

**BY ORDER OF THE COMMANDER
AIR FORCE DISTRICT OF
WASHINGTON**



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FORCE DISTRICT OF WASHINGTON
Supplement**

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Maintenance

**AIRCRAFT AND EQUIPMENT
MAINTENANCE MANAGEMENT**

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AFI 21-101, *Aircraft and Equipment Maintenance Management*, 26 July 2010 is supplemented as follows: Refer questions or recommended changes about this publication to the Office of Primary Responsibility (OPR) using the AF IMT 847, *Recommendation for Change of Publication*, through MAJCOM publications/forms managers to AFDW/A4R/M, 1535 Command Drive, Suite CD310, JB Andrews/NAF-W, MD, 20762. Deviations from the procedures described herein are prohibited without written approval from the OPR. These supplemental requirements apply to Air Force District of Washington units and contractors that operate and/or maintain aircraft assigned to or transit through AFDW installations. This publication does not apply to Air Force Reserve Command (AFRC) and Air National Guard (ANG) units. Ensure that all records created as a result of this supplement are maintained and disposed of in accordance with AFMAN 33-363, *Management of Records*, and the Air Force Records Disposition (RDS) located at <https://www.my.af.mil/afirms/afirms/afirms/rims.cfm>. See Attachment 1 for glossary references and supporting information.

SUMMARY OF CHANGES

(AFDW) This interim change moves the MXS/CC responsibilities from the 1 HS/CC to the 811 OSS/CC IAW AFI 21-101 AFDW Supplement.

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1.1. Because of the absence of an 11WG Maintenance Organization, MXG/CC and CD functions/responsibilities will be fulfilled by the 811 OG/CC and CD. The MXS/CC functions/responsibilities will be fulfilled by the 811 OSS/CC for helicopter operations. To the extent applicable, the functions/responsibilities normally performed by the MXG Superintendent, Operations Officer, Flight Commander, Flight Chief, Section NCOIC, Production Supervisor, and Expediter, will be performed by the contractor IAW the provisions of the maintenance contract.

1.5. Supervisory involvement and good maintenance discipline are key factors in preventing mishaps and ensuring safe reliable aircraft and equipment to support the mission. Technical Orders (TO), checklists, job guides, and Air Force/command instructions will be followed to ensure personnel safety and aircraft and equipment integrity. Maintenance leadership at all levels will review their roles and responsibilities in this instruction and ensure strict compliance with established written policies and procedures in their units.

1.9. Whenever directed to create an OI in this supplement, units may create an OI, publication, or supplement with the approval of the Functional Director/Commander.

1.10.1.1. For unit maintenance contracts, the Functional Director/Commander (FD/FC) is the designated focal point for all organizational, functional, and technical questions pertaining to each contract. AFDW focal point for contract and civil service aircraft and trainer maintenance programs is AFDW/A4M.

1.10.1.2. Measurement areas and standards of performance are contained in the applicable contract.

1.10.1.3. Refer to Chapter 18 of this instruction for further guidance on surveillance of aircraft maintenance contracts.

1.10.1.4. CLS maintenance does not need to send more than one person to recover an aircraft. No further approval is necessary.

1.10.1.5. Refer to Chapter 18 of this instruction for requirements and responsibilities of Contract Officers Technical Representative (COTR) who surveil aircraft maintenance contracts.

1.13.1. Cell phones, pagers, etc. used on the flight line or in maintenance work areas will only be used for official business. Cell phones will not be used while actively performing maintenance. During maintenance actions, cell phones and other electronic devices (e.g., PDAs, pagers) not required in the performance of maintenance, shall be turned off.

Placing cell phones or other electronic devices in the silent or vibrate mode does not satisfy this requirement. This restriction does not apply to personnel performing maintenance management duties (e.g., Pro Super, Expediter). Personnel will also comply with restrictions in TO 00-25-172, AFMAN 91-201, AFI 91-207, and AFI 31-218. Aircraft and equipment TOs and other command/base instructions may dictate additional restrictions.

2.8. Personnel performing on-equipment maintenance will not leave equipment or aircraft power energized when no longer needed to perform duties associated with the equipment. Aircraft will not be left unattended with power remaining on the aircraft.

2.14.1. **(Added)** Warning Tags will be documented on a Red X IAW TO 00-20-1.

2.14.2. **(Added)** The following information will be entered on the AF Form 1492.

2.14.2.1. **(Added)** Part A:

2.14.2.1.1. **(Added)** Tag number block: Enter applicable JCN. For multiple tags with the same JCN, use a 3 digit suffix (e.g., 001, 002, 003)

2.14.2.1.2. **(Added)** Date block: Current date YYYYMMDD.

2.14.2.1.3. **(Added)** Location block: Location of the tag (e.g., pilot's control wheel, flight engineer's circuit breaker (CB) panel #4).

2.14.2.1.4. **(Added)** Condition block: Brief description of the condition resulting in the circuit breaker/switch being tagged (e.g., Fuel System Maintenance in Progress. Do Not Apply External Power). Also included total number of tags (i.e., 1 of 4)

2.14.2.1.5. **(Added)** Signature block: Not Required.

2.14.2.1.6. **(Added)** Title block: Section performing work (e.g., Hydraulics, Electro-Environmental, Guidance and Control).

2.14.2.2. **(Added)** Part B:

2.14.2.2.1. **(Added)** Complete all blocks with the same information documented in Part A.

2.14.3. **(Added)** IMDS documentation of Warning Tag discrepancies will be linked to the original JCN via the WCE/WES option.

2.14.4. **(Added)** The reason for the Warning Tag entry will be indicated in the discrepancy block. The Warning Tag discrepancy will also include an accompanying "Warning Note." The entry of the Warning Note will follow documentation procedures outlined in TO 00-20-1. For example: (X Each) Warning Tag(s) (tag #(s)____) installed for removal/replacement of MLG selector valve. See page ____ item____ NOTE: DO NOT OPERATE LANDING GEAR.

2.14.5. **(Added)** Clearing the Warning Tag discrepancy will require only one authorized signature in the "inspected by" block and last name initial over the Red X symbol in the symbol column. Annotate the corrective action block with a statement such as: Warning tag(s) removed (IAW applicable technical data).

2.14.7. **(Added)** To reduce workload associated with documenting warning tags, units may use laminated warning tags.

3.4.1.61. As a minimum, maintenance analysis will perform monthly reviews for trends.

3.5.1. Contractor will designate a chairperson for the daily IHS scheduling meeting with the Operations Duty Officer (ODO). This meeting will normally be conducted prior to the first flight of the day.

3.5.1.1. The goal of the daily production and scheduling meeting is a coordinated maintenance plan and flying schedule for the next day. A member of Maintenance Operations is required to attend the daily production and scheduling meeting to ensure their involvement in the fleet management process. Shop chiefs, senior coordinators, and Pro Supers will normally remain engaged in production duties and do not normally attend the scheduling and production meeting. Review the following topics during the meeting:

3.5.1.1.3. **(Added)** Review MRT broke off-station status if available.

3.5.1.1.4. **(Added)** Coordinate the “go-to” aircraft for CANN actions in the event a CANN is required during off shifts.

3.8.25. Ensure key personnel (e.g., Pro Super, Expediter) are thoroughly familiar with local procedures designed to protect personnel and prevent further damage to aircraft, equipment, and other resources.

3.8.36. **(Added)** Maintenance operations will be aware of all aspects of ramp and parking area construction, to include line painting, and will work with the Programs & Resources Flight, MOC, and QA in verifying that all completed construction is correct before resuming use.

3.9. Contractors will assign responsibility to perform the functions as the HMXS HMU. OIC/Superintendent in addition to AMS responsibilities referred to in Chapter 4.

3.9.8. In addition:

3.9.8.1. **(Added)** Monitor and prioritize maintenance activities by reviewing aircraft discrepancies and work center tasking.

3.9.8.2. **(Added)** Ensure aircraft debriefing accurately reports discrepancies in the IMDS.

3.9.8.3. **(Added)** Ensure that aircraft status changes and job completions are reported to the ODO (or designated POC) and updated in the IMDS.

3.9.8.4. **(Added)** Within two hours ensure all closed discrepancies are updated with MDD.

3.9.8.5. **(Added)** Review appropriate automated supply products to ensure proper asset management.

3.9.8.6. **(Added)** Ensure IMDS reflects status of cannibalization actions on any CANN job.

- 3.9.8.7. **(Added)** Ensure MDD input is accurate IAW TO 00-20-2, *Maintenance Data Documentation*.
- 3.9.8.8. **(Added)** Monitor and update shop, work center, and master records. Advise the MOF MDSA section when individual work centers lack IMDS access and cannot perform those functions. MDSA section is responsible for granting access.
- 3.9.8.9. **(Added)** Monitor composite tool kit (CTK) and special tool requirements. Use of the IMDS for this purpose is optional.
- 3.9.28. Ensure personnel are prepared to assist and provide expertise in CDDAR situations. As a minimum, ensure personnel are trained on procedures for responding to more common incidents that would require CDDAR such as aircraft departing prepared surfaces and major fuel spills.
- 3.11. Production Superintendent (Pro Super) (or equivalent).
- 3.11.2.1. **(Added)** Verify aircraft status in the IMDS no less than once per shift. This includes all unit aircraft, regardless of location.
- 3.11.3.1. **(Added)** If an ER is signed as a black letter initial (zero discrepancies) the COTR office will be notified.
- 3.11.9.1. **(Added)** Maintain copies of the following in the Pro Super area: flying schedule, emergency action and functional checklists, base grid map with overlay, IPI listings, Minimum Essential Subsystem List (MESL), quick reference list (QRL) if applicable, and tracking device for aircraft status. Track the following information for each aircraft to include: aircraft serial number, location, priority, status and expected time in commission (ETIC), configuration, OAP condition codes, fuel load, munitions load if applicable, and remarks.
- 3.11.9.2. **(Added)** Pro super will immediately after flight review any pilot reported discrepancies against the MESL and determine with aircrew any change of status.
- 3.11.13.1. **(Added)** Review MICAP's status daily for accuracy.
- 3.11.15. **(Added)** Ensure QA W&B manager is notified when W&B update is necessary.
- 4.5.2. **(Added)** Ensure daily review of closed jobs to ensure accurate data entry. All discrepancies to IMDS will be corrected daily.
- 4.6. Units may combine Pro Super and flight line expediter duties, provided duties of both functions are performed. This individual will remain on the flightline while maintenance personnel are performing flight line maintenance or launching/recovering aircraft.
- 4.7.1.1. An approved Air Force or locally developed debrief form will be used when debriefs are conducted without using the IMDS or if the IMDS is unavailable. The completed debrief form, will remain on file for 90 days, and then destroyed.
- 4.7.1.1.1. **(Added)** A maintenance/flight crew debriefing will be conducted after all flights. Debriefs will be conducted by the Helicopter Branch debriefer or person designated by the Production Supervisor. IHS aircrew will be debriefed at the aircraft within 15 minutes after landing. Debrief will normally be performed

at the aircraft. During inclement weather debriefs may be performed inside. All FCFs and OCFs debriefs will be performed by QA and a debriefer in the FCF briefing room.

4.7.1.1.2. **(Added)** The debriefing team will consist of the aircraft commander, debriefer, and any maintenance specialists required for the discrepancy(s).

4.7.1.1.3. **(Added)** The debriefer will update the IMDS using the applicable screens with the information provided by the aircrew. Once the debrief is completed, the debriefer will ensure the AFTO Form 781A, Maintenance Discrepancy and Work Document, is complete and correct, and will initial in the Maintenance Review block of the form. After the review is complete, the form will be transferred to the office of flight records (P/S) for action.

4.7.1.1.4. **(Added)** Debriefer will immediately after aircrew debrief inform the Pro Super of any pilot reported discrepancies.

4.7.1.1.5. **(Added)** All debriefing functions, including deployed debrief sections, will use the IMDS, if available, to record all appropriate data gained during the aircrew debrief. Debriefers will:

4.7.1.1.6. **(Added)** Enter open aircraft discrepancies including off station closed discrepancies not previously entered in the IMDS.

4.7.1.1.7. **(Added)** Document engine/flight data in the IMDS.

4.7.1.1.8. **(Added)** Load Air Force Technical Order (AFTO) Form 781, *AFORM Aircrew/Mission Flight Data Document*.

4.7.1.1.9. **(Added)** Review all flying time inputs for the previous day, if applicable. Ensure flying times are accurate and correct errors when necessary.

4.7.1.1.10. **(Added)** DOD Aviation Into Plane Reimbursement (AIR) Card Program: The aircraft AIR Card will be maintained on the aircraft. The AIR card will be checked during debrief to ensure it is with the aircraft.

4.8.1.7. Regardless of inspection location, all discrepancies will be captured in IMDS.

4.8.3. 1HS helicopters pilots names (two maximum) will be marked on the right cockpit door. Flight Engineer (FE) and crew chief names will be marked on the left cockpit door with the FE name on top. All names will be Palatino Linotype in Bold Italic font and 1 1/2 in height. Maintenance shall have old names removed and new names marked within 14 days after submittal from the 1HS/DO (Director of Operations) or designated official.

5.8.8. The Communication-Navigation section will perform on-equipment maintenance when required.

5.8.10. The Guidance and Control section will perform on-equipment maintenance when required.

5.12.1.22. **(Added)** Accomplish acceptance inspections (as required) on newly received engines in coordination with the Engine Management Section. See TO 00-20-1 and AFDW supplement (Attachment 3) for acceptance inspection requirements.

6.2.2.10.1. Contractors will maintain an active copy and adhere to all applicable wing/group and squadron functional and quick reaction checklists.

6.2.2.10.1.1. **(Added)** Will develop a check sheet, in conjunction with security forces and maintenance operations to report suspected intentional damage or tampering to aircraft. As a minimum, ensure the following actions are contained in the checklist.

6.2.2.10.1.1.1. **(Added)** Preserve the area where the damage was noted until arrival of investigators.

6.2.2.10.1.1.2. **(Added)** Have the individual discovering the damage available to the responding investigator(s).

6.2.2.10.1.1.3. **(Added)** Have pertinent information available for the investigator; e.g., date, time (actual or estimated) damage occurred or discovered, type and tail number of aircraft, description of damage or tampering, and recent maintenance history.

6.2.2.13. When the Pro Super determines an aircraft add is necessary, they will notify the ODO, email the Operational Support Flight, and coordinate with PS&D.

6.2.2.19.1. **(Added)** ODO notifies the 1HS SQ/CC, 11WG Command Post, OG/CC, and COTR.

6.2.3. This function centralizes Comprehensive Engine Management System (CEMS) and Turbine Engine Management System (TEMS) tracking of engines, modules, tracked components, and TCTO compliance. Engine Manager Responsibilities are in AFI 21-104 and TO 00-25-254-1. All MAF units will establish an Engine Management section. For units under 2LM concept, a propulsion specialist will be assigned to the Engine Management section. The propulsion specialist will manage the Engine Management section and applicable programs. This section will coordinate with AFDW/A4M, AFSPC/A4MM, and Command Engine Management for approval before returning engines, modules, or gearboxes to depot for overhaul or repair.

6.2.3.19.7. EM training will consist of the following:

6.2.3.19.7.1. **(Added)** The engine management section will monitor and update IMDS/ (CEMS) transactions for accuracy and timely submission to the CEMS central databank that tracks engines, modules, tracked components, and TCTO compliance.

6.2.3.19.7.2. **(Added)** Verify serial number, serviceability status, and station of possession using IMDS.

6.2.3.19.7.3. **(Added)** Verify one hundred percent required engine component installation using program 8050. For not installed components on the engine, process program 9102 to install the components on the next higher assembly.

6.2.3.19.7.4. **(Added)** Manage the identification (ID) numbers for all engines, using batch report 67191, which lists engine ID numbers assigned to the propulsion branch. Input, delete, or transfer engine master ID numbers as

necessary using programs 9014 and 9112.

6.2.3.19.7.5. **(Added)** Monitor mission capability (MICAP) requirements for engines and support equipment, by using the support equipment material control report (67051), to verify all changes to MICAP status are documented and updated.

6.2.3.19.7.6. **(Added)** The engine cannibalization log will be maintained, ensuring all engine cannibalizations are entered and updated in IMDS using screen 9111.

6.2.3.19.7.7. **(Added)** Ensure that inspection, time changes, and TCTOs for assigned engines, modules, and spares are loaded and updated in IMDS.

6.2.3.19.7.8. **(Added)** Conduct an engine records review to ensure that the engine/component hours and cycles loaded in IMDS are accurate. Engine reviews, at a minimum, are required for, aircraft ISO inspections, any other major repair, and upon aircraft transfer from one base to another.

6.2.3.19.7.9. **(Added)** Review/analyze engine records and major component failures looking for trends.

Table 6.1. (Added) Definitions and Formulas if not identified in AFI 21-101 Chp 1.

DEFINITIONS	FORMULA
Adds. Missions, departures, or sorties that are added to the flying schedule after the daily schedule is officially finalized for next day.	None
Adjusted Average Possessed Aircraft (Average number of possessed aircraft, excluding those aircraft deducted for each ISO and refurbishment, when the samples were taken. Adjusted average possessed aircraft will be used for delayed discrepancy calculations and are not the same as the average possessed aircraft used for commitment calculations).	Possessed Aircraft minus (ISO and refurb) aircraft
Air Abort Rate (Logistics). Percent of sorties that abort/J Divert during flight.	$\frac{\text{Number of Air Aborts (J Diverts + Local Training Air Aborts)}}{\text{Number of Sorties from IMDS}} \times 100$
Attrition (used for inventory or assignment purposes only.) Aircraft that are required to replace primary aircraft inventory losses in a given year.	None
Attrition Factor (Rate). Missions or sorties lost due to weather or other uncontrollable reasons. NOTE: Uncontrollable attrition is missions or sorties lost for reasons beyond control or authority of the wing commander.	$\frac{\text{Missions or sorties lost due to weather or other reasons}}{\text{Missions or sorties scheduled}}$

Average Mission Length. The average flying time for a mission from the first sortie to mission completion.	<u>Total Flying Time</u> Total Missions
Average Possessed Aircraft. Average number of aircraft possessed per day by unit for a specified period.	<u>Total possessed hours</u> Number of days in the period 24
Average Sortie Duration. Average length of a sortie expressed as an average flying hours per sortie.	<u>Total hours flown</u> Total sorties
Backup Aircraft Inventory (BAI). Aircraft above the primary mission inventory to permit scheduled and unscheduled maintenance modifications, inspections, and repair by AFMC without reduction of aircraft available for operational missions.	None
Base Repair Capability. Capability of unit's maintenance complex to repair equipment with existing experience and equipment (TO 00-20-3).	Sum of Action taken codes (A/F/G/K/L/Z) _____ x 100 Sum of action taken codes (A/F/G/K/L/Z/1/2/3/4/5/6/7/8/9)
Base Self Sufficiency. Capability of unit's maintenance complex to repair items the unit has authority to repair and has some influence over (TO 00-20-3).	Sum of Action taken codes (A/F/G/K/L/Z) _____ x 100 Sum of Action taken codes (A/F/G/K/L/Z/2/3/5/6)
Break. System malfunction occurring in flight that renders aircraft NMC after landing. A logistics air abort will be loaded as a break.	None
Break Rate. Percent of aircraft block ins that have system discrepancies rendering aircraft NMC. IMDS units use sorties and IMDS units use block-ins.	Number of breaks (<u>Only one per block in</u>) x 100 Number of block ins
Cancellation. Missions, departures, or sorties that are removed from the flying schedule after the daily schedule is officially finalized for next day.	None
Cannibalization Actions. Removal (action taken T) of components from one end item (aircraft or engine) for another end item (aircraft or engine) and installation (action taken U) of the issued part on the original end item.	None

<p>Cannibalization Rate. Average Number of cannibalization jobs created (5200 series jobs) per sortie. Issues from supply to aircraft other than the aircraft the part was originally ordered for are not CANNs. Parts removed from the TNB for another aircraft are not CANNs. TO 00-20-2, Chapter 5.</p>	<p><u>Total number of cannibalizations</u> $\frac{\text{Number sorties flown}}{\text{Cumulative possessed aircraft}} \times 100$</p>
<p>Commitment. Assigning and designating aircraft to headquarters missions; alerts and spares; local missions; operations and maintenance, FTD ground training, and static displays.</p>	<p>None</p>
<p>Commitment Rate. Percent of possessed aircraft scheduled and designated for headquarters (618 TACC/XOO/XOC) tasked missions, spares, and alerts, and local missions (not local spares), operations and maintenance ground trainers, FTD trainers, and static displays.</p>	<p>$\frac{\text{Total aircraft committed to directed missions (including cross country mission aircraft still possessed), spares and alerts (not local spares and alerts), local and training missions, operations, and maintenance ground trainers, static displays, FTD}}{\text{Cumulative possessed aircraft}} \times 100$</p>
<p>Cumulative Possessed Aircraft. The cumulative total number of aircraft possessed each day.</p>	<p><u>Possessed hours</u> 24</p>
<p>Data Integrity Initial Error Rate. Percent of records that had discrepancies found within the IMDS that were in error. Count only the number of records that had errors not the errors in each record.</p>	<p>$\frac{\text{Jobs documented with errors}}{\text{Number of Jobs Reviewed}} \times 100$</p>
<p>Data Integrity Adjusted Error Rate. Percent of records that had discrepancies corrected within 72 hours in the IMDS. Count only the number of records that had errors not the errors in each record.</p>	<p>$\frac{\text{Jobs remaining with errors}}{\text{Number of Jobs Reviewed}} \times 100$</p>
<p>Delayed Discrepancy. Any non-grounding discrepancy that has been delayed or deferred and will not be worked within 24 hours from the time the discrepancy was found. Usually those discrepancies are transferred from AFTO Form 781A to 781K. Preplanned time changes and TCTOs that require parts are not considered delayed until the scheduled day for completion is past and action is not completed.</p>	<p>None</p>

<p>Delayed Discrepancy Average, AWM. Average number of delayed discrepancies per aircraft awaiting maintenance. Do not count discrepancies for aircraft in ISO, periodic, phase, HSC or refurb and discrepancies awaiting depot when the sample is taken.</p>	<p><u>Total discrepancies delayed for maintenance</u> Adjusted average possessed aircraft</p>
<p>Delayed Discrepancy Average, AWP. Average number of delayed discrepancies per aircraft awaiting parts. Do not count discrepancies for aircraft in ISO, periodic, phase, HSC or refurb and discrepancies awaiting depot when the sample is taken.</p>	<p><u>Total discrepancies delayed for parts</u> Adjusted average possessed aircraft</p>
<p>Delayed Discrepancy Average. Average number of delayed discrepancies per possessed aircraft. When calculating the average for 1 month, use no less than 4 samples per month (approximately one sample per week.) Add the sample together and divide by number of samples taken. Do not include discrepancies awaiting depot or on aircraft in ISO, periodic, phase, HSC or refurbishment when sample is taken. Calculate adjusted average possessed aircraft during each sample ensuring more accurate correlation between average delayed discrepancies and possessed aircraft.</p>	<p>Total delayed discrepancies <u>(AWM + AWP)</u> Adjusted average possessed aircraft</p>
<p>Departure. AFDW departures are considered home-station, enroute or world-wide.</p>	
<p>Departure Reliability, Logistics. Percent of total departures that did not have a delay caused by logistics.</p>	<p><u>Total departures - logistics delays</u> Total departures x 100</p>
<p>Departure Reliability, Raw (Overall). Percent of total departures that did not have a delay for any reason.</p>	<p><u>Total departures - total delays</u> Total departures x 100</p>
<p>Deviation. Category encompassing those reasons for alterations or interruptions to daily flying schedule. Cancels, air aborts, delays, and adds are considered deviations. Deviations are used when calculating flying schedule effectiveness. A deviation is any change to the final printed flying schedule.</p>	<p>None</p>
<p>Dropped Object Rate. Rate of dropped objects per 1,000 sorties.</p>	<p>Number of dropped object incidents _____ x 1,000 Total Sorties</p>

Engine Foreign Object Damage (FOD) Rate. Average number of engine FODs per 1,000 sorties.	Number of FOD incidents _____ x 1,000 (Number of sorties Number of engines on the aircraft)
Fix. Completing maintenance actions on pilot reported-discrepancies (NMC) returning the aircraft to PMC or FMC status.	None
Fix Rate. Percent of aircraft landing Code-3 that are fixed within established time frames.	Number aircraft fixed within specified time frame _____ x 100 Number of Code-3 breaks
Fully Mission Capable Rate (FMC). Percent of aircraft possessed hours that were fully mission capable for a unit over a specified period.	$\frac{\text{FMC hours}}{\text{Possessed hours}} \times 100$
Ground Trainer. Aircraft employed for ground training, which do not require airborne operations.	None
In Flight Emergency. Safety of flight issue that may or may not result in an air abort.	
Labor Hours Documented. Total direct labor hours documented by maintenance personnel for specific MDS. Includes hours documented to aircraft engine and excludes transient maintenance labor hours (type maintenance Y).	None
Labor Hours Per Cannibalization. Average amount of hours expended for CANN removal (T action) and installation after issue of part (U action).	$\frac{\text{Total labor hours expended on cannibalizations (T\&U)}}{\text{Total number of cannibalizations}}$
Labor Hours Per Flying Hour. Average labor hours expended per aircraft flying hour.	$\frac{\text{Total labor hours documented (aircraft and engines only excluding Y type maintenance)}}{\text{Total flying hours}}$
Direct Labor Hour Productivity. Percent of total labor hours assigned consumed by direct productive labor hours. Assigned Labor Hours: The sum of active duty personnel assigned times 8 for each day plus the sum of reserve personnel assigned times 16 for each month.	$\frac{\text{Total direct hours expended}}{\text{Assigned labor hours}} \times 100$
Labor Hour Utilization. Percentage of total hours assigned documented for total labor hours expended.	$\frac{\text{Total labor hours documented}}{\text{Total labor hours assigned + overtime documented}} \times 100$
Lease. Military aircraft provided to agencies and organizations outside the federal government on a temporary basis.	None

Loan. Military aircraft provided to other federal government departments and agencies on a temporary basis.	None
Maintenance Delivery Reliability. Percent of time the aircraft is mission capable at scheduled or actual crew show time (whichever is sooner) and aircraft is capable of flight and will be accepted by aircrew.	$\frac{\text{Total scheduled sorties minus number of aircraft broke at scheduled or actual crew show time (whichever is sooner)}}{\text{Total scheduled sorties}} \times 100$
Mean Time Between Failure (MTBF). Average flying time or operating time expended for an end item, system, subsystem, or component before failure occurs. TYPE DEFECT: TYPE 1 - Inherent, an actual failure of the item. TYPE 2 - Induced, the failure of the item was caused by outside influence. TYPE 6 - No defect, no actual failure. REF: TO 00-20-2	$\frac{\text{End item flying time or operating time times quantity per application (QPA)}}{\text{Type 1 + Type 2 Failures}}$
Mission. The primary objective for which an aircraft is being operated. In relationship to sorties; there may be multiple sorties for a mission, or multiple missions in a sortie.	None
Mission Capable (MC) Rate. Percent of aircraft possessed hours that were FMC and PMC for a unit over a specified period	$\frac{\text{FMC + PMC hours}}{\text{Possessed hours}} \times 100$
Not Mission Capable Rate (NMC). Percent of aircraft possessed hours that were NMCM, NMCS, and NMCB for a unit over a specified period	$\frac{\text{NMCM + NMCS + NMCB hours}}{\text{Possessed hours}} \times 100$
Not Mission Capable Both Rate (NMCB). Percent of aircraft possessed hours that were NMCB for a unit over a specified period.	$\frac{\text{NMCB hours}}{\text{Possessed hours}} \times 100$
Not Mission Capable Maintenance Rate (NMCM). Percent of aircraft possessed hours that were NMCM for a unit over a specified period.	$\frac{\text{NMCM hours}}{\text{Possessed hours}} \times 100$
Not Mission Capable Supply Rate (NMCS). Percent of aircraft possessed hours that were NMCS for a unit over a specified period.	$\frac{\text{NMCS hours}}{\text{Possessed hours}} \times 100$
Partial Mission Capable Rate (PMC). Percent of aircraft possessed hours that were PMCM, PMCS, and PMCB for a unit over a specified period.	$\frac{\text{PMCM + PMCS + PMCB hours}}{\text{Possessed hours}} \times 100$
Partial Mission Capable Both Rate (PMCB). Percent of aircraft possessed hours that were PMCB for a unit over a specified period.	$\frac{\text{PMCB hours}}{\text{Possessed hours}} \times 100$

Partial Mission Capable Maintenance Rate (PMCM). Percent of aircraft possessed hours that were PMCM for a unit over a specified period.	$\frac{\text{PMCM hours}}{\text{Possessed hours}} \times 100$
Partial Mission Capable Supply Rate (PMCS). Percent of aircraft possessed hours that were PMCS for a unit over a specified period.	$\frac{\text{PMCS hours}}{\text{Possessed hours}} \times 100$
Pilot Reported Discrepancy (PRD). Discrepancies found by the aircrew and reported/written in the AFTO 781A or called into maintenance operations center.	None
Primary Aircraft Inventory (PAI). Aircraft assigned to meet primary aircraft authorizations (includes PDAI, PMAI, POAI, and PTAI aircraft).	PMAI + PTAI + PDAI + POAI
Primary Mission Aircraft Inventory (PMAI). Aircraft assigned to a unit for the performance of its wartime mission.	None
Primary Training Aircraft Inventory (PTAI). Aircraft required primarily for technical and specialized training for crew personnel or leading to aircrew qualification.	None
Primary Development & Test Aircraft Inventory (PDAI). Aircraft assigned primarily for testing aircraft or its components for purposes of research, development, test and evaluation, operational test and evaluation, or for testing programs.	None
Primary Other Aircraft Inventory (POAI). Aircraft required for special missions not defined elsewhere.	None
Quantity Per Application (QPA). The number of duplicate items installed on an aircraft.	Note: QPA is used as a multiplier for calculating Mean Time Between Failures (MTBF) for systems, subsystems, and components.
Reclamation. Aircraft removed from operational service due to damage, depreciation, administrative decision, or completion of projected service life.	None
Reconstitution Reserve. Aircraft stored or on ramp that are planned for return to operating forces in event of mobilization, replacement, or reconstitution.	None

Recur Discrepancy. System or subsystem malfunction that reappears during the third, fourth, or fifth sortie (or attempted sortie) following its first appearance.	None
Recur Rate	$\frac{\text{Number of recur discrepancies}}{\text{Total Pilot Reported Discrepancies (PRD)}}$
*Repeat Discrepancy. Malfunction in a system or subsystem that reappears on the next sortie (or attempted sortie) NOTE: Each consecutive sortie that experiences the malfunction is a Repeat and resets the counter, i.e. there can be several repeats in a row, but not a Recur unless there is at least one flight between malfunctions.	None
Repeat Rate	$\frac{\text{Number of repeat discrepancies}}{\text{Total Pilot Reported Discrepancies (PRD)}}$
Sortie. An operational flight by one aircraft. A sortie begins when an aircraft begins to move forward on takeoff. It ends after airborne flight when the aircraft returns to the surface and: Engines are stopped, or the aircraft is on the surface for 5 minutes, whichever occurs first. A change is made in the crew that adds a crewmember. On missions where some crewmembers deplane and the remaining crew from the original takeoff re-launches, this is considered a continuation of the original sortie.	None
Storage. Aircraft removed from the active inventory and held in a preserved condition.	None
Total Not Mission Capable Maintenance (TNMCM). Percent of aircraft possessed hours that were NMCM and NMCB for a unit over a specified period.	$\frac{\text{NMCM} + \text{NMCB hours}}{\text{Possessed hours}} \times 100$
Total Not Mission Capable Supply (TNMCS). Percent of aircraft possessed hours that were NMCS and NMCB for a unit over a specified period.	$\frac{\text{NMCS} + \text{NMCB hours}}{\text{Possessed hours}} \times 100$
Use Rate, Daily (Hourly Use). Average number of flying hours per average possessed aircraft per day.	$\frac{\text{Total hours flown}}{\text{(Average possessed aircraft days in the month)}}$
Use Rate, Monthly (Hourly Use). Average number of flying hours per average possessed aircraft per month.	$\frac{\text{Total hours flown}}{\text{Average possessed aircraft}}$
Use Rate, Monthly (Sortie Use). Average number of departures or sorties flown per average possessed aircraft for a month.	$\frac{\text{Total sorties}}{\text{Average possessed aircraft}}$

Utilization Rate, Daily (Hourly UTE). Average number of flying hours per primary aircraft inventory (PAI) per day.	Total hours flown _____ (PAI days in the month)
Utilization Rate, Monthly (Hourly UTE). Average number of flying hours per (PAI) per month.	Total hours flown _____ PAI
Utilization Rate, Programmed Monthly (Hourly UTE). Average number of programmed flying hours per PAI for a month.	Total hours programmed _____ PAI
Utilization Rate, Monthly (Sortie UTE). Average number of departures or sorties flown per PAI aircraft for a month.	Total sorties _____ PAI

7.1.2. Jacket files will include as a minimum:

7.1.2.1. **(Added)** Packages for one complete inspection cycle. Units may download paperless inspections to automated storage media from IMDS for filing in aircraft jacket files.

7.1.2.2. **(Added)** Last FCF certification letter or checklist IAW TO 00-20-1.

7.1.2.3. **(Added)** Last Depot package.

7.1.2.4. **(Added)** Any open lost tool reports IAW Chapter 10.

7.1.2.5. **(Added)** Transfer packages.

7.1.2.6. **(Added)** Aircraft 95 and applicable -6 Weapons System specific AFTO Form 95s.

7.1.2.7. **(Added)** Weight and Balance records (*).

7.1.2.8. **(Added)** Engine Records (*).

7.1.2.9. **(Added)** Current document review.

7.1.2.10. **(Added)** NDI records (*).

NOTE: * = Decentralized records will have DD2861, *Cross Reference*, in jacket file.

7.2.2. Units will hold a pre-dock meeting no later than one duty day before the start of the scheduled inspection.

7.2.2.1.1.1. **(Added)** The documentation section supervisor will determine pre-dock meeting attendees. The following personnel will attend the meeting, as a minimum: documentation section representative (PS&D), inspection dock chief, production supervisor (Pro Super), aircraft dedicated crew chief (DCC), MSL or supply support representative (flight line), LRS TCTO kit monitor (Shop Service Center), engine management representative (EMB), and NDI shop representative (if NDI is required during the inspection).

7.2.2.1.1.2. **(Added)** Annotate all maintenance actions required during the inspection on an AF Form 2410.

7.2.2.2.1. **(Added)** 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 will also be discussed at the pre-dock meeting.

7.2.2.2.2. **(Added)** All meeting attendees will sign the AF Form 2410.

7.2.3. Units will hold a post dock meeting as soon as possible after the inspection and before the functional check flight (FCF) or first flight.

7.2.3.1. **(Added)** The purpose of the post dock meeting is to verify that those maintenance actions, listed on the AF Form 2410 and agreed upon at the pre-dock meeting, were completed and documented correctly. If maintenance actions were not completed, an agreed upon plan will be developed to complete these maintenance actions and documented on the AF Form 2410.

7.2.4. DODI 5000.2, *Defense Acquisition Management Policies and Procedures*, AF Supplement 1, contains specific guidance regarding configuration management, reporting, and control. Equipment modification/reconfiguration is prohibited, except as prescribed by DoDI 5000.2, AF Supplement 1. Equipment, as defined here includes, but is not limited to, aircraft, support equipment end items, simulators, etc.

7.2.4.1.1. **(Added)** Maintain master ID number list for uninstalled items. Where decentralized (e.g., engine management, AGE,) the assigned 2R1X1 will ensure the master ID number list is kept current using screen 810/990.

7.2.4.6. **(Added)** Units will accomplish part/serial number verification during phase acceptance inspection.

7.2.4.6.1. **(Added)** Ensure that serially controlled items are loaded and verified in IMDS using screen 810 & 990.

7.2.5.4. Work centers responsible for drafting 107 requests will notify PS&D on completion of discrepancy and all related maintenance actions.

7.2.6.2.3.3.1. **(Added)** Annotate on AF Form 2410 the prime work center.

7.2.7.11. Forecast all time change requirements using IMDS.

7.2.7.11.1. **(Added)** CAD/PAD forecasting will follow procedures in TO 00-20-9, Chapter 4.

7.2.10. **(Added)** Aircraft Acceptance Inspections. (Checklist Attachment 2)

7.2.11.1. The Helicopter Branch will accomplish the Unprogrammed Depot Level Maintenance (UDLM) acceptance inspection using an Air Logistics Center prepared statement of work or contract to determine if the required repair and or inspection were accomplished.

7.2.11.1.2. The deployed maintenance supervisor will use available electronic means daily (e.g., IMDS, email, fax, telephone).

7.2.11.2. **(Added)** Programmed Depot Maintenance (PDM) acceptance inspections will be accomplished using approved work cards/checklist based on current fiscal year (PDM) work specifications, statements of work, or contracts.

7.2.11.3. **(Added)** Responsibilities (Prior to aircraft departing for depot and accepting helicopters from depot).

7.2.12. **(Added)** Helicopter Branch Maintenance personnel will:

7.2.12.1. **(Added)** Inventory –21 equipment (using AF Form 2692, Aircraft/Missile Equipment Transfer/Shipping Listing).

7.2.12.2. **(Added)** Inspect helicopter TCTOs in progress to ensure aircraft has not been demodified due to cannibalization.

7.2.12.3. **(Added)** Verify weight and balance calculations in accordance with TO 1-1B-50, *Weight and Balance*, and 1H-1(U) N-5, *Basic Weight Checklist and Loading Data*.

7.2.12.4. **(Added)** Accomplish a Basic Postflight Inspection in accordance with TO 1H-1(U) N-6WC-1, *Preflight-Thruflight-Basic Postflight Inspection*.

7.2.12.5. **(Added)** Verify functional check flight completion in accordance with TO 1H-1(U) N-6CF-1, *Acceptance and Functional Check Flight Procedures*, and TO 1-1-300, *Acceptance/Functional Check Flight and Maintenance Operational Checks*.

7.2.12.6. **(Added)** Assist Plans & Scheduling personnel with physically verifying all serially controlled parts to ensure aircraft records reflect the same serial numbers as installed components.

7.2.12.7. **(Added)** Perform a full technical order review (“LEP” Page).

7.2.13. **(Added)** Avionics Shop will:

7.2.13.1. **(Added)** Accomplish and document a full avionics power-on check IAW LCL-1HS-AVIONICS-CL-3, *Post Phase Inspection Power-On Check*.

7.2.13.2. **(Added)** Coordinate with ASD Plans and Scheduling to ensure special inspections are completed and updated in the aircraft forms and IMDS.

7.2.13.3. **(Added)** Plans and Scheduling will:

Verify the most recent depot level TCTOs have been accomplished as agreed upon.

7.2.13.4. **(Added)** Verify all work accomplished in accordance with AFTO

Form 103, *Aircraft/Missile Condition Data*.

7.2.13.5. **(Added)** Verify aircraft historical documents (i.e. AFTO Form 95, Significant Historical Record, AFTO Form 44, Turbine Wheel Historical Record, AFTO Form 781E, Accessory Replacement Document, etc.).

7.2.13.6. **(Added)** Review minimum planning requirements inspection and time change forecast. Accomplish all special inspections and time changes prior to aircraft return to home station.

7.2.14. **(Added)** Quality Assurance will:

7.2.14.1. **(Added)** Perform an acceptance inspection to verify aircraft airworthiness and all workcenter specific tasks were accomplished to include weight and balance.

7.2.15. **(Added)** Deficiency Reporting.

7.2.15.1. **(Added)** All aircraft, engine or AGE discrepancies found during the acceptance inspection must be documented in the appropriate forms and the MIS.

7.2.15.2. **(Added)** Aircraft/Maintenance Branch will forward discrepancies found during the acceptance inspection with supporting data to QA.

7.2.15.3. **(Added)** QA prepares and forwards a category II report, IAW TO 00-35D-54, not later than (NLT) 13 calendar days after possession has been accomplished or upon receipt of completed inspection findings. The report will list all critical, major and minor discrepancies.

7.8.3.10.1. Only changes made after the daily production meeting require AF IMT 2407 coordination.

7.8.3.11. **(Added)** Deviations. Measure Flying Scheduling Effectiveness (FSE) against the daily flying schedule and Maintenance Scheduling Effectiveness (MSE) against the weekly maintenance schedule. Any change from the weekly or daily flying schedule after it is coordinated at the production meeting is a deviation.

7.8.3.11.1. **(Added)** Changes submitted from the IHS to PS&D no later than 1600L the day prior to the effected change are not considered deviations.

7.8.3.12. **(Added)** Maintenance Scheduling Effectiveness (MSE) Rate: *FORMULA*: Total points earned / total points possible X 100= Maintenance Scheduling Effectiveness Rate.

7.8.3.13. **(Added)** Flying Schedule Effectiveness: The two forms of FSE are wing FSE and total FSE.

7.8.3.13.1. **(Added)** *Wing FSE*, a non-chargeable deviation is one the wing does not control, such as weather, sympathy, ATC, and HHQ.

7.8.3.13.2. **(Added)** *Total FSE*, only non-chargeable deviation is weather, sympathy, and ATC. Total FSE will enable us to depict the turbulence the HHQ is having on our ability to execute the flying schedule.

7.8.3.13.3. **(Added)** Deviations will be recorded for one of the following reasons: maintenance, operations, supply, higher headquarters (HHQ), weather, sympathy, air traffic control, or other. The IHS/DO and contractor will resolve questions concerning the recording of deviations between maintenance and operations.

7.8.3.13.4. **(Added)** Interchanges (tail swap). Interchanges will be used to prevent reconfigurations and unnecessary expenditures of work hours when the prime aircraft is not mission capable by its scheduled takeoff time.

7.8.3.13.4.1. **(Added)** Every effort is made to make the aircraft interchanges at the daily maintenance meeting the day before the aircraft scheduled flight and entered on the AF Form 2407. Interchanges that are made after the daily maintenance meeting and before the unit's first aircraft take-off, AF Form 2407's are required (Initiating agency will be responsible for coordinating the AF Form 2407 through the required agencies.) Record all interchanges in IMDS. Below are specific examples of interchanges:

7.8.3.13.4.1.1. **(Added)** Changing aircraft in printed line numbers with printed spare aircraft.

7.8.3.13.4.1.2. **(Added)** Changing aircraft in printed line numbers to different printed line numbers (tail number swap).

7.8.3.13.4.1.3. **(Added)** Changing aircraft that have flown and not on the printed schedule with aircraft on the printed schedule.

7.8.3.13.4.2. **(Added)** Enter all interchanges made at the daily maintenance meeting on an AF form 2407 for audit and analysis purposes.

7.8.3.13.5. **(Added)** Spare. An aircraft on the flying schedule identified as a replacement aircraft for use when needed. *NOTE:* Anytime a spare is used, deviation code SP will be used.

7.8.3.13.6. **(Added)** Maintenance (MT). Deviations resulting from aircraft discrepancies, unscheduled maintenance or for actions taken for maintenance consideration.

7.8.3.13.7. **(Added)** Operations (OP). Deviations resulting from operations/aircrew actions including substitution/crew illness/mission changes causing an early/late takeoff or cancellation.

7.8.3.13.8. **(Added)** Supply (SU). Deviations resulting from a Partially Mission Capable Supply (PMCS) or Not Mission Capable Supply (NMCS) condition or for late Supply or Petroleum Oils, Lubricant (POL).

7.8.3.13.9. **(Added)** Higher Headquarters (HHQ). Deviations resulting from a higher headquarters tasking including closing of low level route or external customer directed mission change. Replacement of an aircraft printed in the weekly schedule for a higher headquarters directed alert or off base mission by a spare, use one of the following options:

7.8.3.13.9.1. **(Added)** Option 1. The originally scheduled prime aircraft, which remained on base, may fly the sorties of the departed aircraft for the remainder of the week.

7.8.3.13.9.2. **(Added)** Option 2. Interchange the sorties with a printed spare aircraft on each day's schedule.

7.8.3.13.10. **(Added)** Weather (WX). Deviations for aircraft which takeoff early, late, abort, or are added or canceled due to weather conditions.

7.8.3.13.11. **(Added)** Sympathy deviation occurs when a flight of two or more aircraft cancel abort or delay, under the command of a flight leader or instructor pilot of one of the aircraft in the flight or a supporting flight. Record sorties, which are to replace sympathy aborts or cancellations on the same day, as sympathy additions.

7.8.3.13.12. **(Added)** 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).

7.8.3.13.13. **(Added)** Other deviations resulting from the following:

7.8.3.13.13.1. **(Added)** 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).

7.8.3.13.13.2. **(Added)** Commanders authorize UTE management deletions.

7.8.3.13.13.3. **(Added)** Commanders authorize training management deletions.

7.8.3.13.13.4. **(Added)** Unusual circumstances not covered by the above definitions may use this code (e.g., bird strikes, unscheduled alert swap out).

7.8.3.13.13.5. **(Added)** Exercise. Sorties added or canceled due to the initiation of an unannounced exercise.

7.8.3.13.13.6. **(Added)** Equipment, non AFDW. Deviations caused by National Airborne Operations Center (NAOC) or Air Intelligence Agency (AIA) or Air Force Material Command (AFMC) equipment, and other non-AFDW support and equipment.

7.8.3.13.14. **(Added)** Schedule Deviations. The contractor is responsible for documenting deviations to the weekly/daily flying schedule and determining the cause for each deviation. Assign deviations after coordination with the appropriate agency and before assigning the deviation to a specific category. The OSS/CC will resolve any deviation issues. Assign schedule deviations that result from a primary cause sequence of events. Make a determination of the primary cause by the parties involved to arrive at a group position. The OSS/CC will make the final determination of scheduling deviations after coordination with outside agencies (if necessary). Record all deviations as described in this publication. *NOTE:* Deviations apply to the weekly flying schedule even though a coordinated change is accomplished using an AF Form 2407. When a unit coordinates a change using an AF Form 2407, the unit is informing everyone of the changed information. Do not record multiple deviations against a single line entry, except for additions that air abort or cancel, spares that air abort and late takeoffs that air abort. For deviation reporting purposes, the AFTO Form 781, ARMS (Aviation Resource Management System), will be the official source document for takeoff and landing data. For all deviations, the person recording the deviations in IMDS will provide a detailed explanation in the remarks section. This will allow managers at all levels to identify specific trends.

7.8.3.13.15. **(Added)** The following paragraph lists types of deviations:

7.8.3.13.15.1. **(Added)** Additions. Record an aircraft not printed to the schedule (added on the weekly schedule) against the agency that requested the additional aircraft. Functional Check Flights (FCF) and Operational Check Flights (OCF) whose primary purpose is to perform maintenance checks are not additions. Record FCF and OCF sorties as flown as scheduled.

7.8.3.13.15.2. **(Added)** Early and late takeoffs caused by maintenance,

supply, or operations. A late takeoff occurs when a scheduled sortie becomes airborne more than 14 minutes after the scheduled take off time. An early takeoff is a scheduled sortie that launches more than 20 minutes before published takeoff. FTU, TF and CB aircraft will use 14 minutes for late takeoffs.

7.8.3.13.15.3. **(Added)** Sortie cancellation. For training sorties, if the sortie can launch and recover during the flying window and perform its original mission with the original crew, a cancellation is not recorded. For hard line sorties (sorties that support other defense customers), cancellation occurs when it is determined that the originally scheduled mission cannot be met. However, record any sortie not launching within the late takeoff criteria as a late takeoff.

7.8.3.13.15.4. **(Added)** Supply deviations. For aircraft not replaced by a spare aircraft due to supply.

7.8.3.13.15.5. **(Added)** Late delivery of POL directly results in a deviation.

7.8.3.13.15.6. **(Added)** Operations deviations from the weekly schedule, including deviations that result from over stressing the aircraft and short notice aircrew physical/mental disqualification.

7.8.3.13.15.7. **(Added)** Record ground aborts to the responsible agency or condition that caused the aborted mission. Record in IMDS ground aborts on FCFs or OCFs but not used in flying scheduling effectiveness.

7.8.3.13.15.7.1. **(Added)** If a spare replaces an aborted aircraft and that spare can meet the mission requirements, code the original aircraft as a ground abort.

7.8.3.13.15.7.2. **(Added)** Launching of an aborted aircraft on the original scheduled mission but exceeds the 15-minute late takeoff criteria, record the sortie as a late takeoff.

7.8.3.13.15.8. **(Added)** Air aborts. Consider an air abort as a sortie flown when reporting total sorties flown. Code air aborts to 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. *NOTE:* Attaining the decision for an effective mission will be made by operations. A non-effective mission does not necessarily mean an air abort occurred. For example, a sortie in which all planned mission tasks were completed, yet the mission was non-effective because of student failure would not be coded as an air abort. Do not count air aborts as deviations when computing FSE.

7.8.3.13.15.9. **(Added)** All higher headquarters deviations (e.g., local, destination, en route or alternate).

7.8.3.13.15.10. **(Added)** All weather deviations (may be recorded for any weather adversely impacting mission).

7.8.3.13.15.11. **(Added)** All sympathy deviations.

7.8.3.13.15.12. **(Added)** All air traffic control deviations.

7.8.3.13.15.13. **(Added)** All deviations recorded to Other.

7.8.3.13.15.14. **(Added)** All supply deletes resulting from a verified NMCS or PMCS condition.

7.8.3.13.16. **(Added)** A spare is a designated aircraft on the printed schedule for use, in case a scheduled aircraft cannot fly its sortie. Spares can include aircraft that have been canceled, aborted, flown an earlier sortie, or an aircraft that has been released after FCF/OCF. Do not count Printed Spares used as deviations when computing FSE.

7.8.3.13.17. **(Added)** Do not count Tail Number Swaps as deviations when computing FSE.

7.8.3.14. **(Added)** Scheduling Exceptions:

7.8.3.14.1. **(Added)** Limited Number of Possessed Aircraft. Units or OSs with 11 or fewer possessed aircraft of a particular MDS or assignment code are authorized to schedule tail numbers daily. This applies to deployed units or OSs that have at least 50 percent of their possessed aircraft deployed. Print aircraft tail numbers in the weekly schedule. Aircraft tail number changes made at the daily scheduling meeting will not incur a deviation. Enter the selected aircraft tail numbers immediately following the daily scheduling meeting into IMDS. Upon tail number selection, at the daily scheduling meeting, record as normal deviations. Although changing of aircraft tail numbers is at the daily meeting, measure maintenance scheduling effectiveness against the printed weekly maintenance schedule.

7.8.3.14.2. **(Added)** Adverse Weather. Units/OSs may add sorties to the flying schedule to make up for weather losses. Exceeding the planned weather attrition for the month, prorated daily allows units to add sorties to the schedule. The number of sorties added will not exceed the difference between the planned weather attrition and actual weather losses. (*EXAMPLE:* Planned weather attrition for the month equals 30 sorties. On the 20th of the month, 40 sorties are lost. Unit may add ten sorties. Carefully consider the maintenance schedule and the ability of maintenance to support the additional requirements before adding sorties. Weather adding, even within planned attrition limits, is recorded as schedule deviations. Under no circumstances will the number of sorties added for weather exceed the number planned for the month.

7.8.3.14.3. **(Added)** Achievement of Utilization (UTE) Rate. Accomplish utilization management throughout the month. Closely monitor attrition and determine if adjustments to the number of sorties before each weekly schedule are developed. This practice ensures an even sortie flow, eliminates excessive maintenance actions and limits the number of sorties canceled. The OSS/CC is responsible for the flying program and has the authority to add, cancel, or re-cut sorties anytime during the month. However, flying scheduling effectiveness will be recorded. When the OSS/CC are reasonably assured that the UTE rate goal will be met, they are encouraged to modify or cancel all or part of the schedule to

meet unit needs. Sorties that are canceled for UTE management during the last five Operations and Maintenance (O&M) days of the month will be recorded as Other. UTE rates for fighter, attack, reconnaissance (except the RQ 1), and forward air control aircraft are based on sorties. For all other aircraft, including the RQ 1, the UTE rate is based on hours.

7.8.3.14.4. **(Added)** Year End Closeout. During the last 15 O&M days of the fiscal year, units are permitted to selectively add/cancel scheduled sorties to manage the end of year flying hour closeout. Record these additions/cancellations as Other. This provision is to help units gradually close out end of year flying without creating hangar queens and unintentionally exceeding the UTE rate.

7.8.3.15. **(Added)** Planned Sortie Surge. A unit, OS, or a portion of an OS may plan to produce sorties at a higher than normal rate. When deployed and an OS is flying out of a different location, use a portion of the remaining OS aircraft for a planned sortie surge. Do not consider a planned sortie surge as a combat aircraft generation or an unscheduled tasking. Conduct a planned sortie surge in a manner that takes full advantage of training opportunities inherent in a period of increased operations and maintenance activity. The commander will determine the number of sorties required for meeting the training objectives. Sortie surge rates will exceed the daily sortie rate of the OS by at least 50 percent. For TF coded units, the rate will exceed the daily sortie rate by 25 percent.

7.8.3.15.1. **(Added)** Surge scheduling scenarios will task maintenance and flying organizations realistically. Units will plan to get the maximum number of sorties possible from each airframe committed to the schedule.

7.8.3.15.2. **(Added)** Exercise extreme care to avoid creating a backlog of unscheduled maintenance actions when scheduling sortie surges.

7.8.3.15.3. **(Added)** Print aircraft tail numbers, takeoff times, line numbers, and configurations in the weekly schedule for the first sorties of each day. Include the statement sortie surge in the remark section for each affected day.

7.8.3.15.4. **(Added)** Only line numbers are required on the weekly schedule for subsequent sorties (e.g., the total number of sorties/line numbers the unit intends to fly). Other data such as takeoff times, configurations, and missions may be printed as required by the unit. This data will be confirmed at the daily scheduling meeting.

7.8.3.15.5. **(Added)** If more sorties are flown than what was intended (e.g., line numbers printed), these sorties will be considered flown as scheduled.

7.8.3.15.6.1. **(Added)** Early and late takeoffs are not recorded on second and subsequent sorties. However, for all other deviations, normal deviation reporting applies. However, units will track late takeoffs and their causes to prevent recurrence.

7.8.3.16.1. **(Added)** For scheduled combat sortie generations publish the weekly flying schedule as a normal schedule. On the days the unit plans to exercise, annotate scheduled exercise. If an unannounced exercise is initiated, that day's

printed schedule will be canceled without deviation recording.

7.8.3.16. **(Added)** Dispersal Sortie Generation. Conduct dispersal sortie generations as follows:

7.8.3.16.1. **(Added)** The Air Tasking Order (ATO) will contain mission numbers, on status time/time on target (TOT), and configurations. A daily flying schedule, including aircraft tail numbers for the first lines and spares, will be finalized and confirmed to operations not later than 2 hours before the first on status/takeoff time. Normal deviations will be assessed against all sorties.

7.8.3.16.2. **(Added)** When a scramble launch scenario is used, a launch window will be established for each line number or block of line numbers. Normal deviations will be assessed against all sorties.

7.8.3.16.3. **(Added)** Sorties lost due to required scenario responses such as chemical warfare condition black, airfield attacks, etc., will be recorded as Other.

7.8.3.16.4. **(Added)** If more sorties are flown than line numbers printed, these sorties will be considered flown as scheduled.

7.8.3.16.5. **(Added)** Once the objectives established by higher headquarters or the commander have been met, the remainder of that day's schedule may be canceled without recording deviations.

7.8.3.16.6. **(Added)** At the termination of the exercise which caused a unit to conduct a combat sortie generation, the unit's originally printed weekly flying schedule may be revised, canceled, or replaced with a new weekly schedule without recording deviations. Once finalized, normal deviation procedures apply.

7.8.3.16.7. **(Added)** Unscheduled Tasking. Units may revise, cancel and replace any portion of the printed schedule, with a new weekly schedule, without recording deviations, when the following conditions exist:

7.8.3.16.7.1. **(Added)** When a unit is tasked with an unscheduled higher headquarters or self initiated tasking (mobility exercises or weather evacuations), or other services tasking significantly affecting the printed weekly flying schedule. *NOTE:* Do not use an unscheduled tasking solely to recoup sortie losses.

7.8.3.16.7.2. **(Added)** Use the following procedures for revising or canceling and reprinting the schedule.

7.8.3.16.7.2.1. **(Added)** Follow normal deviation reporting procedures once the revised/reprinted schedule has been finalized. The revised schedule will be finalized a minimum of 2 hours before the first scheduled launch.

7.8.3.16.7.2.2. **(Added)** Once the tasking terminates, the original schedule may be used, revised, or reprinted for the tasking period, as required. Once the schedule is finalized or reprinted, follow normal deviation reporting.

7.8.3.16.7.2.3. **(Added)** Normal deviation reporting procedures will be followed after a takeoff time is established to a tasking by higher

headquarters or other services.

7.8.3.16.7.3. **(Added)** If the unscheduled tasking has an adverse impact on the monthly UTE rate goal, the commander has the option to adjust the monthly sortie UTE rate goal.

7.8.3.17. **(Added)** Flying Scheduling Effectiveness Computations. Compute monthly flying scheduling effectiveness rate by aircraft mission and design using the formulas below:

7.8.3.17.1. **(Added)** Total Sorties Scheduled = Home Base Scheduled plus Deployed Scheduled plus Off Base Scheduled.

7.8.3.17.2. **(Added)** Scheduling Effectiveness = Total Sorties Scheduled minus total Deviations divided by total Sorties Scheduled times 100.

7.8.4. **(Added)** Maintenance Scheduling Effectiveness (MSE) Rate. MSE rate provides a means to measure maintenance management effectiveness as reflected in how well the maintenance schedule is accomplished. Maintenance efforts should be directed toward the timely accomplishment of all scheduled maintenance actions. The MSE rate standard is 95%. PS&D computes MSE on a weekly basis.

Table 7.1. (Added) Maintenance Scheduling Effectiveness Computation.

Scheduled Maintenance Events	A Weighted Factor	B Number of Events	C Possible Points (A x B)	D Events Completed on Time	E Earned Points (A x D)
PDM Input	6				
Transfer/Acceptance Inspection	6				
Contract Field Team (CFT)	6				
Engine Change	5				
REFURB	5				
ISO/PE/PHASE/A- Check	5				
HSC/HPO/BPO	4				
Time Change	4				
TCTO	4				
Special Inspection	3				
Aircraft Document Review	2				
Wash/Corrosion	3				
Deferred Discrepancies	1				

NOTE: * = CHECK PT VALUE

7.8.4.1. **(Added)** Computations: Scheduled maintenance events and respective weighted factor points in Table 7.1. (Added) will be used to compute the MSE rate.

Credit is received for actions completed on, or prior to, the scheduled date as printed in the weekly flying and maintenance schedule. The IMDS database and the published schedule will be used to determine whether or not the maintenance actions were completed on-time. For example, if a maintenance event is scheduled in the weekly flying and maintenance schedule for Monday through Wednesday, IMDS must show completed before Thursday for credit. For maintenance events extending into the next week, credit for completion is based on the last day of the scheduled event. The ISO inspection will be measured against the scheduled completion date for the "Look" portion of the inspection only. This requires each ISO schedule to clearly identify "Look" and "Fix" portions of the inspection when publishing the weekly schedule. Special inspections identified on an AF Form 2410 and scheduled for completion during an Isochronal Inspection, Home Station Check or A-Check will not be utilized in the MSE rate, only the ISO/HSC/A-check will count. This does not eliminate the responsibility for P&S to track the special inspections to ensure timely completion during the ISO/HSC/A-check.

7.8.4.2. **(Added)** MSE will not be computed during generations, unannounced exercise/ real world contingency, or a higher headquarters tasking that significantly impacts the printed weekly maintenance schedule. The OS/CC may direct the maintenance plan be revised or reprinted to incorporate missed affected actions, at which time, normal deviation reporting procedures will be followed once the revised or reprinted plan is finalized.

7.8.4.3. **(Added)** Schedule deviations apply to the printed weekly maintenance schedule, even though a coordinated change is accomplished using an AF IMT 2407. When a unit coordinates a change to the printed weekly maintenance schedule, using an AF IMT 2407, the unit is informing everyone of the changed information and deviations will be recorded as appropriate.

7.8.4.4. **(Added)** To compensate for adverse weather, units may revise or reprint the following days or remainder of that week's maintenance schedule. This adjustment should be used only in extreme cases and recorded on an AF IMT 2407. Once changed, normal deviation reporting procedures will apply.

7.8.4.5. **(Added)** Maintenance Scheduling Deviation Categories: All missed scheduled events will have a deviation code assigned to it. The deviation code will be used as a tool to help identify areas causing turbulence in scheduled maintenance.

7.8.4.5.1. **(Added)** Maintenance (MT). Actions canceled or not completed as a result of adding aircraft to the flying schedule, mismanagement of due dates, no MDC to report completion, or a lack of manpower or equipment.

7.8.4.5.2. **(Added)** Operations (OP). Actions cancelled or not completed on-time for operational considerations or as a result of adding aircraft to the flying and maintenance schedule to meet operations requirements. This also includes maintenance events not completed due to operations group actions. For example, Life Support Section not completing scheduled maintenance as coordinated and published in the wing weekly flying and maintenance schedule.

7.8.4.5.3. **(Added)** Higher headquarters (HHQ). Actions canceled or not

completed due to higher headquarters tasking from outside of the wing.

7.8.4.5.4. **(Added)** Weather (WX). Actions canceled or not completed due to weather conditions.

7.8.4.5.5. **(Added)** Supply (SU). Actions canceled or not completed as a result of verified parts back order condition.

7.8.4.5.6. **(Added)** Other actions canceled or not completed due to impounded aircraft (after the weekly schedule is published), major maintenance found during inspection where technical data restrictions do not allow the scheduled maintenance to be completed on time, or an aircraft is off-base and unable to return.

8.2. **(Added) QA Responsibilities.** QA is responsible to the MXG/CC or equivalent. *NOTE:* In addition contractor and civil service maintenance functions will follow QA guidelines as outlined in their applicable performance work statement.

8.3.11. As a minimum a KTL will be accomplished on the following component(s) that have been removed, replaced reinstalled or rigged. Additionally, all tasks that would require an FCF as specified in the applicable MDS technical data and listed below.

8.3.11.1. **(Added)** Engine changes and quick engine change kits.

8.3.11.2. **(Added)** Main transmission.

8.3.11.3. **(Added)** 90 degree gearbox.

8.3.11.4. **(Added)** Combining gearbox.

8.3.11.5. **(Added)** Major structural modifications or repairs.

8.3.11.6. **(Added)** Tail and main rotor hubs and components [i.e. Blade(s), Pitch Link(s), Control Rods(s)].

8.3.11.7. **(Added)** Automatic and manual fuel controls and fuel pump assembly.

8.3.11.8. **(Added)** Flight control rod(s): Primary Servos and component or linkage removed, reinstalled, replaced or adjusted that result in an FCF.

8.3.11.9. **(Added)** Engine throttle and fuel control rigging.

8.3.11.10. **(Added)** Fuel Maintenance (Fuel cell replacement and fuel cell maintenance).

8.3.11.11. **(Added)** Tail boom.

8.3.16. Includes the following additional programs, if applicable:

8.3.16.1. **(Added)** Deficiency Reporting (DR) Program.

8.3.16.2. **(Added)** Air Force Repair Enhancement Program (AFREP).

8.3.16.3. **(Added)** Modification Management Program.

8.3.16.4. **(Added)** Technical Order Change Request Program.

8.3.22. **(Added)** QA will be aware of all ramp and parking area construction, to include line painting, and will work with the Programs and Resources Flight, maintenance

operations, and MOC to verify that all completed construction is correct before resuming use.

8.5.4. **(Added) Dedicated Inspector.** A Dedicated Inspector concept may be utilized. Dedicated Inspectors may be appointed by the QA Chief Inspector and aligned with a squadron. The inspector serves as the primary advisor to the squadron. Dedicated inspectors conduct face-to-face debriefing with supervisors to provide them with inspection and evaluation results. Dedicated inspectors continue to perform other QA duties; however, their inspection activities focus on their assigned squadron.

8.5.5. Conducts evaluations to ensure the IMDS matches active aircraft forms. QA is also responsible for evaluating proper aircraft status reporting procedures. If either the AFTO Form 781 or the IMDS do not match, it is considered an error.

8.9.1. Produce a Performance Plan that will at a minimum contain the following specific inspections:

8.9.1.1. **(Added)** BPO, Preflights, Thrufights and combined BPO/Preflights.

8.9.1.2. **(Added)** Towing operations.

8.9.1.3. **(Added)** Refueling and Defueling operations.

8.9.1.4. **(Added)** Launch and Recovery.

8.10.8.7. Key tasks will be identified on the RIL for each MDS. Key tasks will be called into QA for mandatory evaluation/follow-up.

8.10.8.7.1. **(Added)** Any changes to the KTL will be forwarded to the COTR office 7 days prior to implementation.

8.10.8.7.2. **(Added)** If a grounding discrepancy(s) is discovered during the KTL inspection that is likely to result in a hazardous or unsafe condition the evaluator will not sign off the inspection and will annotate the discrepancy in the aircraft forms IAW T.O. 00-20-1. Once the discrepancy(s) are corrected the KTL inspection will be reevaluated.

8.10.15.1.2.1. Also applies if the technician commits an equipment reliability error, e.g., fails to check oil during a pre-use inspection, or failure to check equipment forms, etc.

8.12. Product improvement is critical in the drive for improved mission capability, mission effectiveness, and reduced maintenance workload. QA is the focal point for all aircraft maintenance deficiency reporting, maintenance tech data, and product improvement programs. Maintainers assigned to QA must have solid technical working knowledge of aircraft maintenance in order to successfully support product improvement operations. General knowledge of contracting and supply policies and procedures is desirable.

8.12.1.2. Submit the electronic Microsoft Word version of AFTO Forms 22 to AFDW/A4MM.

8.16. Operational Check Flights (OCFs). Once the in-flight operational check is accomplished, the aircraft may continue the mission. Local OCF procedures may be combined with FCF procedures.

8.16.3.1. QA will conduct the crew briefing. QA may ask specialists with specific discrepancy and system repair knowledge to also be present during the briefing as applicable.

8.16.4. Evaluate aircraft recovering from CANN status to determine whether an FCF/OCF is appropriate before it is returned to regular service. Consider length of time the aircraft was in CANN status and the extent to which aircraft systems were affected by part removals/installations.

8.19. Develop a local W&B instruction to provide direction for local procedures and requirements. As a minimum, the local instruction will address: procedures for routing completed TCTO and modification information for aircraft W&B changes and procedures for notifying QA W&B program manager when an aircraft's weight changes. It will also address the standardized physical location of the supplemental W&B Handbook on assigned aircraft.

8.19.1.10. **(Added)** Primary or supplemental weight and balance handbook is stored in the flight deck area of all assigned rotor wing aircraft between the pilot's and co-pilot's seats. Only certified weight and balance technicians are authorized to make changes. This certification will come directly from the QA Weight and Balance Program Manager.

8.19.1.11. **(Added)** AWBS familiarization training may be accomplished by one of the following: USAF AWBS FAM (Hill AFB), AWBS training during the World Wide W&B Conference, MDS W&B TIM's, OJT by a current W&B authority. AWBS training will be documented in the individuals training record.

8.19.1.12. **(Added)** Verify weight and moment calculations on all newly assigned aircraft before the first flight. In addition, verify weight and moment calculations on aircraft that return from repairs at a depot/contractor facility before the first flight. *NOTE:* Ensure a DD Form 365-4, *Form F Weight and Balance Clearance Form*, is filled out before every flight. Preparation of the DD Form 365-4/Form F is a Flight Engineer/Pilot responsibility.

8.19.1.13. **(Added)** Organizational and intermediate level TCTOs, and permanent or temporary modifications may affect the basic aircraft weight and moment. Inspect W&B documents before the first flight, review computations for accuracy, and ensure applicable W&B records are properly documented.

8.19.2.1. **(Added)** QA Weight and Balance Program Manager:

8.19.2.2. **(Added)** Confirms the requirement for an update or aircraft weighing per TO 1-1B-50, and aircraft specific -5 TO.

8.19.2.3. **(Added)** Requests an arrival/departure ETIC for PDM aircraft to accomplish aircraft inventory, computer updates and forms documentation.

8.19.2.4. **(Added)** Ensures the aircraft preparation, leveling and weighing are in accordance with applicable aircraft TO.

8.19.2.5. **(Added)** Forwards to applicable operations squadron any weight and balance updates.

8.19.2.6. **(Added)** Ensures aircraft primary and supplemental weight and balance handbooks contain an updated DD Form 365 and Record of Weight and Balance Personnel.

8.19.3. **(Added)** Helicopter Branch:

8.19.3.1. **(Added)** The Production Supervisor notifies QA office of any updates required (i.e. seats removed, programmed depot maintenance (PDM) returns or departures). The aircrew updates all weight and balance changes at crew show or within 3 hours of takeoff on the form F per TO 1-1B-50.

8.19.3.2. **(Added)** The Production Supervisor notifies QA office directly, after all changes and documentation (AFTO 781s and AF Form 2692) are completed. Annotate all items removed from an aircraft on an AF Form 2692 (for accountability) during reinstallation and for QA office to accomplish inventories.

8.19.3.3. **(Added)** Production Supervisor notifies QA of all equipment and other items installed or removed, and for which provisions or fixed stowage were made in a definite location in the aircraft.

8.19.3.4. **(Added)** Should an aircraft require weighing, the Helicopter Branch prepares the aircraft to include: wash, de-fuel/fuel, dry drain and remove all equipment not related to the aircraft basic weight. This is accomplished prior to notifying QA that the aircraft is ready to be weighed. The Helicopter Branch is required to supply a tow team/jack team for the actual weighing process.

8.19.3.5. **(Added)** The Helicopter Branch CTK maintain aircraft scales and ensures they are calibrated when due.

8.19.4. **(Added)** Plans and Scheduling Office:

8.19.4.1. **(Added)** Notifies QA Weight and Balance Manager of any TCTO or modification affecting aircraft weight and balance.

8.19.4.2. **(Added)** Will schedule a job in IMDS for aircraft that require full weight and balance or 180-day inspections.

8.19.4.3. **(Added)** Will ensure receipt of the primary Weight and Balance book with disk and place it into the aircraft jacket file prior to the aircraft departure for PDM.

8.19.4.4. **(Added)** Notifies QA Weight and Balance Manager of the availability of the primary handbook and disk upon return of aircraft from PDM.

8.19.4.5. **(Added)** Notifies QA Weight and Balance Manager by adding an 802 action for QA when a TCTO affects equipment weight and balance.

9.2.1. **(Added)** QA will not be tasked to perform impoundment official duties. QA will be a technical advisor, if necessary, to the impoundment official.

9.3.6.1. **(Added)** An impoundment placard will be placed in clear view on equipment. Placard will identify the impoundment official and releasing authority's name, unit, and DSN.

9.3.6.2. **(Added)** No components/parts will be removed from an impoundment exhibit/s until cleared by impoundment official and or impoundment release authority.

9.6.2.1. **(Added)** The 1HS DO will be notified of 1HS aircraft impoundments.

9.6.3. QAs will develop a standardized impoundment checklist that meets local requirements. Ensure procedures are developed to safeguard CVR/FDR data upon aircraft impoundment for potential safety related incidents.

9.6.5.4. **(Added)** Contractor will ensure steps are taken to safeguard CVR/FDR data on aircraft impounded for potential safety related incidents.

9.6.13. The deployed commander will be responsible for all impoundment events at their location except for impoundment release authority.

10.2.1.2. Tool Accountability System (TAS) features allow it to perform this task, meeting the intent of this paragraph. Units are encouraged to use TAS for conducting and documenting annual inventories.

10.2.1.6. Procedures will include suspected aircraft that have already taxied or are currently flying.

10.2.1.6.1. **(Added)** 811 OG/CC will be notified of any lost tool(s) to determine if impoundment of aircraft or equipment is necessary.

10.2.1.8. To allow continued use of personal issue equipment when an individual PCS/PCAs, identify personal issue equipment (e.g., ear defenders, reflective belts, etc.) with minimum first initial, last name, and last four of the individuals social security number (SSN). The individual's employee number may be used in lieu of the last four of the individuals SSN. Markings are not required on personally issued clothing. Equipment previously identified with last name, unit, and employee number do not need to be re-etched or replaced solely to comply with new marking requirements.

10.4.1.1.7. **(Added)** Units may use TAS to aid in tracking TMDE inspections.

10.4.2. Also account for rags.

10.8.1.3. COTR office will also be notified.

10.8.1.3.1. **(Added)** If lost item/tool is on a 1HS aircraft the ODO will be notified.

10.8.1.6. COTR office will also be notified.

10.8.1.6.1. **(Added)** If lost item/tool is found the ODO will be notified.

10.8.1.7. If lost item/tool is not found on the 1HS aircraft, the ODO will notify the 1HS/DO, and the OG/CC or OG/CD.

11.34.1.1.5. This information will be reflected in the Product Improvement Program (PIP) managed by QA and will be utilized to improve R&M and support the aircraft PIWG.

14.1.1.4.1. AFDW/A4M is the MAF POC for ABDR.

14.4. This certification program is applicable to all AFDW units. Aircraft inlet/intake and exhaust inspections will be performed on the UH-1N and as required by the MDS specific technical data and this instruction.

14.8.4.1. **(Added)** The Pro Super will evaluate aircraft recovering from CANN status to determine whether an FCF/OCF is appropriate before it is returned to regular service. Consider length of time the aircraft was in CANN status and the extent to which aircraft systems were affected by part removals/installations.

14.8.4.2. **(Added)** Minimize cannibalization actions to prevent excess consumption of man-hours and resources and possible damage to functioning components.

14.8.4.3. **(Added)** Cannibalization actions will be used to reduce the number of aircraft in non-mission capable supply (NMCS) status.

14.8.4.4. **(Added)** Any and all cannibalization actions being considered on phase aircraft, engine spares, and combining gearbox spares will be approved by the Production Supervisor or the Helicopter Branch Manager.

14.8.4.5. **(Added)** Only those individuals designated on the Special Cert. roster IAW AFI 21-101 guidance have the authority to authorize a cannibalization. Verify that the component needed cannot be sourced from on-base assets; consider man-hour availability and the risk of damaging serviceable equipment. Ensure the following steps are taken:

14.8.4.5.1. **(Added)** Ensure a discrepancy is entered in the IMDS database using screen #073.

14.8.4.5.2. **(Added)** Load the cannibalization discrepancy into IMDS using screen #083. Ensure both the "T" and "U" actions are correct. Check IMDS using screen #380 to ensure both the aircraft canned from and to have the correct discrepancy. Use screen #907 to sign off "T" action (WCE 001 of Cann # -- removal of canned item). The "U" action (WCE 002) is completed on installation of new part from supply.

14.8.4.5.3. **(Added)** When a time change item is canned, notify Plans, Scheduling, and Documentation immediately. Ensure both the IMDS database and AFTO Form 95/781E historical records are updated prior to the next flight.

14.8.4.5.4. **(Added)** Ensure Cannibalization Log is updated.

14.10.4.3. Ensure local procedures address access limitations and requirements prior to beginning recovery efforts and preservation of CVR/FDR data.

14.10.5.5.1. Initial response checklists (to protect personnel, aircraft, or other property from further damage, etc.).

14.10.5.5.3.1. **(Added)** Availability and location of CDDAR response equipment (e.g., snatch cables, tow bars, shoring, bump hats, gloves, shovels, wheel/tire assemblies).

14.10.5.5.3.2. **(Added)** Availability of equipment (e.g., cranes, dollies, jacks, tow vehicles) through lateral or contract sources (e.g., host support, local heavy equipment operators) if not organically possessed, and procedures for

getting the equipment when needed.

14.10.5.5.3.3. **(Added)** Maintain a list or matrix of equipment, resources, and personnel CDDAR capabilities.

14.10.5.6.1.6. **(Added)** Local defuel capabilities and fuel spill control clean up procedures.

14.10.6.2. Basic CDDAR qualifications include aircraft towing, landing gear replacement, aircraft jacking, aircraft defuel/de-servicing.

14.11.1.1. AFDW/A4M is the MAJCOM OPR for the DOP Program.

14.11.1.2. All maintenance personnel involved in on-equipment maintenance will receive annual DOP awareness training. This training will consist of viewing the DOP video, "Dropped Object Prevention Program." Training will be tracked in the IMDS.

14.11.1.3. Document DOP inspections in the AFTO Form 781A using a Red X symbol.

14.11.1.3.1. **(Added)** DOP inspections will be accomplished before flight. When an aircraft lands and a pre-flight or thru-flight is not required, a DOP inspection is not required before the next flight. If the aircraft is to remain on alert status a DOP inspection is not required after thru-flights.

14.11.1.3.1.1. **(Added)** Aircraft released from alert status will require a new DOP inspection prior to flight or reassuming an alert posture.

14.11.1.4.1. **(Added)** Include type of failure (e.g., Material, Personnel, or Non-Preventable).

14.11.1.4.2. **(Added)** Use AFI 65-503 (current FY and total average) to calculate labor costs.

14.11.1.4.3. **(Added)** Include specific actions taken to prevent recurrence.

14.11.1.5.1. The DOP program monitor will report dropped objects by sending reports to AFDW/A4M.

14.11.1.5.1.1. **(Added)** Initial dropped object reports are submitted IAW AFMAN 10-206 if applicable; otherwise initial reports may be combined with the final report within 3 duty days. Final reports will be approved by OG/CC or equivalent prior to being sent. Send final reports to AFDW/A4M. DOP investigations will include notifying the previous departure location if possible.

14.11.1.6. **(Added)** The DOP monitor will be assigned to contractors QA.

14.11.1.7. **(Added)** Conduct quarterly DOP program meetings chaired by the WG/CV. The DOP program meeting may be combined with other quarterly meetings (e.g., FOD). The meeting will include review of previous dropped objects for corrective actions and future prevention and will develop opportunities for product improvement. The meeting will also include a review of like-MDS dropped objects from across the command.

14.18.5.6.2.1. **(Added)** When there are no FCCs available, commanders may send qualified maintenance personnel in MGP status to accomplish ground duties in order to meet mandatory aircraft support requirements.

14.18.5.6.7. **(Added)** 1HS/CC will ensure FCCs receive an indoctrination course on emergency procedures and proper use of emergency equipment as outlined in AFI 11-202, Volume 3, *General Flight Rules* Chapter 6. This event will be tracked and documented in the IMDS. It will be completed as part of the FCC qualification requirements before selecting an individual for FCC duty. The FCC will receive annual refresher training for this event after indoctrination.

14.18.5.7.1. Contractor will provide a quarterly summary to the 1HS/CC, 1HS/DO and COTR on the status of the FCC program.

14.18.5.11.6. **(Added)** FCCs will not perform maintenance or aircrew duties in flight except during bona fide emergencies at the direction of the AC.

14.18.6.1.1. At a minimum Contractor FCC's will be qualified to clear grounding discrepancies in their primary duties.

14.18.6.1.2.10.1. **(Added)** DOPP qualified

14.18.10. **(Added)** FCC responsibilities include:

14.18.10.1. **(Added)** Ensure a Dash-6 preflight; thru flight or preflight/basic post flight inspection is completed before crew show, as applicable.

14.18.10.2. **(Added)** Maintain aircraft forms IAW TO 00-20-1. Transcribe forms when necessary. Transcribed forms will remain with the aircraft until they can be turned in to the home station PS&D.

14.19.2.1. Contractors not certified to clear grounding discrepancies may be trained and qualified to perform inlet/intake/exhaust inspections and may clear the Red X if certified on limited Red X for engine inlets and exhaust.

14.19.2.11. Contractor will conduct a minimum of one FOD walk per week. Tenant units will follow the host base requirements. The wing FOD monitor will develop a FOD walk plan that includes unit areas of responsibility. Maximum participation is essential for an effective program. Airfield managers are responsible for runway FOD inspections.

14.19.2.12.2. **(Added)** The following information will be sent to the owning organization with an info address to AFDW/A4M, 11 WG/CC, and 811 OG/CC.

14.19.2.12.3. **(Added)** Organization, location, and date of occurrence.

14.19.2.12.4. **(Added)** Aircraft type and tail number.

14.19.2.12.5. **(Added)** Item damaged. If the item is an engine, provide type, model and series; installed position number; time since overhaul (TSO), and time since new (TSN).

14.19.2.12.6. **(Added)** Brief description of the incident.

14.19.2.12.7. **(Added)** Disposition of damaged items.

14.19.5.5. Contact AFDW/A4M functional managers for resolution.

14.19.5.6.1. Wing FOD monitor will inform AFDW/A4M FOD manager by telephone or email of any preventable FOD incidents as soon as the damage is known. Establish unit FOD control numbers as follows: unit designator, fiscal year, and a three-digit number. Each wing FOD monitor will maintain monthly FOD data and submit a semiannual and annual Foreign Object Damage (FOD) Report to AFDW/A4M by message or E-mail NLT April 21 and October 18. The report will include the yearly cumulative FOD data in the following format:

14.19.5.6.1.1. **(Added)** Causes of Preventable and Non-Preventable FODs exceeding 20K.

14.19.5.6.1.2. **(Added)** Cumulative cost of Preventable and Non-Preventable FODs.

14.19.6. FOD monitor will notify COTR office prior to quarterly meetings.

14.19.6.1.14. **(Added)** Additionally, address all cross tell program information, tire changes due to FOD, and observations of effectiveness of the FOD Prevention Program.

14.20.2. All IPIs will be written up separately for on-equipment.

14.22.3.2. Report category 2 Hangar Queen aircraft to AFDW/A4M NLT than 24 hours after entering status.

14.22.3.3. Report category 3 Hangar Queen aircraft to AFDW/A4M NLT than 24 hours after entering status.

14.28.1.3. No MAF requirement exists for maintenance during non-contingency operations, apart from tech order requirements.

14.30.1. IMDS entries will be completed within 30 minutes after aircraft departure.

14.34. SCR.

14.34.6. **(Added)** For the purpose of Table 14.1, Contractors will meet military grade requirements.

Table 14.1. Mandatory Special Certification Roster (SCR) and Prerequisites.

	A	B
Item	Mandatory SCR Item Titles	Prerequisites
*39 (Added)	Jacking Supervisor	Minimum 7-skill level (or civilian equivalent) with 6 months weapon system experience (Note 2)
*40 (Added)	Jacking Manifold Operator	Minimum 5-skill level (or civilian equivalent) with a minimum of 6 months weapon system experience (Note 2)
*41 (Added)	Hangar Door Operations	(Note 3)
*42	Cannot Duplicate (CND)	Minimum 7-skill level (or civilian equivalent) with a

(Added)		minimum of 1 year weapon system experience (Note 2) (OG/CC may waive selected 5-skill levels)
*43 (Added)	Repeat/Recur	Minimum 7-skill level (or civilian equivalent) with a minimum of 1 year weapon system experience (Note 2) (MXG/CC may waive selected 5-skill levels)
*44 (Added)	Limited Red X Aircraft Engine Inlet/Exhaust Inspections	Minimum 5-skill level (Note2)
*45 (Added)	DOP Inspector	Minimum 7-skill level (or civilian equivalent). (OG/CC may waive selected 5-skill levels)

14.37.1.1. This requirement is satisfied by documenting completion in the IMDS.

18.8.1.3. 1 (Added) Refresher training for full-time COTRs will take place immediately upon any changes/modifications to the contract, PWS, PMAP, or technical risk. This training will be provided by the FC/FD, QAM, QAPC or PCO as appropriate. Alternate COTR refresher training will be conducted by the Chief COTR and/or the PCO. It will consist of, as a minimum, any changes to the contract or PMAP, policy and procedure changes, identification of high technical risk areas, and discussion of potential problem trends, as well as COTR surveillance and documentation requirements.

18.8.2. MAJCOM Training. All QAEs monitoring aircraft and aircraft related maintenance contracts must successfully complete Phase I & Phase II training within 90 days of assignment to QAE duties.

DARREN W. MCDEW, Maj Gen, USAF
Commander, Air Force District of Washington

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

AFI 21-101, Aircraft and Equipment Maintenance Management, 26 July 2010

Abbreviations and Acronyms

- AFD—Air Force District of Washington
- AFMC—Air Force Material Command
- AFREP—Air Force Repair Enhancement Program
- AWM—Awaiting Maintenance
- AWP—Awaiting Parts
- CLS—Contract Logistics Support
- COTR—Contract Officers Technical Representative
- DIT—Data Integrity Team
- DO—Director of Operations
- DOP—Dropped Object Prevention
- DT&E—Development Testing and Evaluation
- FD/FC—Functional Director/Commander
- HHQ—Higher Headquarters
- IOT&E—Initial Operational Testing and Evaluation
- IMT—Information Management Tool
- LEP—List of Effective Pages
- MRT—Maintenance Recovery Team
- MGP—Mission Ground Personnel
- MT—Maintenance
- MXG/CC—Maintenance Group Commander
- NAOC—National Airborne Operations Center
- NCOIC—Noncommissioned Officer in Charge
- ODO—Operations Duty Officer
- OS—Operations Squadrons
- OSS—Operations Support Squadron
- PAI—Primary Aircraft Inventory
- PCO—Primary Contracting Officer

- PMAP—Performance Management Assessment Program
- POC—Point of Contact
- Pro Super—Production Superintendent
- PS&D—Plans, Scheduling and Documentation
- QASP—Quality Assurance Surveillance Plan
- TSN—Time Since New
- TSO—Time Since Overhaul
- UTE —Utilization
- VCO—Vehicle Control Officers
- WLAN—Wireless Local Area Network
- WSL—Weapon System Lead
- WWNDB—World Wide Navigation Database
- WX—Weather
- 1HS—1st Helicopter Squadron

Terms

Aircraft Impoundment—Isolation of an aircraft due to an unknown malfunction or condition making it unsafe for flight.

Alternate Mission Equipment (AME)—Equipment identified to a higher end-item, not listed in the table of allowance. Normally, Dash-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.

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.

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.

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.

Crash Damaged or Disable Aircraft Recovery (CDDAR)—The ability to move damaged or disabled aircraft using specialized equipment

Debriefing—Program designed to ensure malfunctions identified by aircrews are properly reported and documented.

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.

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.

Flight Chief—NCO responsible to the maintenance officer or superintendent for management, supervision, and training of assigned personnel.

In—Process Inspection (IPI)—Inspection performed during the assembly or reassembly of systems, subsystems, or components with applicable technical orders.

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 Command—Lead Commands (IAW PAD 07-13) provide policy development and enforcement; studies and analysis; force development; and training management for assigned units (e.g., wings) and for those they provide reachback support to in component commands .

Levels—Computed and authorized requirements for a quantity of assets.

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.

Mission Design Series (MDS)—Alpha and numeric characters denoting primary mission and model of a military weapons 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, and items deleted from bench stock.

Operational Readiness Inspection (ORI)—Inspection that measures a unit's war fighting readiness.

Organizational Level Maintenance—Maintenance consisting of those on-equipment tasks normally performed using the resources of an operating command at an operating location.

Primary Aerospace Vehicle Authorized (PAA)—Aircraft authorized for performing a unit's mission (e.g., combat, combat support, training, test & evaluation). The PAA forms the basis for allocating operating resources to include manpower, support equipment, and flying hour funds. The operating command determines the PAA required to meet their assigned missions. —Authorized refers to the number and type of aircraft an organization is programmed to possess.

Primary Aerospace Vehicle Inventory (PAI)—Aircraft assigned to meet the PAA. —Inventory refers to the number of aircraft actually assigned to a unit and identified against a corresponding authorization.

Production Superintendent—Senior NCO responsible for squadron maintenance production. Directs the maintenance repair effort.

Programmed Depot Maintenance (PDM)—Inspection requiring skills, equipment, or facilities not normally possessed by operating locations.

Quality Assurance (QA)—Individual who monitors a contractor on a daily basis and who is involved in every aspect of a contract to ensure the contractor is in compliance with that contract.

Quarterly Evaluation (QE)—Recurring calendar task evaluations required by munitions and weapons personnel.

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.

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.

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.

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.

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.

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.

Weight and Balance (W&B) Program—Program used in calculating, verifying, updating, and computing weight and balance on a weapon system.

Attachment 2 (Added)

AFDW AIRCRAFT ACCEPTANCE INSPECTION CHECKLIST

AIRCRAFT TAIL NUMBER: _____		POSSESSION DATE: _____	
	ITEM	INITIALS	
		C/W	N/A
1.	Review depot/contractor maintenance contract specifications as required.		
2.	Record AI MIS Job Control Number (JCN): _____		
3.	Verify MIS entries and due dates for all configuration managed items, time change items, special inspections, TCTOs, engines and engine components.		
4.	Inspect aircraft painted at depot contract facilities for quality and condition of paint.		
5.	Complete BPO and preflight or combination thereof or after flight and preflight as applicable.		
6.	Record specific aircraft configuration and identify -21 equipment installed on the aircraft using AF Form 4076 or AF Form 2692 for aircraft that do not have a -21 TO.		
7.	Up-load (if applicable) of any -21, alternate mission equipment, cargo handling equipment and life support equipment that was removed prior to depot input.		
8.	Verify depot level TCTO accomplishment.		
9.	Accomplish an aircraft document review.		
10.	Complete all weight and balance requirements IAW AFDW OI and applicable technical data.		
11.	Document all discrepancies found using Form 781A and the MIS.		
12.	Forward all discrepancies with supporting material to QA.		
13.	Prepare report within 13 calendar days of possession all critical, major and minor discrepancies and forward report IAW TO 00-35D-54.		

Attachment 3 (Added)

AFDW ENGINE ACCEPTANCE INSPECTION CHECKLIST

ENGINE MODEL NUMBER: _____		POSSESSION DATE: _____	
ENGINE SERIAL NUMBER: _____			
	<u>ITEM</u>	INITIALS	
		C/W	N/A
1.	Review depot/contractor maintenance contract specifications as required.		
2.	Check for shipment damage, loose or missing items/parts and safety of flight items that are readily observable.		
3.	Verify depot level TCTO accomplishment.		
4.	Accomplish an engine document review.		
5.	Document all discrepancies found using the appropriate form and the MIS.		
6.	Forward all discrepancies with supporting material to QA.		
7.	Prepare report within 13 calendar days of possession all critical, major and minor discrepancies and forward report IAW TO 00-35D-54.		