spare (SP).** A spare is a designated aircraft on the printed schedule to be used in case a scheduled aircraft cannot fly its scheduled sortie. Spares can include aircraft that have canceled, aborted, flown earlier or an aircraft released after FCF/OCF. The aircraft production supervisor will manage scheduling and use of spare aircraft. Do not count printed spares flown in scheduled lines as deviations when computing TSE. Spare aircraft requirements are based on projected test mission needs. The following factors are used to determine spares and are not hard limits but guidelines, and as such, it is up to the AMU to actually schedule what it can support.

A8.2.3.2.6.1. **(AFMC)** The spare requirements may be canceled (when deviations are not used for computing TSE) if test requirements are accomplished/met.

A8.2.3.2.6.2. **(AFMC)** Additional spares are authorized to support HHQ taskings and special missions (if required by tasking).

A8.2.3.2.7. **(AFMC) Interchange/Tail Number Swap (TS).** Interchanges are changes to the printed flying schedule involving aircraft tail numbers printed on the flying schedule. Interchanges may be used to prevent reconfigurations and unnecessary expenditures of man-hours, or to replace a printed tail number when that aircraft will not be mission capable in time to accomplish the flight. Every effort is made to make the aircraft interchanges at the daily maintenance production meeting

the day prior to the aircraft scheduled flight and entered on the AF Form 2407. All interchanges made at the daily production meeting are entered on an AF Form 2407 for audit and analysis purposes. Interchanges between aircraft on the flying schedule, including FCF/OCF flown, will not be recorded as deviations. Interchange procedures do not apply to aircraft not on the flying schedule. Interchanges include the following:

A8.2.3.2.7.1. **(AFMC)** Changing aircraft in printed line numbers with printed spare aircraft.

A8.2.3.2.7.2. **(AFMC)** Changing aircraft in printed line numbers to different printed line numbers (tail number swap).

A8.2.3.2.7.3. **(AFMC)** Changing aircraft not on the printed schedule that have flown that day, with aircraft on the printed schedule.

A8.2.3.2.7.4. **(AFMC)** Interchanges may be made up to the crew ready time. The MOC must be notified of all interchanges for proper coordination with affected work centers. Once crew ready time has passed, normal deviation recording will apply. Interchanges made after the daily maintenance meeting and prior to the first crew-ready time require coordination for support from agencies outside the flying and maintenance squadron. Record all interchanges in the MIS. Do not count Interchanges/Tail Number Swaps as deviations when computing TSE.

A8.2.3.3. **(AFMC)** Air Deviations. Air deviations are events occurring after takeoff. They are recorded in the MIS, but are not included in total scheduling effectiveness calculations. Air deviations fall into the following categories:

A8.2.3.3.1. **(AFMC) Air Abort (AA).** An aircraft/sortie that cannot complete its primary or alternate mission for any reason. Air aborts are considered a sortie flown when reporting total sorties flown. Air aborts will be recorded against the agency or condition that caused the aborted mission. An air abort will not be recorded when malfunctions occur during the "Before Takeoff Checklist" portion of helicopter sorties. Air aborts caused by specific test mission will not be counted in abort rate computations. **NOTE:** Effective sortie decisions will be made by operations.

A8.2.3.3.2. **(AFMC) Air Abort, IFE (AI).** An air aborted aircraft/sortie with a situation resulting in an in-flight emergency declared by the aircrew.

A8.2.3.3.3. **(AFMC) IFE (FE).** An aircraft/sortie with a situation resulting in an in-flight emergency declared by the aircrew after the mission is accomplished.

A8.2.3.3.4. **(AFMC) Late Landing (LL).** An aircraft/sortie landing more than 15 minutes after the scheduled landing time. If the sortie originated on time, record any subsequent late takeoff or cancellation against the agency that caused the late landing. If the extended sortie did not originate on time, record any subsequent sortie deviation against the agency that caused the original delay. Late landings are not included in TSE calculations.

A8.2.3.3.5. **(AFMC) Early Landing (EL).** An early landing is an aircraft/sortie landing more than 30 minutes before the scheduled landing time. Early Landing deviations are not used when computing TSE.

Table A8.1. Common Total Scheduling Effectiveness (TSE) Deviation Determination Matrix.

Event	Is the deviation		Remarks
	Recorded in IMDS/MIS?	Calculated in TSE?	
Pen-and-Ink changes to the schedule are made on an AF Form 2407 (IAW Chapter 15)	No	No	Pen-and-Ink changes are not deviations and are considered part of the printed schedule. See Chapter 15
Take-off or landing time is changed after approved Pen-and-Ink submissions via AF Form 2407	Yes	Yes	See paragraphs in Chapter 15. Calculation in TSE is determined by late and early criteria
Aircraft configuration is changed after approved Pen-and-Ink submissions via AF Form 2407	No	No	These changes will be tracked locally to prevent reoccurrence and get a true picture of the total scheduling turmoil.
A sortie is added to the flying schedule (excluding OCFs/FCFs, XC return)	Yes	Yes	
A sortie is added for an OCF/FCF/OCF/FCF "Chase"	No	No	These are considered flown as scheduled.
A sortie is canceled	Yes	Yes	Once the decision is made to cancel the sortie, it is a cancel. If a decision is made after the cancel to go ahead and fly the sortie, it becomes an added line.
A sortie is determined to be non-effective	No	No	Not a deviation. The determination is made by operations and has no bearing on TSE.
A take-off is determined to be late	Yes	Yes	

A take-off is determined to be early	Yes	Yes	
A landing is determined to be early or late	Yes	No	A late landing may result in a late take-off on a subsequent sortie.
During a surge, more sorties are flown than were printed and the statement “Sortie Surge” is NOT printed in the remarks section of the affected day’s flying schedule	Yes	Yes	Sorties printed in the weekly schedule will be flown as printed. Additional sorties not printed will be considered added lines.
During a surge, more sorties are flown than were printed and the weekly schedule contains “Sortie Surge” in the remarks section of the affected day	No	No	During planned and printed surges and combat sortie generations, additional lines are considered flown as scheduled.
During a surge, an aircraft turn sortie takes off early or late	No	No	Units should track late take-offs of turn sorties locally during surges to prevent reoccurrence. Late take-offs are recorded for surge first go sorties.
Maintenance is performed during a stop in a continuation sortie and the mission continues	Yes	Yes	An “add” is recorded for the subsequent sortie. Be sure the added line is designated as a continuation sortie to prevent further deviations for other scheduled stops.
A sortie is added to the schedule for weather attrition	Yes	No	
A sortie is canceled at any time due to weather	Yes	Yes	Prior to crew show it is a cancel, after crew show, it is a weather abort.
A spare aircraft printed on the flying schedule is used in a printed line.	Yes	No	

An aircraft in the printed schedule is swapped with an aircraft in another printed line.	Yes	No	
An aircraft not printed in the flying schedule is used in a printed line. (excluding aircraft already flown that day such as OCF/FCF, X-Country returns)	Yes	Yes	One deviation is recorded for the added aircraft. The result is the same as adding an aircraft as a spare, then tail swapping it into a printed line.
An aircraft not on the printed flying schedule is added as a spare.	No	Yes	Counts as a TSE deviation even if the aircraft does not fly. This has to be manually done by MMA because there is no required IMDS/MIS transaction that
An aircraft not printed in the flying schedule that has flown that day is flown/used in a printed line	Yes	No	Examples include previously flown FCF/OCF aircraft as well as cross country returns.
A ground abort is replaced with a another aircraft/spare on the printed schedule	Yes	No	Both the ground abort and spare action will be recorded in IMDS/MIS. If the replacement aircraft takes-off on time, no deviation is recorded.
A printed aircraft ground aborts and is replaced with an aircraft NOT on the printed schedule and the second aircraft also ground aborts and the original aircraft is fixed, takes off late, and flies the sortie.	Yes	Yes	The original aircraft is recorded as a ground abort and late take-off. The second aircraft is recorded as an “add” and a ground abort. Ground aborts in themselves are not deviations calculated in the TSE rate, but are calculated in the ground abort rate.

A8.2.4. **(AFMC) Deviation Causes.** Deviations will be assigned a primary cause. The WG/CC will resolve questions concerning assigning deviations between maintenance and operations. The OS/CC, AMXS/CC, and LRS/CC will resolve questions concerning deviations involving supply and POL. Deviations will be assigned one of the following causes:

A8.2.4.1. **(AFMC) Maintenance (MT).** Deviations resulting from aircraft discrepancies, unscheduled maintenance, or for actions taken for maintenance consideration. NOTE: Maintenance-related ground aborts will use one of the —GAx cause codes (See Para 5.2.4).

A8.2.4.2. **(AFMC) Operations (OP).** Deviations resulting from operations/aircrew actions, mission changes causing an early/late takeoff, or cancellation including substitution/aircrew illness, and over- stressing the aircraft. OP are also deviations resulting from unit controlled operations factors including those caused by mission/load planning, life support, intelligence, base operations, and passengers.

A8.2.4.3. **(AFMC) Project/Test Agency (PJ).** Deviations to flight that result from rescheduling, reconfiguration, test item malfunctions, failures, or necessary adjustments to equipment undergoing tests or evaluations associated with Operational Testing and Evaluation (OT&E). Development Testing and Evaluation (DT&E), or Initial Operational Testing and Evaluation (IOT&E).

A8.2.4.4. **(AFMC) Supply (SU).** Deviations resulting from a Partially Mission Capable Supply (PMCS) or Not Mission Capable Supply (NMCS) condition or for late Supply or Petroleum Oil Lubricant (POL) delivery. Contract Logistics Support (CLS) items are included. In accordance with local MOAs/operating instructions. NOTE: The actual time required for installation will be considered.

A8.2.4.5. **(AFMC) Higher Headquarters (HHQ).** Deviations resulting from a higher headquarters tasking including closing of low level routes/ranges or external customer driven mission change. When an aircraft that was scheduled for a higher headquarters directed off-base mission is replaced by a spare refer to paragraphs 2.3.2.6. and 2.3.2.7. for unit options.

A8.2.4.6. **(AFMC) Weather (WX).** Deviations for aircraft which takeoff early, late, abort, or are added or canceled due to weather conditions. For example, if an aircraft taxied to the end of runway and the wing commander cancels all flying due to weather, the aircraft is a weather abort. Sorties/Aircraft cancelled prior to crew show are weather cancels.

A8.2.4.7. **(AFMC) Sympathy (SY).** Deviations occurring when an event of two or more aircraft, under the command of a flight leader or instructor pilot are canceled, aborted, or late due to a cancellation, abort, or delay of one of the aircraft in the flight or a supporting flight. Events, which are to replace sympathy aborts or cancellations on the same day, will be recorded as sympathy additions. Events lost caused by the aircraft's scheduled mated tanker/receiver/mission event will be recorded as sympathy. Examples of mission events are: loss of release times, Airborne Warning and Control System (AWACS) support, Minimum Interval Take Off (MITO) causing takeoff delay or cancellation, or for another unit's or command's support should be coded as sympathy

deviations. NOTE: Deviations caused by aircraft/missions earlier scheduled lines will be assigned to the cause of the earlier deviation, not sympathy (SY).

A8.2.4.8. **(AFMC) Air Traffic Control (AT).** Deviations resulting from air traffic control problems (for example, flight clearance delays, tower communication failure, conflicting air traffic, runway change, or runway closure).

A8.2.4.9. **(AFMC) Contractor Support (CS).** A deviation resulting from a test or system contractor not being able to support the mission in accordance with the requirements of the contract.

A8.2.4.10. **(AFMC) Range Availability (RN).** A deviation resulting from the Range not being available.

A8.2.4.11. **(AFMC) Other (OT).** Deviations resulting from unusual circumstances not covered by other causes listed. OT may include:

A8.2.4.11.1. **(AFMC)** Unusual circumstances (e.g.., bird strikes, damage during air refueling, unscheduled exercises) may use this code.

A8.2.4.11.2. **(AFMC)** Equipment, non-AFMC. Deviations caused by National Airborne Operations Center NAOC) or Air Intelligence Agency (AIA), and other non-AFMC support and equipment.

A8.2.4.11.3. **(AFMC)** When an aircraft is off station and cannot return for its scheduled sortie/mission, a deviation will be recorded for the reasons the aircraft was unable to return. The reasons will be specific (maintenance, operations, weather, etc.). A printed spare aircraft may be used for any sorties scheduled for the aircraft that did not return.

A8.2.4.11.4. **(AFMC)** Ferry Sorties. Ferry sortie requirement too late for inclusion in the flying schedule will be documented as a new line for the day and “flown as scheduled”.

A8.2.4.11.5. **(AFMC)** Hot Spare Aircraft. Properly configured aerospace vehicle that is listed on the flying schedule as a spare with a specific takeoff time and not utilized. If not used will be recorded as a cancel other.

A8.2.4.11.6. **(AFMC)** Airborne Instrumentation.

A8.2.4.11.7. **(AFMC)** Laboratories.

A8.2.4.12. **(AFMC) Exercise, Higher Headquarters (EXH).** Deviations resulting from higher headquarters directed exercises, including alarm/force protection conditions. Deviations in this category will not be included in TSE calculations.

A8.2.4.13. **(AFMC) Exercise, Local (EXL).** Deviations resulting from wing/unit directed exercises, including alarm/force protection conditions. Deviations in this category will not be included in TSE calculations.

A8.2.4.14. **(AFMC) Special Instrumentation (SI).** Deviations that directly result from issues with SI support.

A8.2.5. **(AFMC) Rules for Reporting Schedule Deviations.** The unit is responsible for documenting deviations to the weekly flying schedule and determining the cause for each

deviation. Deviations must be coordinated with the appropriate agency before being assigned to a specific category. The operations representative and AMU/AMXS MS will monitor deviations to make sure they meet the criteria in this instruction. When disparities exist, they will be referred to the OG and MXG CCs or designated representative for resolution. Schedule deviations that result from a sequence of events will be assigned a primary cause. A determination of the primary cause will be decided upon by all parties involved to arrive at a unit position.

A8.2.6. **(AFMC) Scheduling Exceptions.**

A8.2.6.1. **(AFMC) Adverse Weather.** Units/flying squadron(s) may add sorties to the flying schedule to make up for weather losses. Sorties will only be added to the schedule when the planned weather attrition for the month has been exceeded for that month. The number of sorties added will not exceed the difference between the planned weather attrition and actual weather losses. Weather attrition will be computed by the MMA Section. (Example: Planned weather attrition for the month equals 30 sorties. On the 20th of the month 40 sorties are lost. Ten non-chargeable sorties may be added. The maintenance schedule and the ability of maintenance to support the additional requirements must be carefully considered before adding sorties in accordance with paragraph 15.5.6.3.8.1.

A8.2.6.2. **(AFMC) Unscheduled Tasking.** When a unit is tasked with an unscheduled higher headquarters tasking or self-initiated tasking (mobility exercises or weather evacuations), or other services tasking which significantly impacts the flying schedule, the printed schedule may be revised or deleted from the MIS by AMU PS&D and replaced with a new schedule without recording deviations. For weather evacuations, the schedule will be cancelled in the MIS, not deleted, so the data is available for historical attrition. **NOTE: Local unscheduled tasking will not be used solely to recoup sortie losses.**

A8.2.6.2.1. **(AFMC)** If the schedule is revised or canceled and reprinted, the following procedures will be used:

A8.2.6.2.1.1. **(AFMC)** Follow normal deviation reporting procedures once the revised/reprinted schedule is finalized. The revised schedule will be finalized a minimum of 2 hours before the first scheduled launch.

A8.2.6.2.1.2. **(AFMC)** Once the tasking terminates, the original schedule may be used or it may be revised or reprinted for the tasking period, as required. Normal deviation reporting is to be used once the revised or reprinted schedule is finalized.

A8.2.6.2.1.3. **(AFMC)** Normal deviation reporting procedures will be followed after a takeoff time is established to a tasking by higher headquarters or other services.

A8.2.7. **(AFMC) Utilization Reporting.** All aircraft flying hours are required to be reported in REMIS in accordance with AFI 21-103. This requirement is not waived for contractor-maintained aircraft.

A8.2.8. **(AFMC) Scheduling Effectiveness Computation**

A8.2.8.1. **(AFMC) TSE Rate.** Similar to the Flying Schedule Effectiveness for the CAF, TSE is a leading indicator and is a measure of how well the unit planned and executed the weekly flying and ground test event schedule. TSE is derived by comparing each day's deviations to the flying and ground test schedule. Deviations that decrease the TSE from 100 percent include: scheduled sorties/ground test events not accomplished because of maintenance, supply, operations, weather, HHQ, air traffic control, sympathy, or other reasons; scheduled events that actually start more than 30 minutes prior to scheduled start time; scheduled events that begin more than 30 minutes after their scheduled start time and events that are added to the schedule. Disruptions to the flying or ground test schedule, or constant configuration changes to test assets can cause turmoil on the flightline, send a ripple effect throughout other agencies, and adversely impact scheduled maintenance actions.

Table A8.2. Test Scheduling Effectiveness Computation

TSE (%) = Total Ground and Sortie Events Scheduled – Total Deviations x 100
Total Ground and Sortie Events Scheduled

A8.2.9. **(AFMC) Maintenance Deviation Rate (MX Dev).** Although all deviations to the test schedule are counted in the TSE calculation, the Maintenance Deviation Rate represents deviations to the flying/ground test schedule that are, for the most part, are within the maintenance community's control. All maintenance late take offs, ground aborts, cancellations, and maintenance additions are counted towards the rate. Although all deviations from the published schedule can cause turmoil on the flightline, maintenance supervision should focus on eliminating or minimizing schedule deviations due to maintenance.

Table A8.3. Maintenance Deviation Rate Computation.

Maint Dev Rate (%) = Total Maintenance Deviations x 100
Total Ground and Sortie Events Scheduled

A8.3. (AFMC) Maintenance Scheduling Effectiveness (MSE).

A8.3.1. **(AFMC) Purpose.** This chapter provides a means to measure maintenance management effectiveness, reflected by how well the maintenance schedule is carried out. Maintenance efforts should be directed toward the timely accomplishment of all scheduled maintenance actions. The AFMC Maintenance Scheduling Effectiveness (MSE) goal is 95%.

A8.3.2. **(AFMC) Computations.**

A8.3.2.1. **(AFMC)** Scheduled maintenance events and respective weighted factor points in Table 3.1 are used to compute the MSE rate. Credit is received for actions completed on, or prior to, the scheduled date as printed in the weekly schedule. The MIS database and the published schedule will be used to determine whether or not the maintenance actions were completed on-time. **EXCEPTION:** Phase/PE and ISO inspection, and all

maintenance requiring more than 24 work hours to complete will be measured against the scheduled start time/date.

A8.3.2.2. **(AFMC)** The MXG/CC may select additional areas (such as AGE, AIS, AME, etc.) for local scheduling effectiveness tracking. The unit will establish standards for these programs and develop a computation table in the format of Table 3.1 This data will not be included in aircraft maintenance scheduling effectiveness when reported to higher headquarters.

A8.3.2.3. **(AFMC)** MOF PS&D will record maintenance scheduling deviations and forward the computations to MOF maintenance analysis weekly for publications in the monthly maintenance summary.

A8.3.2.4. **(AFMC)** When a unit is tasked with a test acceleration, quick reaction test, unscheduled tasking, unannounced exercise/real world contingency, or higher headquarters exercise that significantly impacts the printed weekly maintenance schedule, the plan may be revised or reprinted without incurring deviations. Normal deviation reporting procedures will be followed once the revised or reprinted plan is finalized. The unaccomplished portion of the maintenance schedule that was revised will not be included in the scheduling effectiveness formula.

A8.3.2.5. **(AFMC)** Establish local written procedures to ensure coordination of changed/cancelled/added scheduled maintenance.

A8.3.2.6. **(AFMC)** Maintenance Scheduling Deviation Categories.

A8.3.2.6.1. **(AFMC) Maintenance (MT).** Actions canceled or not completed as a result of adding aircraft to the flying schedule, mismanagement, or a lack of manpower or equipment.

A8.3.2.6.2. **(AFMC) Higher headquarters (HHQ).** Actions canceled or not completed as a result of higher headquarters tasking from outside of the wing.

A8.3.2.6.3. **(AFMC) Weather (WX).** Actions canceled or not completed as a result of weather conditions.

A8.3.2.6.4. **(AFMC) Supply (SU).** Actions canceled or not completed as a result of verified parts back order condition.

A8.3.2.6.5. **(AFMC) Other (OT).** Actions canceled or not completed as a result of impounded aircraft (after the weekly schedule is published), major maintenance where technical data restrictions do not allow the scheduled maintenance, or aircraft is off-base and unable to return.

Table A8.4. Maintenance Scheduling Effectiveness Computation.

SCHEDULED EVENT	A WEIGHTED POINTS	B NUMBER OF EVENTS	C POSSIBLE POINTS (A	D COMPLETED SCHEDULED	E POINTS EARNED (A
Periodic/Isochronal/ Phase Inspections	5				
Home Station Checks/ Hourly Post Flights	5				
Engine Changes	5				
Time Changes	4				
TCTOs	4				
Corrosion Control/ Paint	4				
Special Inspections	3				
Document Reviews	2				
Delayed Discrepancies	3				
Total Points Possible:		Total Points Earned:			Total
O&M Points Possible:		Total O&M Points Earned:			

A8.4. (AFMC) TDY/Deployed Sorties

A8.4.1. **(AFMC) Purpose.** This chapter establishes rules and procedures used in planning, executing, evaluating, and reporting of unit flying and maintenance schedules at deployed/TDY locations where unit maintenance is provided. Sorties flown at deployed/TDY locations where no parent unit maintenance is provided are considered off-station sorties. If parent unit support is deployed, this is considered the same as home station support and normal deviation reporting applies. Limited launch support is not considered parent unit maintenance.

A8.4.2. **(AFMC)** General. Normal deviation reporting applies to deployed operations except as noted in this chapter. Data from deployed operations will be transmitted or forwarded back to home station.

A8.4.3. **(AFMC)** Scheduling. In addition to the procedures established at home station for scheduling and reporting, deployed units will use the following procedures when developing a flying schedule and reporting deviations: Separate block(s) of sortie sequence numbers will be assigned for deployment/TDY location(s).

A8.4.3.1. **(AFMC)** Additions and cancellations at deployed/TDY locations, which are required to accomplish specific test and aircrew training requirements and make optimum use of available range time, are considered flown as scheduled. This does not relieve operations and maintenance from developing a viable and realistic flying schedule at the deployed location. The primary purpose of this flexibility is to allow the unit to make up non-effective sorties to ensure accomplishment of the training plan. Procedures for changing the flying schedule in Chapter 2 apply to deployment/TDY location flying and maintenance schedules. Additions and cancellations caused by ineffective planning are recorded.

A8.4.3.2. **(AFMC)** Sorties scheduled at other than home station are not required to be input into the home station's operations scheduling system to be counted as scheduled sorties. Once tail numbers are plugged in at the daily meeting; this becomes the firm schedule‖ and deviations are reported from that point on.

A8.4.4. **(AFMC)** Deployed/TDY Daily Activity Report. Required information for deployed/TDY AFMC units will be transmitted to home station IAW applicable unit deployment/TDY plans.

A8.4.5. **(AFMC)** Off-Station Sorties. Those sorties flown from other than home station and parent unit maintenance are not provided (e.g., cross-country sorties). When an aircraft is off-station and cannot return to home station for its scheduled sortie, a deviation will be recorded for the reason the aircraft was unable to return. The reasons will be specific, i.e., maintenance, operations, weather, etc. NOTE: If the off-station aircraft can fly its scheduled mission from its location, no deviation is recorded.

A8.5. (AFMC) Scheduling Reporting Procedures

A8.5.1. **(AFMC) Purpose.** This chapter provides instructions on flying scheduling reporting procedures. The flying schedule must be loaded into the MIS to track scheduling and deviation data. Once loaded, the mission schedule or proposed maintenance plan background programs will provide base-level retrieval of flying and maintenance schedule information, and will complete higher headquarters reporting of aircraft utilization.

A8.5.2. **(AFMC) Responsibilities**.

A8.5.2.1. **(AFMC)** The MXG/CC will ensure procedures are established to verify the accuracy of all scheduling and deviation data.

A8.5.2.2. **(AFMC)** The OG and MXG CCs or their designated group representative will publish the flying schedule IAW Chapter 2 of this publication on AF Forms 2400 series or computer generated forms. Units will load changes to the flying schedule into the MIS by 1600L one workday prior to date of execution.

A8.5.2.3. **(AFMC)** The MOC will review the previous day's activity reports to ensure accurate deviation accounting and reporting. The MOC will record additions, cancellations before crew show, interchanges, and the use of spare aircraft as deviations occur. The debrief section will record, late and early takeoffs and landing aborts, and in-flight emergency incidents during the automated debriefing process. The MOC will coordinate with the squadron/AMU on all changes and deviations to the flying schedule to assist in determining correct debriefing status codes. The MOC will provide sortie

sequence numbers and sortie numbers to the squadron/AMU for all additions and cross-country sorties. Sortie numbers assigned to a specific tail number must be in sequential order (for example sortie number 101 must be used on a specific tail number before sortie number 102). Unique sortie sequence numbers will be developed for deployed sorties.

A8.5.2.4. **(AFMC)** Cause Code. Enter one of the following codes to indicate the reason for a deviation or the agency, which caused a deviation.

Table A8.5. Code Function.

ATx . . . . . Air Traffic
EXH . . . . . .Exercise, HHQ
EXL . . . . . .Exercise, Local
GAA . . . . . Ground Abort, before engine start, maintenance
GAB . . . . . .Ground Abort, after engine start, before taxi, maintenance
GAC . . . . . .Ground Abort, after taxi, maintenance
GAT. . . . . Ground Abort, test induced
HQT . . . . . .Higher Headquarters, MAJCOM (non-exercise)
HQN . . . . . Higher Headquarters, NAF (non-exercise)
HQP . . . . . .Higher Headquarters, other (non-exercise)
MTx . . . . . .Maintenance
OPx . . . . . Operations
SIx . . . . . .Special Instrumentation
SUx . . . . . .Supply
SYx . . . . . .Sympathy
RNx. . . . . Range
WXx . . . . . Weather
OTx . . . . . .Other
PJx……...Project/Test Agency
CSx. . . . . Contractor Support

A8.6. (AFMC) Attrition And Spare Factors

A8.6.1. **(AFMC) Attrition**. Attrition factors represent historical percentage of scheduled sorties lost to causes outside unit control. Maintenance and operations schedulers add attrition sorties to monthly contracts to ensure mission goals are met. Operations and maintenance personnel must ensure the contract includes flexibility to accept attrition requirements during acquisition planning. Units may make a conscious decision, with MXG/CC approval, to use different attrition factors from statistical attrition rates calculated by MMA.

A8.6.1.1. **(AFMC)** Attrition sorties are not substitutes for capability shortfalls, they are additive to the contract to ensure mission goals are met. The monthly flying and maintenance plan will clearly identify attrition sorties for management purposes. If attrition is less or more than planned, adjustments to the weekly flying and maintenance schedule will be made to prevent over-extending maintenance or exceeding the unit's contract. A sortie lost will normally be flown in the same month the loss occurred. If at the end of a quarter combined losses exceed attrition figures, the OG and MXG CCs will negotiate a resolution to the shortfall.

A8.6.1.2. **(AFMC)** The factors used to compute attrition will be MXx, OPx, SUx, WXx, ATx, SYx, OTx, EXH, EXL, and HQx sortie losses. Attrition factors are used to compensate for non-unit controlled factors. Spares are used to compensate for unit controlled factors. Attrition and spare factors will be computed for and applied to each flying squadron/AMU. Monthly statistical attrition anomalies should be identified, documented and factored out of attrition calculations if necessary. MMA will compute attrition factors monthly for each OS/AMU and provide the results to MOF PS&D for dissemination to the OS and AMU PS&D schedulers. During the annual first look, MMA will provide attrition factors by month for the entire next fiscal year. NOTE: Attrition and spare factors need not be developed for test and evaluation (CB) possession identifier coded aircraft.

A8.6.2. **(AFMC)** Attrition Factor Application.

A8.6.2.1. **(AFMC)** Attrition computation is based on unit historical data from previous similar flying months. For example, when computing attrition for Jan 12, use historical data for Jan 11, Jan 10, Jan 09, Jan 08, Jan 07, etc. Use as much historical data as required ensuring seasonal variations are considered to determine a basis for attrition. When computing attrition, use the total sorties lost in a particular category. Do not use the difference between the sorties lost and those sorties added to make up for the losses. The formula for computing the attrition factor is Historical Sorties Lost divided by Historical Sorties Scheduled.

Table A8.6. Attrition Computation Example.

Sortie Losses:
MX Sortie Losses .02
OP Sortie Losses .01 SU Sortie Losses .01
OT Sortie Losses .01
AT Sortie Losses .01
EXH Sortie Losses .01
EXL Sortie Losses .01
HQ Sortie Losses .01
Sortie loss attrition factor: 0.09
WX Sortie Losses: .03
Total Attrition factor: .12
Overall attrition factor is: .12 or 12 %

Table A8.7. Sample Application of Total Attrition Factor.

Sorties Required 1,000
Subtract attrition factor from 1 (1-.12)=0.88
Divide 1,000 by 0.88
Required sorties to schedule 1,136.36 , round up to 1,137.
Based on historical attrition of 12%, the unit can expect to lose 137 sorties to meet the required 1,000 sorties.

A8.6.3. **(AFMC) Spares**. The spare requirements will not exceed 20 percent (30 percent for training units owning TF coded aircraft) of aircraft committed to the flying schedule, rounded up to the next whole aircraft. Note: During Planned Sortie Surges the MXG/CC determines the amount of spares that will be committed. However, leadership must consider health of the fleet when authorizing scheduled spares above 40 percent. Note: Units should

be cognizant of their historical break rates and spare constraints when scheduling surges. Spares can be quickly used during surges and once spares are exhausted the capability to meet surge goals is severely limited.

A8.6.3.1. **(AFMC)** MMA computes annual spare aircraft requirements by month, using historical aircraft first sortie logistics losses and provides this information to the MO PS&D for use in computing spare aircraft requirements. Spare computation is based on unit historical data from previous similar flying months. For example, when computing spares for Jan 06, use historical data for Jan 05, Jan 04, Jan 03, Jan 02, Jan 01, etc. Use a minimum of 4 years historical data to ensure seasonal variations are included to determine a basis. The formula for computing spare factors is Historical First Sortie Deletions/Cancellation divided by historical first sorties scheduled.

A8.6.3.2. **(AFMC)** A first sortie is defined as a sortie flown by an aircraft that has not previously flown for the day (0001-2400 flying period). For example, if 8 aircraft are committed to the schedule and there are 14 total sorties scheduled, the first 8 sortie line numbers (i.e., 101-108) should reflect all 8 committed aircraft tail numbers before they are re-scheduled (turned) against the last 6 (i.e., 109-114). This would be reflected as an 8 x 6 and will not be reflected as a 6 x 8 because of scheduled take-off times. Additionally lines are listed in sequential order with take-off times that reflect this order. Operations may define first sorties or turns by mission profile, take-off times, but for the purposes of this instruction, the sortie turn pattern is defined against initial aircraft flown and scheduled turns of the same or a portion of the same aircraft.

Table A8.8. Sample Application of Spare Factors.

1st Sortie Maintenance Cancellations	.10
1st Sortie Supply Cancellations	.03
1st Sortie Ground Aborts	.05
Spare factor	.18 or 18%
A sample figure of 12 first sorties is used in the following computation: Spare aircraft required equals 1st sorties scheduled times the spare factor and rounded up to the next whole number. 12 x .18 = 2.16 Spares Required is 3	

A8.6.3.3. **(AFMC)** The computed spare requirement may be adjusted to compensate for multiple configurations and syllabus constraints. When additional spares are added for multiple configurations, units will not exceed one spare per configuration.

A8.6.3.4. **(AFMC)** Additional spares are authorized to support higher headquarters taskings and special missions (if required by the tasking).

A8.6.3.5. **(AFMC)** At least one spare aircraft is authorized per MDS for each flying day.

A8.6.3.6. **(AFMC)** Unmanned Aerial Systems training missions are authorized an additional spare to support increased aircrew training requirements due to crew size ratio.

Attachment 9 (Added-AFMC)

AFMC AGE ANNUAL INVENTORY TEMPLATE

Figure A9.1. AFMC AGE Annual Inventory Template.

MAJCOM Installation	TYPE / MODEL	MASTER NSN	ASGN NSN	SRD	REQUISITION NUMBER	AS /ASC	EQUIP ACCT	DETAIL NBR	FIELD NBR	SER NO	USE CODE	REMARKS

Attachment 10 (Added-AFMC)

AFMC TA COUNT

Figure A10.1. AFMC TA Count.

CY 15 TRANSIENT ALERT COUNT

ACFT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
F-15													
F-16													
A-10													
T-1													
F-22													
T-38													
T-6													
C-21													
C-12													
C-17													
C-5													
KC-10													
E-3													
C-130													
KC-135													
TOTAL													