BY ORDER OF THE
433D AIRLIFT WING COMMANDER

AIR FORCE INSTRUCTION 21-101_AFRCSUP_433D AIRLIFT WING
Supplement

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MAINTENANCE

AIRCRAFT AND EQUIPMENT MAINTENANCE MANAGEMENT

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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(Added) This publication implements Air Force Policy Directive (AFPD) 21-1, *Maintenance of Military Materiel* and aligns and extends guidance of Department of the Air Force Instruction (DAFI) 21-101, *Aircraft and Equipment Maintenance Management* and Air Force Instruction (AFI) 21-101-Air Force Reserve Command Supplement (AFRCSUP), *Aircraft and Equipment Maintenance Management*. This supplement applies to all 433D Maintenance Group (MXG) and associated units who use and maintain equipment. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) AFI 33-322, *Records Management and Information Governance Program*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the Air Force (AF) Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. This publication may not be supplemented or further implemented/extended. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the requestors commander for non-tiered compliance items.

1.7.2.1.1.1. The guidance for requirements and controls are outlined in Air Force Manual (AFMAN) 17-1301, *Computer Security (COMPUSEC),* without incurring requirements for waivers, DAFI 21-101 and TO 33-1-38, *Cybersecurity for Automatic Test Systems and Automatic Test Equipment in Field Specialty Code (FSC).* Additional information regarding information

assurance requirements and training can be found at: **https://cs2.eis.af.mil/sites/10060/default.aspx**.

1.7.2.1.2. Only government equipment authorized for C-5M aircraft or specialized equipment technical orders (TO) will be connected to Platform Information Technology or other DoD Information Technology via Universal Serial Bus (USB), card reader, cannon plug, Bluetooth, Infrared, WiFi or other connection method not yet developed.

1.7.2.1.2.1.1. **(Added)** 433D Airlift Wing personnel with appropriate administrative permissions will install updates, security patches and software as directed by Air Force Network Alerts on Air Force Enterprise network enabled desktops, laptops, connected electronic tools (eTools) and other Personal electronic Devices. Technical Order Distribution Office (TODO) will perform the software and configuration updates for eTools Lite Equipment (i.e. iPads, Macbook Pros, etc.).

1.7.2.1.2.1.2. **(Added)** 433AW members will scan all approved removable media to include Automated Computer Program Identification Number System (ACPINS), software downloaded from government sites, (e.g., Automated Weight & Balance Systems (AWBS), Electronic Software Distribution System, etc.) and flight data or faults from aircraft which facilitate data transfer across an "Air Gap".

1.7.2.1.2.5. If members suspect malicious code/cyber issues while using government information technology equipment, they must immediately report and take remedial actions IAW TO 33-1-38. All 433AW users will immediately discontinue use, report and turn into the appropriate functional authority Information Technology and Platform Information Technology, (433MXG Wing Avionics Manager, 433AW Cybersecurity Office, and the Mission Defense Teams/Cyber Squadron, if assigned) any malicious code, software or unauthorized use detection.

2.1. Roles & Responsibilities.

2.4.30. Procedures for locally manufactured, developed or modified tools is located in paragraphs **9.17.1** through **9.17.1.2.3** within this supplement.

2.4.47. Cannibalization (CANN) procedures for 433MXG are found in paragraphs **11.13.3** through **11.13.3.3.4.4** within this supplement.

2.8.3.1. 433MXG member will complete initial and annual Cyber Discipline and documented IAW DAFI 36-2670, *Total Force Development* and 433d Maintenance Group Instruction (MXGI) 21-117, *Aircraft Maintenance Training Program* for all DoD personnel utilizing Personal electronic Devices, computers or test equipment that may be connected to weapon system Platform Information Technology and could result in malware intrusion into DoD Information Technology or Platform Information Technology.

2.8.3.1.1. **(Added)** Initial cyber discipline training will be given by 433MXG Training Manager and will be briefed annually during block training.

2.8.3.1.2. **(Added)** Maintenance personnel will utilize the AF Form 2426, *Training Request and Completion* and send to 433MXG Training Office for update in the Maintenance Information System (MIS) for training course code Ancillary (ANCL) 000002.

2.8.3.1.3. **(Added)** Non-maintenance personnel will receive training through any combination of classroom instruction, computer based training, block training or testing procedures as coordinated with their Unit Training Manager. Training will be documented through AF Form 1098, *Special Task Certification and Recurring Training* or automated training program.

2.8.3.1.4. **(Added)** Cyber Discipline Training will include the following elements:

2.8.3.1.4.1. **(Added)** User explanation of Authorized versus Non-Authorized Uses.

2.8.3.1.4.2. **(Added)** Quarantine and turn-in for media, equipment or computer suspected of having malware to appropriate work center supervisor and/or appropriate Cyber manager IAW TO 33-1-38.

2.8.3.1.4.3. **(Added)** Recent cyber incidents, (if any) that have degraded or damaged weapon systems to include lessons learned.

3.7.1.1. 433MXG will follow the published debrief checklist located on the 433MXG Community Share Drive (for downloading) or on the iPads and share drive for viewing.

3.7.1.2. **(Added)** Aircrew Debrief Guidance. (All checklists and check sheets can be found on the 433MXG Community Share Drive (for download) and iPads).

3.7.1.2.1. **(Added)** Aircrew:

3.7.1.2.1.1. **(Added)** Aircrew will ensure all crew discovered discrepancies are entered in the aircraft forms.

3.7.1.2.1.2. **(Added)** Flight engineer will ensure flight data is finalized after flight and transferred to the Removable Memory Module card before proceeding to debrief.

3.7.1.2.1.3. **(Added)** Aircrews will be debriefed after every flight. Exceptions to this are engine running crew changes, aircraft returns after hours, and scheduled turn-around sorties if returned with landing status code 1 or 2.

3.7.1.2.1.4. **(Added)** Aircrew will deliver aircraft forms to debrief office on all after hour returns (Locals and Cross-country missions).

3.7.1.2.2. **(Added)** Personnel assigned to Debrief Aircraft Maintenance Squadron (AMXS) and Maintenance Operations Center (MOC):

3.7.1.2.2.1. **(Added)** AMXS personnel assigned to debrief will be collocated with MOC.

3.7.1.2.2.2. **(Added)** Debrief personnel will augment MOC assisting in all MOC programs and requirements.

3.7.1.2.2.3. **(Added)** MOC personnel will complete all debrief procedures/tasks when Debrief Section personnel are absent.

3.7.1.2.2.4. **(Added)** Will conduct debrief utilizing the 433d C-5M Debrief Checklist.

3.7.1.2.2.5. **(Added)** Production Supervisor or equivalent will notify crew on location of debrief (aircraft or debrief office).

3.7.1.2.2.6. **(Added)** In the event of the MIS outage, debrief will collect all information entered on local worksheets, keep in the debrief office continuity binder and will be input as soon as possible after the MIS comes back on line.

3.7.1.2.2.7. **(Added)** Debrief section will accomplish C-5M removable memory module data card uploads into G081 within 24 hours of debrief to ensure all flight data recordings and Aircraft Structural Integrity Program aircraft usage data are collected IAW AFI 21-101-AFRCSUP paragraph 3.7, DAFI 63-140-AFRCSUP, *Aircraft Structural Integrity Program* and 433d C-5M Debrief Checklist (located on the 433MXG Community Share Drive, for downloading and iPads).

3.7.2. **Debriefing Aborts, Dropped Objects and In Flight Emergencies Incidents Procedures.**

3.7.2.1. **(Added)** Debriefs will be conducted with Subject Matter Expert present along with Production Supervisor or equivalent.

3.7.2.2. **(Added)** Reference the C-5M Debrief Checklist located on the Air Mobility Command SharePoint as needed to ensure a thorough debrief is conducted.

3.7.2.3. **(Added)** Production Supervision and Debrief Section will ensure all required authorities have been notified and the Production Supervisor or equivalent will evaluate these discrepancies to determine if they should be elevated for possible aircraft impoundment IAW AFI 21-101-AFRCSUP and this supplement **paragraph 7.2.1**.

5.2.2.1.17.1. The 433MXG Maintenance Operations notification checklists with listed procedures of who to contact, as described on each checklist, are located on the 433MXG Community Share Drive and are on the iPads.

6.4.11. The High-Speed Taxi check is found in **paragraph 6.12.1.6** in this supplement.

6.10.5. 433MXG TODO accomplishes the new increments list by creating an adobe copy of the weekly list and inserts into the Daily MX Meeting folder on the 433MXG Community Share Drive for the production meeting held weekly in review for supervisors.

6.10.5.3. Official Time Compliance Technical Orders (TCTO) and One Time Inspections (OTI) will be processed and distributed via the MXG TODO.

6.10.5.3.1. **(Added)** Quality Assurance (QA) TODO Responsibilities:

6.10.5.3.1.1. **(Added)** The QA TODO will determine the applicability of all newly received TCTOs/OTIs, will confirm with the Weight and Balance (W&B) Manager and subject matter expert the applicability and will be present at the planning meetings (if available).

6.10.5.3.1.2. **(Added)** Publish all local maintenance directed OTIs in accordance with DAFI 21-101 and TO 00-20-1, *Aerospace Equipment Maintenance Inspection Documentation, Policies, and Procedures*, with MXG Commander (MXG/CC)/or Deputy Commander (MXG/CD) signature.

6.10.5.3.2. **(Added)** Work Center Supervisor Responsibilities:

6.10.5.3.2.1. **(Added)** Work center supervisors are responsible for ensuring currency and accuracy of locally developed technical data in accordance with TO 00-5-1, *AF Technical Order System* and 00-5-1-AFRCSUP, *AF Technical Order System* and notifying TODO when changes to equipment and procedures occur.

6.10.5.3.2.2. **(Added)** Supervisors will assign a Primary and up to 3 Alternate TODAs and inform the TODO by providing a copy of the most current appointment letter (request blank template from TODO and ensure:

6.10.5.3.2.2.1. **(Added)** Account familiarization is conducted by the previous TODA to the new appointee.

6.10.5.3.2.2.2. **(Added)** Monitors have received the appropriate computer based training (CBT) within 90 days of appointment and are thoroughly familiar with this instruction, TO 00-5-1/TO 00-5-1-AFRCSUP and TO 00-5-15, A*ir Force Time Compliance Technical order Process*.

6.10.5.3.3. **(Added)** TODA Responsibilities:

6.10.5.3.3.1. **(Added)** Maintains the Enhanced Technical Information Management System (ETIMS) library account and binder of physical media containing the sections as it states starting with TO 00-5-1-AFRCSUP, paragraph 4.5.1.

6.10.5.3.3.2. **(Added)** To request for new and replacement TOs or replacement pages for TO or media, the TODA must use the local generated TO request work sheet. The TODO will provide the blank copy when requested.

6.10.5.3.3.3. **(Added)** All reported missing, lost or stolen TOs, includes eTools equipment, must submit an AFRC form 174, *Lost Tool/Object Report* to the TODO.

6.10.8.1. **The following quarantine procedures will be as follows for the 433MXG.**

6.10.8.1.1. **(Added)** In the event of an aircraft or equipment mishap, the following procedures for locking down iPads are as follows:

6.10.8.1.2. **(Added)** Supervisors of maintainers who were working on the aircraft or equipment with the mishap, will confiscate each individual's iPad and bring to the CTK where they checked them out. **Note:** These iPads will not be cleared from the Tool Control System (TCMax), but need to be marked as "on hold" in the notes in TCMax until the investigation is completed.

6.10.8.1.3. **(Added)** Supervisors of the CTK monitors will ensure they lock down the cabinets to which these iPads were checked out of and keep them and the Macbook locked up until the entire investigation has been completed.

6.12.2.1.1. **C-5 Functional Check Flight (FCF), Operational Check Flight (OCF) and High Speed Taxi Check Program.** (All checklists and check sheets can be found on the 433MXG Community Share Drive (for download) and on the iPads).

6.12.2.1.2. **(Added)** The 433D MXG/QA office and AMXS and/or Maintenance Squadron (MXS) superintendents will evaluate aircraft maintenance activities to determine if a FCF, OCF or High Speed Taxi Check is required before returning an aircraft to regular service. Aircraft recovering from CANN status, isochronal inspections and/or Contract Field Team repair will be evaluated to determine if an FCF, OCF or High Speed Taxi Check is required based on the type and degree of maintenance.

6.12.2.1.3. **(Added)** Functional Check Flight (FCF).

6.12.2.1.3.1. **(Added)** FCF's are determined by the requirements outlined in TO 1-1-300, *Maintenance Operational Checks and Check Flights,* TO 1C-5M-6, *Scheduled Inspection and Maintenance Requirements* or as directed by the 433D MXG/CC.

6.12.2.1.3.2. **(Added)** The Operations Group (OG) Commander (OG/CC), or equivalent, will select a qualified and thoroughly experienced individual to serve as FCF/OCF Officer in Charge (OIC). The OIC serves as a subject matter expert for FCF/OCF issues in the operations community and will interface with the QA FCF Monitor in the scheduling activities of FCF's, OCF's and High Speed Taxi Checks.

6.12.1.3.3. **(Added)** AFMAN 11-2C-5V3, *C-5 Operations Procedures,* Chapter 5, outlines the procedures that will be followed in the event an FCF is required. If it becomes necessary to accomplish an FCF at Joint Base San Antonio, Lackland, the 433D MXG/CC will coordinate with the 339th Flight Test Squadron/Director Operations Validation (FLTS/DOV) at Robins AFB, Georgia (GA).

6.12.1.3.4. **(Added)** 433MXG QA office and the applicable Maintenance Flight Chief Superintendent will serve as the Point of Contact on briefing FCF aircrews on matters concerning the discrepancies and/or conditions prompting the necessity of the FCF. QA will ensure Air Force Technical Order (AFTO) Form 781, *Arms Aircrew/Mission Flight Data Document* and the aircraft primary W&B forms are available for review and discussion.

6.12.1.3.5. **(Added)** 433MXG QA office will use and maintain an AF Form 2400, *Functional Check Flight Log*, or equivalent automated product, to provide historical information on all FCF's and OCF's.

6.12.1.4. **(Added)** Operational Check Flights (OCF).

6.12.1.4.1. **(Added)** OCF's are determined by the requirements contained in TO 1C-5M-6, TO 1C-5M-1, *Flight Manual USAF Series C-5M and C5M (SCM) Airplanes* and applicable TCTO. OCF's can be performed by aircrews that are not FCF qualified; however, OCF's will be flown by highly experienced aircrews. All OCF's will be approved and/or directed by the 433MXG/CC. Under normal circumstances, the MXG point of contact will provide 48 hour notification to 433D Operations Support Squadron/Current Operations to ensure aircrew availability.

6.12.1.4.2. **(Added)** Coordination between the following agencies is vital to this program:

6.12.1.4.2.1. **(Added)** QA will be the POC between maintenance and operations. They will schedule timely briefings to discuss the flight profile and operational checks required.

6.12.1.4.2.2. **(Added)** OG Standardization & Evaluation (OGV) will coordinate to provide highly qualified pilots, flight engineers and all other necessary crew members to accomplish the required checks. As a minimum, the crew should include a highly experienced instructor or evaluator pilot, and instructor engineer and a first engineer.

6.12.1.4.2.3. **(Added)** AMXS and MXS will evaluate aircraft and recommend whether or not an OCF is required before returning the aircraft to regular service. AMXS and MXS will provide information on all maintenance/repair actions and provide specialist representatives to discuss any affected systems. If an in-flight operational check of the Ram Air Turbine (RAT) is due, AMXS Production Supervisor and/or MXS Production Supervisor will coordinate with Plans, Scheduling and Documentation (PS&D) to restrict the aircraft to local flight area pattern to perform the in-flight check.

6.12.1.4.2.4. **(Added)** The MXG/CC shall determine whether an OCF should or will be requested and scheduled. Under circumstances other than those specified in the aircraft -6 inspection manual, the need for an aircraft check flight following maintenance or repair work is an engineering decision to be exercised by the commander. Such decisions will be based upon the scope of work accomplished and consideration of the affected components relative to safety of operation.

6.12.1.4.3. **(Added)** All CANN and isochronal status aircraft will require a Safety of Flight evaluation to determine whether a FCF or OCF is required before returning the aircraft to regular service. Maintenance supervision will identify to QA any maintenance actions that may require an FCF/OCF. **Note:** Length of time in CANN and the extent to which aircraft systems were affected by part cannibalization are key factors when requesting a FCF or OCF.

6.12.1.5. **(Added)** In-Flight Operational Checks.

6.12.1.5.1. **(Added)** Maintenance operational checks will be accomplished upon the request from maintenance to perform in flight IAW TO 00-20-1, paragraph 5.4.1.1.3.

6.12.1.5.1.1. **(Added)** In-flight operation checks will be documented by maintenance stating the purpose and operational check required by the maintenance TO.

6.12.1.5.1.2. **(Added)** Maintenance will contact QA if it has been determined that an in-flight operational check is required. QA will coordinate and follow the In-Flight Operational Check Sheet with the applicable agencies.

6.12.1.6. **(Added)** High Speed Taxi Checks. The MXG/CC and OG/CC may authorize high speed taxi checks when a maintenance ground operational check requires aircraft movement at higher than normal taxi speeds (with qualified FCF aircrews) to operationally check completed maintenance. Maintenance will contact QA if it has been determined that a high speed taxi check is required. QA will follow the High Speed Taxi Briefing Check Sheet in conjunction with FCF/OCF Procedural Check Sheet and coordinate with applicable agencies.

6.15. 433MXG Weight and Balance Program.

6.15.3.1.1. **(Added)** Must ensure that their qualification for W&B is on the Special Certification Roster.

6.15.3.1.2. **(Added)** Verify aircraft inventories prior to next flight whenever AMXS Support Flight (-21) equipment is removed/installed.

6.15.3.1.3. **(Added)** Maintain W&B primary and secondary handbooks for all assigned C-5 aircraft. Primary handbooks will be stored in the AWBS program. Secondary handbooks are stored in the flight station crew compartment in the wall pocket under the crew table.

6.15.3.2.3. **(Added)** Send an updated W&B schedule detailing the latest weight and moment data to the chief evaluator loadmaster at OGV Quarterly.

6.15.3.3. Specific TCTO: W&B Managers will review each TCTO and sign the distribution sheet the TODO accompanies with the TCTO before a meeting. This is done to ensure of any changes to the W&B of each aircraft is/or is not deemed necessary.

6.15.3.8. **(Added)** PS&D will store W&B records with the aircraft historical records for transfer of aircraft.

6.16. (Added) Procedures for Program Depot Maintenance Input/Acceptance.

6.16.1. **(Added)** Prior to aircraft weigh for Program Depot Maintenance:

6.16.1.1. **(Added)** W&B Managers will:

6.16.1.1.1. **(Added)** Export transfer data file onto the aircraft's AWBS database central server.

6.16.1.1.2. **(Added)** Deliver the updated primary handbook to PS&D. In lieu of sending hard copy data, the AWBS files may be sent electronically to the appropriate agency.

6.16.1.2. **(Added)** AMXS Support Flight will accomplish a -21 equipment inventory after removing/installing items effecting aircraft weight.

6.16.1.3. **(Added)** PS&D will forward the primary handbook to Program Depot Maintenance.

6.16.2. **(Added)** Return of Aircraft from Weigh, Program Depot Maintenance and Un-programmed Depot Maintenance:

6.16.2.1. **(Added)** W&B managers will:

6.16.2.1.1. **(Added)** Import the aircraft data file into the AWBS and verify:

6.16.2.1.1.1. **(Added)** Updated Defense Department (DD) Form 365-2, *Aircraft Weighing Record*, reflects the latest weight and verify that the weight is posted on the Chart C and is filed in the primary handbook. Contact Program Depot Maintenance W&B manager if the latest weight is not entered or if the data file is suspected to be corrupt or inaccurate.

6.16.2.1.1.2. **(Added)** Paper copy of the Chart A, DD Form 365-2 and Chart C are filed in the primary handbook showing Program Depot Maintenance weight data.

6.16.2.1.2. **(Added)** Conduct a complete aircraft inventory after upload of -21 equipment and prior to the first flight. Update the AWBS and primary/secondary handbook.

6.16.2.3. **(Added)** PS&D will: Deliver returned W&B handbooks to W&B Managers as necessary and keep record for aircraft historical data in the aircraft folder.

6.16.3. **(Added)** TODO will provide a copy of the TCTO to the W&B manager on a distribution sheet to sign for verification of a needed or not needed W&B to be accomplished.

7.2.5. **(Added) Local Impoundment Program Procedures, Requirements and Responsibilities.** (All necessary placards are located within the TO LCL-433AW-10-23, *433d MXG Impoundment Checklist* and published on the 433MXG Community share drive (for downloading) and iPads).

7.2.5.1. **(Added)** Overview Information. Aircraft/equipment may be impounded for the following reasons: When an aircrew reports an uncommanded flight control malfunction; unusual operating performance; aircraft/equipment is involved in an incident; a manufacturer's defect is suspected; or when required for an investigation exhibit. DAFI 21-101, Chapter 11 lists specific reasons why aircraft/equipment may be impounded. 433MXG QA will keep end reports for aircraft impoundments on file for 3 years.

7.2.5.2. **(Added)** Responsibilities.

7.2.5.2.1. **(Added)** The 433MXG QA acts as the OPR for impoundment procedures. If the cause of the discrepancy could potentially affect other aircraft/equipment in the fleet, QA notifies the Impoundment Authority and will consider the cross-tell value of the information for up-channeling to the Major Command weapons system manager.

7.4. The Impoundment Official ensures only authorized personnel have access to the impounded aircraft/equipment. Additionally, they ensure parts removed are carefully controlled to ensure that parts, once confirmed as the cause for impoundment, are available to be processed as deficiency report exhibits.

7.4.4. **(Added)** The MOC will coordinate actions required during the impoundment investigation as needed for the Impoundment Official.

7.4.5. **(Added)** The Maintenance Management Analysis office will provide program support to lock/unlock aircraft/equipment files as directed by the Impoundment Official. Maintenance Management Analysis personnel will have sole access to the Core Automated Maintenance System for Mobility (G081), F9012 program, and other applicable programmable aircraft/equipment files with lock/unlock features. MOC may perform this function in the event that Maintenance Management Analysis is unavailable.

7.6. Impoundment Procedures. Aircraft/Equipment impoundment will be conducted in accordance with AFI 21-101-AFRCSUP, Chapter 7, this supplement and TO LCL-433AW-10-23. (All impoundment checklists and placards are located on the 433MXG Community Share Drive for download and on the iPads.)

7.6.11. **(Added)** Off Station Procedures:

7.6.11.1. **(Added)** This instruction should be used to the maximum extent possible when an aircraft is away from home station and encounters a problem warranting impoundment.

7.6.11.2. **(Added)** All 433D aircrew trip kits will contain this instruction.

7.6.11.3. **(Added)** If an enroute unit impounds an aircraft, that unit will contact Headquarters Air Mobility Command/Logistics Command and Control component (HQ AMC/XOCL) with details of the impoundment event. Ensure HQ AMC/XOCL and the owning home station Group Commander (GP/CC) is kept informed of investigation status. Only the owning GP/CC or appointed authorities can release an aircraft from impoundment.

7.6.11.4. **(Added)** Outside the Continental U.S., Air Mobility Squadron (AMS) locations, the AMS Commander will be responsible for all impoundment events, except for the authority to release the aircraft from impoundment. After the owning GP/CC releases the aircraft from impoundment, the AMS will ensure they notify HQ AMC/XOCL.

7.6.11.5. **(Added)** Assessing aircraft condition and authorizing a one-time flight, if necessary, will be coordinated through the owning GP/CC. One-time flight authorization must come from the owning GP/CC or appointed authorities, in accordance with TO 00-20-1.

7.6.11.6. **(Added)** The impoundment release authority is the owning GP/CC or appointed authorities.

8.2.1. The following procedures establishes guidance and precautionary measures for ensuring tool control to assigned aircraft and personnel. It applies to all wing agencies which enter the flightline or aerospace equipment maintenance industrial areas, to include all wing organizations, (e.g. hospital, Civil Engineering, Vehicle Maintenance, Security Forces, etc.).

8.2.1.2. **Local Inventory Procedures:** These procedures will be adhered to by all personnel in control of checking in/out of tools to personnel in the work place. Flight Crew members will be held responsible for their own tools brought out to the aircraft and must perform a tool accountability check prior to leaving the aircraft.

8.2.1.2.1. **(Added)** In work centers where only one employee is present, tool kits will be inventoried by the shop supervisor at the next shift change. In the event that there is only one individual and one shift in a work center, the flight chief or production supervisor will provide oversight for tool checkout.

8.2.3.3. **(Added)** Unserviceable warranty tools will be segregated and tagged with Defense Department, (DD) Form 1577-3, *Unserviceable (Reparable) Label Materiel.* Contract number will be listed if provided.

8.2.4.2. **(Added)** Emergency Response Equipment, (e.g. crash recovery, hazardous material, etc.).

8.2.4.2.1. **(Added)** Portable kits, trailer, etc. must have a MIL for inventory purposes. Conduct a complete inventory using the MIL prior to and after each use.

8.2.4.2.2. **(Added)** At least annually or as directed in TOs, manufacturer's manual or other directives, conduct a thorough inspection and inventory. Include operational checks when directed by applicable technical data.

8.2.4.2.3. **(Added)** Supervisors must load dispatchable emergency response equipment into TCMax for issue and to track and document inventories and inspections. In-shop equipment, (e.g. spill kits, etc.) inspections and inventories may be tracked in the MIS.

8.2.5.4. **(Added)** Maintenance personnel will find a good stopping point at the end of the shift and perform a tool inventory before leaving the job site. They will take the tools into the CTK of which it is checked out and transfer to the next individual who will be performing the rest of the maintenance task. The CTK monitor will clear the original person leaving to the person who will be taking over the tools after the incoming individual performs a tool inventory check.

8.2.6. **(Added)** Procedures for lost or missing tools are found in paragraphs **8.2.6.2** through **8.2.6.2.1.2.5**.

8.2.6.1.1. **(Added)** Post Taxi/Take-off Procedures:

8.2.6.1.1.1. **(Added)** MOC will notify the MXG/CC and Command Post immediately upon the post take-off discovery of a lost tool.

8.2.6.1.1.2. **(Added)** Command Post will contact the aircraft and brief the aircrew on the type of tool and last known area the tool was used.

8.2.6.1.1.3. **(Added)** Away from home station, the aircraft commander, after a thorough search is performed, has the authority to clear a Red X when a tool cannot be found.

8.2.6.1.1.4. **(Added)** The aircraft will immediately be placed on a Red X upon return to home station and the expediter or production supervisor will ensure compliance with the procedures outlined in **paragraph 8.2.6.2**.

8.2.6.2. **(Added)** Lost Tool Procedures.

8.2.6.2.1. **(Added)** Flightline and Aircraft:

8.2.6.2.1.1. **(Added)** An individual losing a tool on or around an aircraft will report immediately to the expediter and/or shop supervisor. If not found after an initial search, the expediter or supervisor will notify the flightline production supervisor and MOC who, in turn, will notify the MXG/CC and QA. The aircraft will be immediately grounded and lost tool procedures initiated. The individual losing the tool is responsible for initiation of lost tool procedures. The expediter or shop chief will ensure initiation of AFRC Form 174, before the next shift change.

8.2.6.2.1.1.1. **(Added)** A Red X will be entered as a discrepancy into the aircraft forms stating the type of tool and the last known area the tool was used.

8.2.6.2.1.1.2. **(Added)** Conduct a thorough search. If the tool is found, then investigation is complete. If the tool is not found, the Maintenance Operations Officer/Superintendent (MXG/MXO) will sign block 8 of the AFRC Form 174, authorizing termination of the search and clearance of the Red X. If at any time during or following the investigation, the tool is found and retrieved, notify the expediter, production supervisor or flight chief and MOC, who in turn will notify the MXG/CC and QA. After normal duty hours, authorization to terminate the search may be obtained from the MXG/MXO by telephone. In this event, write "telecom" in the INDIVIDUAL INITIALS column of block 8 and enter the time and date of the authorization in

the TIME/DATE INITIALED column. Obtain signature for block 8 of the AFRC Form 174 on the following duty day.

8.2.6.2.1.1.3. **(Added)** Expediters or shop chiefs will ensure complete documentation of all blocks on the AFRC Form 174. Forward one completed copy each to the tool center monitor, squadron supervision and QA within 48 hours of losing the tool. Tool centers will maintain AFRC Forms 174 on file until the item is found or 1 year, whichever comes first.

8.2.6.2.1.2. **(Added)** In Shop/Off Equipment:

8.2.6.2.1.2.1. **(Added)** Individuals losing a tool in the shop area will report to the supervisor immediately.

8.2.6.2.1.2.2. **(Added)** If not found after an initial search, immediately place a Red X in any affected equipment forms, AFTO Form 244, *Industrial/Support Equipment Record*, or equivalent. Use proper lockout/tag-out procedures IAW the equipment user manual.

8.2.6.2.1.2.3. **(Added)** Conduct a thorough search including dismantlement if necessary and practical.

8.2.6.2.1.2.4. **(Added)** If after a thorough search the tool is not found, the individual losing the tool is responsible for initiation of lost tool procedures. Shop chiefs are responsible for ensuring initiation of the AFRC Form 174 prior to the next shift change. Notify MOC of the lost tool who, in turn, will notify the MXG/CC and QA. The MXG/MXO will sign block 8 of the AFRC Form 174 authorizing termination of the search. Shop supervisors are responsible for ensuring complete documentation of the AFRC Form 174. Forward one completed copy each to the tool center monitor, squadron supervision and QA within 48 hours of losing the tool. The tool center monitor will maintain AFRC Forms 174 until the item is found or 1 year, whichever comes first. After normal duty hours, authorization to terminate the search may be obtained from the MXG/MXO by telephone. In this event, write "telecom" in the INDIVIDUAL INITIALS column of block 8 and enter the time and date of the authorization in the TIME/DATE INITIALED column. Obtain signature for block 8 of the AFRC Form 174 on the following duty day.

8.2.6.2.1.2.5. **(Added)** If at any time, the tool is found, notify the supervisor, the tool center monitor and MOC, who in turn, will notify the MXG/CC and QA.

8.2.8.3. **(Added)** Unit Purchased Individual Issue Equipment.

8.2.8.3.1. **(Added)** For equipment that will be issued to and maintained by individuals, designated monitors will create a "CTK" in TCMax for each individual receiving equipment. The CTK number will contain the first four digits of the shop World Wide Identifier, (WWID), (see **paragraph 4.1**) and the employee number of the individual receiving the equipment, (e.g. R5FM00285). Supervisors need not show the CTK as "issued" in TCMax. Each piece of equipment issued shall be marked as described in this paragraph.

8.2.8.3.2. **(Added)** Supervisors may elect to create individual equipment kits that will be maintained in the tool room and issued out in TCMax on an as needed basis. Use standard identification conventions as described in paragraph **8.2.24** through **8.2.25.1.1.5** to mark these kits.

8.2.8.3.3. **(Added)** Use of personal tools, other than as specified above, is strictly prohibited.

8.2.8.3.3.1. **(Added)** Lost/missing individual equipment will be treated as lost tools. Comply with the procedures outlined in **paragraph 8.2.6.2** of this instruction.

8.2.9.4. **(Added)** Rag Control:

8.2.9.4.1. **(Added)** Rags may be of different types, (e.g. lint free white, red shop rags, grey absorbent pads); however, each type will be uniform in size, shape and color and issued separately from other types of rags.

8.2.9.4.2. **(Added)** Work centers may pre-package rags to add to CTKs. Packages will be added to the Master Inventory Listing, (MIL) and marked with a kit number, type and number of rags. Packages will be replenished at inventory upon return to the tool center. Soiled rags will be retained in plastic bags until turned in to the tool center at the end of the shift. When necessary, tool center monitors may exchange soiled rags for clean rags on a one-for-one swap. Tool center monitors will dispose of rags in their proper containers.

8.2.10.1. **(Added) Tool Procurement Monitors.**

8.2.10.1.1. **(Added)** Personnel authorized to procure unit tools will be limited to individuals designated by squadron commanders, maintenance operations officers or superintendents.

8.2.10.1.2. **(Added)** Replacement and spare tools will be strictly controlled by the flight chiefs and/or designated tool procurement monitors. Replacement tools will not be issued to replenish a CTK without the broken tool or a completed lost tool report. Warranty tools requiring replacement will be returned to the manufacturer for replacement.

8.2.10.1.3. **(Added)** Procurement monitors and flight chiefs will ensure that the local manufacturer of tools is either, TO directed or approved by QA and processed in accordance with local instructions.

8.2.11. Locally manufactured tools will be treated and marked just as any tool in the CTK.

8.2.12. Tools owned by Contract Field Teams, Depot Teams and Factory Representatives, will be marked with a unique designator that identifies the team. The contract QA Representative will monitor Contract Field Teams for compliance.

8.2.16. CTK supervisors and monitors will control the access to anyone requiring it. At least one person must be in the CTK while another is given access.

8.2.17. Any electronic device that is controlled within a CTK must be assigned a WWID and have a sticker with the WWID adhered to the device. The device will be tracked in the TCMax system. The eTools Lite iPads etc., will have the WWID configured within the settings by either the TODO or TODA via the MacBook and also have a sticker externally with WWID. There will be no etching on electronic devices for it will shorten the life expectancy of the case or device.

8.2.19. **(Added) Roles and Responsibilities.**

8.2.19.1. **(Added)** Squadrons will appoint the following individuals:

8.2.19.1.1. **(Added)** TCMax Administrators, (primary and alternate) are to administer the tool center's TCMax Program and serve as liaison to the group TCMax Administrator.

8.2.19.1.2. **(Added)** Composite Tool Kit (CTK) Monitors, as many as necessary to ensure adequate tool center coverage: In smaller shops, Tool Center Administrators and CTK Monitors may be the same individuals.

8.2.20. **(Added)** Tool Accountability and Control. Issue of Tools and CTKs: Tools and kits will be turned in at the end of each assigned shift. Tools and kits required for longer than the current shift (e.g. temporary deployment, deployments, etc.) will be issued "Long Term" in TCMax.

8.2.20.1. **(Added)** A work center master tool inventory listing must be established and kept in the shop chief's office or tool center.

8.2.20.2. **(Added)** Control of Consumable and Expendable Items: When broken or consumed, the tool monitor will exchange them on a one-for-one swap. Lost consumables/expendables will be treated as lost tools, (see **paragraph 8.2.6.2**). Monitors will not issue replacement consumables without a lost tool report or the broken/consumed item, (e.g. broken apex or empty container).

8.2.21. **(Added)** TCMax. The Air Force Reserve Command (AFRC) Form 175, *Broken/Missing/Removed Tools and Equipment,* will be maintained in CTKs to document broken and missing tools to include eTools covers, plugs, etc. etc., until the tool center TCMax Administrator/Monitor transfers the data into TCMax. At the time of TCMax update, the TCMax Administrator/Monitor will line through the item and initial the "Verified By" block of the AFRC Form 175. The TCMax database will be backed up at least once every 30 days. TCMax transaction and inspection history will maintained for 2 years. Manual documentation will be maintained for 30 days unless otherwise specified.

8.2.21.1. **(Added)** Tool Center Equipment Identification Designator (EID). The following identifiers are assigned as the first four digits of every TCMax EID in the MXG:

8.2.21.1.1. **(Added)** Fabrication:

8.2.21.1.1.1. **(Added)** Structural Repair:

8.2.21.1.1.1.1. **(Added)** Main Building (Bldg. 898) ---------- R5FS

8.2.21.1.1.1.2. **(Added)** Corrosion/Mold Shop ---------- R5FM

8.2.21.1.1.1.3. **(Added)** Fiberglass Shop ---------- R5FF

8.2.21.1.1.1.4. **(Added)** Metals Technology ---------- R5FW

8.2.21.1.1.1.5. **(Added)** Non-Destructive Inspection Shop --------- R5FN

8.2.21.1.1.2. **(Added)** Accessories:

8.2.21.1.1.2.1. **(Added)** Pneudraulics ---------- R5AP

8.2.21.1.1.2.2. **(Added)** Fuels Shop ---------- R5AF

8.2.21.1.1.2.3. **(Added)** Electro-Environmental and Munitions ---- R5AE

8.2.21.1.1.3. **(Added)** Maintenance:

8.2.21.1.1.3.1. **(Added)** Aero Repair Shop ---------- R5MA

8.2.21.1.1.3.2. **(Added)** Wheel and Tire Shop ---------- R5MT

8.2.21.1.1.3.3. **(Added)** Aerospace Ground Equipment ---------- R5GG

8.2.21.1.1.3.4. **(Added)** Propulsion Shop ---------- R5CP

8.2.21.1.1.4. **(Added)** Aircraft Maintenance Squadron ---------- R5AS

8.2.21.1.1.5. **(Added)** Quality Assurance ---------- R5QA

8.2.22. **(Added)** Tools Damaged or Removed From CTKs.

8.2.22.1. **(Added)** All damaged tools will be turned in to the tool procurement monitor for replacement.

8.2.22.2. **(Added)** Shop chiefs and tool center monitors will ensure prompt replacement of damaged tools.

8.2.22.3. **(Added)** While awaiting replacement, the tools center monitor will cover the cut-out/shadow until a replacement tool is issued. Develop a system for immediate identification of missing tools. For example, use a red tag or tags for broken and/or missing tools, blue for long term issue and green for TMDE awaiting calibration.

8.4.1.1. **(Added)** Test Measurement and Diagnostic Equipment (TMDE):

8.4.1.1.1. **(Added)** All TMDE will be controlled and checked out in TCMax.

8.4.1.1.2. **(Added)** EIDs for the TMDE laboratory will not be changed; however, dispatchable TMDE must also be marked with a WWID EID.

8.5.5.2. The 433MXG dedicated iPads and MacBooks will also be tracked in TCMax.

8.5.5.7. The following procedures will cover the mobility and/or deployed operational requirements for the 433MXG:

8.5.5.7.1. **(Added)** Responsibilities and Procedures:

8.5.5.7.1.1. **(Added)** Deployment/Mobility Team Chief will ask to identify iPads for deploying or in support of a mobility event the amount required and to accomplish the mission and amount of days deployed.

8.5.5.7.1.2. **(Added)** The supervisor who is tasked with identifying the number of iPads required will ensure their TODA who has control of them will coordinate and provide a list of the required iPads to the TODO with serial numbers and assigned WWIDs.

8.5.5.7.1.3. **(Added)** TODAs will ensure that before the identified iPads that will deploy have the most current TO updates. If the iPads are deployed more than 7 days but less than 60 days, the TODAs will update immediately with the most current TO updates upon return of the deployed iPads.

9.17.1. **Local Manufacture Procedures.** (Local Manufacture Work Sheets are available on the 433MXG Community share drive (for download) and iPads.)

9.17.1.1. **(Added)** Any activity requesting Local Manufacture (LM) will coordinate with the Fabrication Flight, Decentralized Material Support (DMS) and the QA program manager. The requesting activity will research the part number to determine if the part is listed as a LM item. There are two methods to determine this: Verify using the TO, figure and index, if the Source Maintenance Recoverability (SMR) Code in the Illustrated Parts Breakdown (IPB) is listed as "manufactured/fabricated intermediate level (MFO) or manufactured/fabricated organization level (MOO)" then it is an LM item; or research using the Federal Logistics Data System (FedLog). LM items can be identified by a source of supply code of "JCL" or a unit price of $0.00.

9.17.1.1.1. **(Added)** After determining that the part is an LM item, the requesting activity will complete Local Manufacture Parts Worksheet. Provide DMS with worksheet, part drawing,

sample part (if applicable), supporting documentation, AF Form 2005, *Issue/Turn-In Request,* and AFTO Form 350, *Repairable Item Processing Tag*.

9.17.1.1.2. **(Added)** When requesting LM of tools or equipment, route the tool/equipment, Local Manufactured Tool/Equipment Worksheet, AF Form 601, *Authorization Change Request* (for equipment), AFTO Form 350 and supporting documentation, including inspection and periodic maintenance criteria established IAW **paragraph 4** in TO 34-1-3, *Machinery and Shop Equipment*, to the QA office. This procedure does not apply to local manufacture, modification or design of tools authorized in specific technical data.

9.17.1.1.3. **(Added)** During the review, if the tool/equipment is deemed applicable and configuration current (necessary), consider submitting an AFTO Form 22, *Technical Manual (TM) Change Recommendation and Reply*, for potential inclusion into technical data Air Force-wide. Local technical data will be developed by the requester for equipment operating procedures (if applicable).

9.17.1.2. **(Added)** Fabrication:

9.17.1.2.1. **(Added)** Review the LM request documents to determine which fabrications shop(s) will be involved in the manufacturing process. When multiple shops are involved in the manufacturing process, utilized the Tag Transfer process in the MIS for job completion and man hour accountability.

9.17.1.2.2. **(Added)** Coordinate with DMS to obtain material(s) and hardware as necessary for the LM item.

9.17.1.2.3. **(Added)** Route completed LM part to DMS for routing.

11.6.5.2. **(Added) Red Ball 433MXG Maintenance Procedures.**

11.6.5.2.1. **(Added)** Aircraft parts may be ordered with a "Red Ball" priority from DMS. The Expeditor and Production Supervisor will determine if the part will be picked up at DMS or will be delivered to the aircraft.

11.6.5.2.2. **(Added)** The appropriate Production Supervisor will approve, monitor and follow up on CANN actions, Due-In from Maintenance assets, and associated documentation during the launch sequence.

11.6.5.2.3. **(Added)** Maintenance personnel will coordinate with aircrew to ensure the aircraft is safe for maintenance. Technicians will alert the aircrew to any hazardous conditions.

11.6.5.2.4. **(Added)** AMXS and MXS Production Supervisors and Expediters signing the Exception Release (ER) will ensure that all maintenance documentation is accomplished prior to flight. When possible eTools will be utilized to enter their time for the job immediately after "Red Ball" maintenance is completed.

11.6.5.2.5. **(Added)** When the MIS is down:

11.6.5.2.5.1. **(Added)** Production Supervisors and Expediters will ensure that the appropriate aircraft forms documentation is completed for all Red Ball procedures prior to flight.

11.6.5.2.5.2. **(Added)** MOC ensures the MIS is updated as soon as the system is operational.

11.8.3.2.2. There are two major contributors and they are poor housekeeping and poor work habits such as not accounting for hardware, safety wire, tools, etc., during operations and maintenance.

All loose objects, regardless of their origin, can cause catastrophic and costly damage to an aircraft, major end item or loss of life.

11.8.3.2.2.1. **(Added)** Foreign Object Damage (FOD) Prevention Practices. FOD awareness and prevention is everyone's responsibility. Some FOD prevention requirements are listed below:

11.8.3.2.2.1.1. **(Added)** Prior to aircrew show, maintenance personnel will perform a flight deck inspection for Foreign Objects (FO). Aircrew members prior to flight will ensure that the flight deck is FO free.

11.8.3.2.2.1.2. **(Added)** Plug or cap all openings, ports, lines, hoses, electrical connections, and ducts on aircraft, engines, support equipment, AGE, trainers or components to prevent FOD from entering these systems. All necessary caps, plugs, pitot covers and other covers etc., will be made readily available by management, for use by aircraft maintenance personnel in their immediate work area for the prevention of foreign object damage. Aircraft maintenance personnel will ensure all covers, plugs and caps are removed from the aircraft no more than 4 hours prior to aircraft scheduled take-off.

11.8.3.2.2.1.3. **(Added)** All aircraft parking spots will be policed for FO and debris prior to aircraft block-in and after aircraft block-out. Prior to towing an aircraft from any hangar or parking spot, the aircraft tow supervisor is responsible for ensuring the tow path is clear of FO or debris and the hangar or parking spot being towed to is also clear of FO.

11.8.3.2.2.1.4. **(Added)** Maintain cleanliness in maintenance and manufacturing areas at all times. Keep areas free of FO. A thorough cleanup, FO inspection and toolbox inventory will be accomplished upon beginning and completion of each task and at the beginning and end of the shift.

11.8.3.2.2.1.5. **(Added)** Report damaged pavement in and around aircraft traffic and taxi/towing/run-up/parking areas to the FOD Monitor immediately upon discovery.

11.8.3.6. Refer to AFI 36-2903 JBSANANTONIOSUP, *Dress and Personal Appearance of Air Force Personnel*, for local flightline clothing policy addressing wearing of hats, badges, and passes on the flightline.

11.8.3.11.3. If the aircraft is assigned a flying crew chief, the flying crew chief will be sure to take every precautionary measure to account for their tools, housekeeping and walk around FOD check of the aircraft prior to engine start and leaving the aircraft for crew rest.

11.8.5.2. 433AW will perform these procedures as follows:

11.8.5.2.1. **(Added)** Monthly flightline FOD walks will be announced via email with date, time, and location (aircraft parking spot). Required participants will report to designated area for a safety briefing from the FOD walk supervisor. Participants will then proceed, at the direction of the FOD walk supervisor and under guidance of starting point guides, through the aircraft parking areas and to the designated stopping point.

11.8.5.2.1.1. **(Added)** The FOD walk supervisor will be provided by the AMXS and MXS squadrons to ensure active support of the FOD prevention program. The supervisor will:

11.8.5.2.1.1.1. **(Added)** Furnish FOD bags and single-use hearing protection.

11.8.5.2.1.1.2. **(Added)** Be knowledgeable of and brief any safety concerns for that days' FOD walk (servicing operations, launching aircraft, noise hazards, etc.).

11.8.5.2.1.1.3. **(Added)** Assemble starting-point guides to help guide the walk.

11.8.5.2.1.1.4. **(Added)** Gain permission through MOC for participants to "break red".

11.10.1. **Roles and Responsibilities for 433MXG ASIP Program.**

11.10.1.1. **(Added)** QA Office:

11.10.1.1.1. **(Added)** Serve as OPR for this program and appoint an ASIP unit project NCO.

11.10.1.1.2. **(Added)** Monitor the ASIP program as required.

11.10.1.1.3. **(Added)** Notify the Loads/Environment Spectra Survey (L/ESS) monitor in the AMXS and MXS of any discrepancies reported from the C-5M ASIP program manager.

11.10.1.1.4. **(Added)** Disseminate/coordinate all ASIP related tracking information from the C-5M ASIP program manager to the L/ESS monitor and the PS&D Office.

11.10.1.2. **(Added)** PS&D ASIP Monitor:

11.10.1.2.1. **(Added)** Establish procedures and ensure that ASIP special inspections are properly loaded in GO81 on local work packages and scheduled for all assigned aircraft.

11.10.1.2.2. **(Added)** Notify Headquarters/Air Mobility Command (HQ/AMC) in the event a special ASIP inspection has not been loaded into GO81 and request the programmer to create the master record.

11.10.1.2.3. **(Added)** Maintain and ensure the accuracy of the isochronal count number and the isochronal inspection number for all assigned aircraft.

11.10.1.3. **(Added)** AMXS and MXS Production Supervisor (ASIP Monitor) (Station owned or Enroute):

11.10.1.3.1. **(Added)** Ensure the Embedded Diagnostic System (EDS) Personal Computer Memory Card International Association/Removable Memory Module (PCMCIA/RMM) cards from aircraft are removed to debrief for MOC for downloading.

11.10.1.3.2. **(Added)** Download ASIP equipped aircraft EDS PCMCIA/RMM cards after each mission. When deployed, EDS PCMCIA/RMM cards will be downloaded upon arrival at the next C-5M base or home station.

11.10.1.3.3. **(Added)** Ensure debrief section captures and reports ASIP usage data, loads/environment spectra survey and individual aircraft tracking data collection to achieve the required data capture rates via EDS RMM downloads to the C-5M Removable Memory Module – Data manager web site at: **https://g081fltdata.csd.disa.mil/C5RMMDM/login.aspx?ReturnUrl=%2fc5rmmdm%2fSecure%2fDefault.aspx** within 24 hours of debrief.

11.10.1.3.4. **(Added)** Provide maintenance support for the L/ESS system on all applicable aircraft.

11.10.1.3.5. **(Added)** Coordinate with the MXG ASIP program manager for an EDS RMM and/or L/ESS maintenance problems.

11.10.1.3.6. **(Added)** Train deploying team chief in the ASIP and EDS PCMCIA/RMM cards downloading process at deployed locations prior to deployment.

11.13.3. **Cannibalization Roles and Responsibilities.** CANN Authorities will be approved by the MXG/CC or equivalent, and tracked in the MIS and Special Certification Roster. Course Code for CANN authorities is Inspection (INSP) 00159.

11.13.3.1.1. **(Added)** Technician will initialize the CANN request.

11.13.3.1.2. **(Added)** MOC will process the CANN request in the Core Automated Maintenance System for Mobility (Web G081) then notifies DMS.

11.13.3.1.3. **(Added)** DMS will be the status notification center for parts requested with CANN control numbers.

11.13.3.3. **(Added)** Procedures.

11.13.3.3.1. **(Added)** Technician:

11.13.3.3.1.1. **(Added)** Verify part is required to meet mission commitments.

11.13.3.3.1.2. **(Added)** Order the part and obtain a valid document number. Request status from DMS. If the status is zero balance, request CANN authorization from an approved CANN authority as identified on group level authority letter, (See QA Share Point for template).

11.13.3.3.1.3. **(Added)** Obtain a CANN number from the MOC and ensure removal actions are properly documented IAW TO 00-20-2, *Maintenance Data Documentation.* Notify MOC with the following information: From end item serial number, to end item serial number, and the documentation number. Ensure there are two entries made in the equipment forms: A Red X for the reinstallation of the removed component and a Diagonal for the removal action (to be signed off at the time of removal).

11.13.3.3.1.4. **(Added)** Ensure that proper technical data procedures are followed and that all required circuit breakers, switches and aircraft systems have an AFTO Form 492, *Maintenance Warning Tag*, installed, if required.

11.13.3.3.1.5. **(Added)** Shift maintenance supervision, through PS&D will determine what equipment to CANN from. After proper coordination, direct the removal of the CANN component and its installation on the receiving end item. Ensure all associated hardware is bagged and attached to the removed component's location. If it is necessary to use hardware for the installation of a part/component, ensure the hardware is ordered and the equipment forms are annotated with a valid document number. Also, ensure that the associated hardware that cannot be reused (seals, etc.) is on order and has a valid document number.

11.13.3.3.1.6. **(Added)** Ensure Due-in-for-Maintenance assets are properly routed to supply, and ensure that proper documentation is made in donor and recipient end item forms for serially controlled parts.

11.13.3.3.2. **(Added)** CANN Authorities:

11.13.3.3.2.1. **(Added)** Coordinate/obtain approval from the applicable squadron supervision prior to removal actions from the external squadron sources, flight line aircraft and equipment end items, i.e. engine or Aerospace Ground Equipment, and support systems assigned to the MXG.

11.13.3.3.2.2. **(Added)** All CANN actions on Contract Field Team aircraft will require approval/coordination through the MXG QA Office, 925-7858.

11.13.3.3.3. **(Added)** MOC:

11.13.3.3.3.1. **(Added)** Verify CANN approval with the most recent CANN authority letter.

11.13.3.3.3.2. **(Added)** Create CANN action discrepancy in Web GO81 using program 9050, *Input Aircraft Discrepancies,* for aircraft only.

11.13.3.3.3.3. **(Added)** Verify that item has been ordered and validate documentation number.

11.13.3.3.3.4. **(Added)** Notify DMS of CANN action and provide all required information to update/change the supply request.

11.13.3.3.4. **(Added)** DMS:

11.13.3.3.4.1. **(Added)** Verify no on-hand assets exist. Check other sources, (i.e. Tail Number Bin (TNB), bench stock, back shop, Due-in-for-Maintenance detail, and serviceable turn-in area).

11.13.3.3.4.2. **(Added)** Notify appropriate agency of current status.

11.13.3.3.4.3. **(Added)** Ensure documentation number "Mark For" is completed.

11.13.3.3.4.4. **(Added)** Verify Mission Capability (MICAP) through Base Supply.

11.15.4.1. The 433D Airlift Wing does not utilize the Transient Alert personnel or transitting aircraft at this location.

11.25.4. The 433D Airlift Wing does not perform hot refueling, including hot refueling with ordnance at this location.

11.28.2.4.1. The point of contact for the Crashed, Damaged, or Disabled Aircraft Recovery (CDDAR) program is the MXS Aero Repair Shop. Upon notification of the requirement for an aircraft recovery operation or exercise, the appropriate work centers are required to respond as indicated. Considerations, such as an immediate need to use the runway and other flight operations, will weigh heavily on the urgency of moving the aircraft or wreckage. Members and supervisors will apply Risk Management (RM) techniques during all phases of the operation to ensure personnel safety and to minimize collateral damage. Furthermore, they will comply with all published safety directives. All personnel will make every effort to preserve evidence and to minimize subsequent damage.

11.28.2.4.1.2. **(Added)** Roles and Responsibilities.

11.28.2.4.1.2.1. **(Added)** The Incident Commander (IC). The 433AW commander or designated alternate serves as the on-scene command and control during the recovery phase. The senior fire department official is in command of the on-scene operations during the initial phase.

11.28.2.4.1.2.1.1. **(Added)** Coordinates the dispatch of the CDDAR team to the recovery site Entry Control Point (ECP) after coordination with other agencies, as dictated by the incident. The IC coordinates with the Emergency Operations Center (EOC) and/or the Accident Investigation Board to obtain release to move the damaged aircraft.

11.28.2.4.1.2.1.2. **(Added)** Maintains communication with the CDDAR Team Chief, the MOC and other agencies to ensure a smooth recovery effort.

11.28.2.4.1.3. **(Added)** The MXS Aero Repair shop supervisor ensures adequate CDDAR Team personnel to include, as a minimum, one Team Chief and two qualified CDDAR Team members from Aero Repair shop. Additional personnel from other maintenance activities or agencies will be provided on an as-needed basis.

11.28.2.4.1.4. **(Added)** The AMXS superintendent will ensure availability of an aircraft tow vehicle with a qualified operator. The MOC maintains communication with all required agencies.

11.28.2.4.1.5. **(Added)** The MOC senior controller will ensure that a log of all events and significant facts regarding aircraft recovery operations and/or exercises is maintained.

11.28.2.4.1.6. **(Added)** The AMXS, MXS and Maintenance Operations (MXO) will develop and maintain recall rosters to identify personnel to be called in the event of emergencies during non-duty hours. Updated rosters will be sent to the MOC for centralized collection/access. These rosters will be maintained on file in AMXS, MXS, MXO and MOC.

11.28.2.4.1.7. **(Added)** The host base Logistics Readiness Squadron (LRS) Vehicle Management Flight provides vehicles and drivers, as necessary, to support the recovery effort. The following items reflect the minimum required vehicle support; however, additional vehicle support may be needed depending on the situation.

11.28.2.4.1.7.1. **(Added)** One general-purpose truck with multi-frequency non-tactical radio for recovery crew transportation.

11.28.2.4.1.7.2. **(Added)** One tow tractor and semi-trailer for transportation of aircraft recovery support equipment.

11.28.2.4.1.8. **(Added)** Specific 433AW CDDAR equipment is the responsibility of the MXS AR Shop.

11.28.2.4.1.8.1. **(Added)** Equipment is stored in the CDDAR trailer and on the unit premises when not in use during exercises and actual events.

11.28.2.4.1.8.2. **(Added)** Equipment is inspected on an annual basis, minimally or as directed by applicable technical data. Inspection data is entered and tracked in the MIS and in TCMax.

11.28.2.4.1.9. **(Added)** Personal Protective Equipment. Due to the potential for exposure to various occupational health and safety hazards at and around the crash site, all personnel involved in the recovery operation will be trained and qualified in the use of the appropriate personal protective equipment as directed by Bioenvironmental Services.

11.28.2.4.2. **433MXG CDDAR Procedures.**

11.28.2.4.2.1. **(Added)** Upon notification of an aircraft recovery or exercise, the MOC will immediately notify the appropriate agencies and initiate the impoundment process by running Quick Reaction Checklists (QRCs), Aircraft Emergency/Accident, and Aircraft Impoundment, in accordance with AFI 21-101-AFRCSUP and impoundment procedures within this supplement.

11.28.2.4.2.2. **(Added)** Upon notification of the event, the MXG/CD, or appointed alternate, will report to the incident site to assist in directing the recovery effort.

11.28.2.4.2.3. **(Added)** The IC reports to the recovery site ECP and takes command of the recovery operation. The IC coordinates with the applicable agencies to ensure all fire, safety disaster and/or ordnance disposal hazards have been abated or eliminated prior to dispatching the CDDAR Team to the ECP.

11.28.2.4.2.4. **(Added)** QA is the OPR for aircraft impoundments. The impoundment Official and QA will ensure the security of aircraft maintenance records and/or impoundment exhibits in accordance with TO LCL-433AW-10-23.

11.28.2.4.2.5. **(Added)** The CDDAR Team Chief will assemble the CDDAR team and await instructions from the IC.

11.28.2.4.2.6. **(Added)** Safety precautions will not be abandoned to expedite removal of disabled or damaged aircraft.

11.28.2.6.3. **433MXG CDDAR Training.**

11.28.2.6.3.1. **(Added)** CDDAR Team Members and Team Chiefs will be designated, in writing, by the MXG/CC on a Letter of Appointment memorandum.

11.28.2.6.3.2. **(Added)** The Aero Repair shop supervisor will develop and implement a CDDAR Lesson Plan, and coordinate through the Maintenance Training Flight (MTF) to ensure personnel qualifications as CDDAR Team Members. The training will be entered into the MIS and tracked using program 9119, Personnel Training Records, course code ACFT 00100, *Crash Recovery Procedures*. CDDAR qualification training will be repeated every 12 months.

11.28.2.6.3.3. **(Added)** Team Chiefs and CDDAR members will be recertified annually by participating in a CDDAR exercise. Document recertification on an AF Form 1098, *Special Task certification and Recurring Training*, and maintained in the individual's Training Business Area (TBA), AF Form 623, *Individual Training Record*, or separate folder for Master Sergeants and above or civilian employees.

14.4.2. **(Added) Responsibilities for Engine Management.**

14.4.2.1. **(Added)** Unit Engine Manager (UEM)/SEM will:

14.4.2.1.1. **(Added)** Maintain the MIS/Comprehensive Engine Management System (CEMS) Stock Record Account Number (SRAN) routing account number (FJ6648). Ensure compliance with all prescribing Comprehensive Engine Management directives, policies and procedures from the Air Force Reserve Command Engine Manager (EM).

14.4.2.1.2. **(Added)** Reconcile CEMS database (direct line reporting) to reflect the most current and correct engine information available. Take immediate action to correct all reporting errors and variances.

14.4.2.1.3. **(Added)** Input all reportable transactions on unit assigned aircraft, spare assets and tracked components using direct line reporting in CEMS and the MIS reporting system in a timely manner. Coordinates with PS&D on inspections and time change actions to ensure all engine maintenance requirements are accomplished by appropriate agencies and functions. Coordinates with QA, AMXS, and PS&D Section on engine related TCTOs. During extended deployments of assigned aircraft, designates SEMs from the Engine Shop to assimilate and input/forward required engine maintenance data such as serially controlled engine or engine component replacement documentation transactions using locally established, Deployed Component Change Work Sheets. Methods of communication will be by telephone message, e-mail, or FAX.

14.4.2.1.4. **(Added)** SEM coordinate with the Air Force Reserve Command (AFRC) EM for all engine movements, including redistribution, transfers, Second Level Maintenance (2LM) inputs, stock level adjustments, and warranty work. Prepares and submits DD 1348-1A, *Issue Release/Receipt Document*, via email to 802nd LRS. Provide AFRC (or obtain from AFRC) engine control number from the command EM for tracking, control and movement purposes; post on engine shipping document DD 1348-1A.

14.4.2.1.5. **(Added)** SEM coordinates with 502 LRS/LGRDDC and Engine Shop to provide support personnel as necessary to assist in loading and receiving of engine, as workload permits.

14.4.2.1.6. **(Added)** Perform annual SEM training for personnel who will report engine status or are responsible for engine documentation and scheduling using local training plans. Formal training is available at Tinker AFB, register at: **https://cems.sso.cce.af.mil/cpmo/**.

14.4.2.2. **(Added)** All personnel within Engine Shop must:

14.4.2.2.1. **(Added)** Report engine, module, and component actions to SEM no later than the close of business of the next business day after the transaction occurs. (Note: all CEMS transactions will be accomplished by close of business (COB) next business day.)

14.4.2.2.2. **(Added)** In the event of interruption of service or connectivity problems of more than 48 hours with direct line reporting to the Central Data Base (CDB), use AF Form 1534, Comprehensive Engine Management *(CEM) CDB Report*, to reflect engine status changes and forward to the CDB for updating. Document AFTO Form 349, *Maintenance Data Collection Record*, until data can be entered into the MIS to record engine status changes.

14.4.2.2.3. **(Added)** Cannibalization of engine components must be directed/approved by the CANN Authority (Production Superintendent or designated representative) and will be coordinated between MOC, Maintenance Supply Liaison, Propulsion Flight Chief or Shop Supervisor, and SEM. See CANN Procedures in this supplement for further instructions on CANN.

14.4.2.2.4. **(Added)** Report to CEMS, shipment transaction and the date/time engine was accepted by 502 LRS as recorded on the DD 1348-1A. Upon receipt of engine from 502 LRS, check SRAN for correct “ship to” FJ6648. Ensure proper engine and Quick Engine Change configuration, complete external damage assessment (including stand/trailer), process receipt transaction in the CEMS database.

14.4.2.2.5. **(Added)** Coordinate with engineering to determine repair requirements based on failure mode, operating time, repair restrictions, and asset availability.

TERRY W. MCCLAIN, Colonel, USAF
Commander, 433D Airlift Wing

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

433MXGI 21-117, *Aircraft Maintenance Training Program,* 23 July 2020

AFI 21-101-AFRCSUP, *Aircraft and Equipment Maintenance Management,* 13 August 2020

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

AFI 36-2903-JBSANANTONIOSUP, *Dress and Personal Appearance of Air Force Personnel,* 9 December 2020

AFMAN 11-2C-5V3, *C-5 Operations Procedures,* 16 April 2019

DAFI 21-101, *Aircraft and Equipment Maintenance Management,* 16 January 2020

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

DAFI 63-140-AFRCSUP, *Aircraft Structural Integrity Program and Air and Space Equipment Structural Management,* 4 February 2021

TO 1C-5M-33-4CL-1, *Non-Nuclear Loading Procedures,* 30 January 2011

TO 1C-5M-2-1, *Ground Handling and Servicing,* 26 January 2021

TO 1C-5M-6, *Scheduled Inspection and Maintenance Requirements,* 24 March 2021

TO 1C-5M-1, *Flight Manual USAF Series C-5M and C5M (SCM) Airplanes,* 25 February 2021

TO LCL-433AW-10-23, *433d MXG Impoundment Checklist,* 9 September 2019

Prescribed Forms

DD Form 365-2, *Aircraft Weighing Record*

Adopted Forms

AF Form 601, *Authorization Change Request*

AF Form 1534, *CEM CDB Report*

AFTO Form 22, *Technical Manual (TM) Change Recommendation and Reply*

AFTO Form 244, *Industrial/Support Equipment Record*

AFTO Form 350, *Repairable Item Processing Tag*

AFTO Form 349, *Maintenance Data Collection Record*

AFTO Form 492, *Maintenance Warning Tag*

AFTO Form 781, *Arms Aircrew/Mission Flight Data Document*

DD Form 1577-3, *Unserviceable (Reparable) Label Materiel*

DD Form 1348-1A, *Issue Release/Receipt Document*

Abbreviations and Acronyms

ACPINS—Automated Computer Program Identification Number System

AF—Air Force

AFB—Air Force Base

AFI—Air Force Instruction

AFIRM—Ageing Fleet Integrity and Reliability

AFMAN—Air Force Manual

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFRCSUP—Air force Reserve Command Supplement

AFRIMS—Air Force Records Information Management System

AFTO—Air Force Technical Order

ALM—Air Launched Missile

AMS—Air Mobility Squadron

AMXS—Aircraft Maintenance Squadron

ANCL—Ancillary

AW—Airlift Wing

AWBS—Automated Weight and Balance System

CANN—Cannibalization

CBT—Computer Based Training

CDB—Central Data Base

CDDAR—Crashed, Damaged, or Disabled Aircraft Recovery

CEM—Comprehensive Engine Management

CMDS—Countermeasures Dispensing System

CMDT—Countermeasures Dispenser Tester

COB—Close of Business

COMPUSEC—Computer Security

CTK—Composite Tool Kit

DAFI—Department of Air Force Instruction

DD—Defense Department

DMS—Decentralized Material Support

ECP—Entry Control Point

EDS—Embedded Diagnostic System

EID—Equipment Identification Designator

EOC—Emergency Operations Center

ETIMS—Enhanced Technical Information Management System

eTools—Electronic Tools

FCF—Functional Check Flight

FedLog—Federal Logistics Data System

FLTS/DOV—Flight Test Squadron/Director of Operations Validation

FO—Foreign Object

FOD—Foreign Object Damage

FSC—Field Specialty Code

GA—Georgia

GP/CC—Group Commander

GO81—Tool Control System

HQ/AMC—Headquarters/Air Mobility Command

HQ AMC/XOCL—Headquarters Air Mobility Command/Logistics Command and Control

IAW—In Accordance With

IPB—Illustrated Parts Breakdown

INSP—Inspection

IC—Incident Commander

LCL—Local

L/ESS—Loads/Environment Spectra Survey

LM—Local Manufacture

LRS—Logistics Readiness Squadron

MFO—Manufactured/Fabricated Intermediate Level

MICAP—Mission Capability

MIL—Master Inventory Listing

MIS—Maintenance Information System

MJU—Mobile Jettison Unit

MOC—Maintenance Operations Center

MOO—Manufactured/Fabricated Organization Level

MTF—Maintenance Training Flight

MXG—Maintenance Group

MXG/CC—Maintenance Group Commander

MXG/CD—Maintenance Group Deputy Commander

MXGI—Maintenance Group Instruction

MXG/MXO—Maintenance Group Operations Superintendent

MXO—Maintenance Operations

MXS—Maintenance Squadron

OCF—Operational Check Flight

OG—Operations Group

OG/CC—Operations Group Commander

OGV—Operations Group Standardization & Evaluation

OPR—Office of Primary Responsibility

OTI—One Time Inspection

PCMCIA/RMM—Personal Computer Memory Card International Association/Removable Memory Module

PESZ—Primary Explosive Safety Zone

PS&D—Plans, Scheduling and Documentation

QA—Quality Assurance

QRC—Quick Reaction Checklist

RAT—Ram Air Turbine

RDS—Records Distribution Schedule

RM—Risk Management

RMM—Removable Media Module

SCGP—Self Contained Guidance package

SMR—Source Maintenance Recovery

SRAN—Stock Record Account Number

TCMax—Tool Control System

TCTO—Time Compliance Technical Order

TM—Technical Manual

TMDE—Test, Measurement and Diagnostic Equipment

TNB—Tail Number Bin

TO—Technical Order

TODO—Technical Order Distribution Office

UEM/SEM—Unit Engine Manager

USB—Universal Serial Bus

W&B—Weight and Balance

WWID—World Wide Identifier

Terms

TCMax—A Microsoft Windows based application used to track the issue and return of tools inventory control and integrate bar coding devices. See the TCMax user manual for more information on the capabilities of TCMax.

Tool Center TCMax Administrator—Individuals appointed by the MXG/CC. Serves as the focal point for TCMax implementation, training and liaison to Local Area Network, (LAN) administrators and tool center administrators.