

**BY ORDER OF THE COMMANDER  
ALTUS AIR FORCE BASE**

**AIR FORCE INSTRUCTION 21-101**

**23 JUNE 2022**



**Maintenance**

**AIRCRAFT AND EQUIPMENT  
MAINTENANCE MANAGEMENT**

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(Mr. Kelly L. Bailey)

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**(ALTUSAFB)** This supplement extends the guidance of AFI 21-101, *Aircraft and Equipment Maintenance Management*, 16 January 2020, and AETC SUP 21-101, *Aircraft and Equipment Maintenance Management ADDENDUM*, 2 October 2020. This publication applies to all military and civilian members of the Regular Air Force (RegAF), Air Force Reserve (AFR) and Air National Guard (ANG), and those with contractual obligation to comply with Air Force publications. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using AF IMT 847, *Recommendation for Change of Publication*. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFI 33-322, *Records Management and Information Governance Program*, 23 March 2020, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afirms/afirms/afirms/rims.cfm>. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

**SUMMARY OF CHANGES**

**(ALTUSAFB)** This document is substantially revised and must be completely reviewed in its entirety. This revision aligns the supplement with AETC instructions, incorporates changes from previous Guidance Memorandum and 97 MXG Maintenance Operating Instructions.

2.4.44.1. **(Added)** All Repeat, Recur and CND discrepancies will be upgraded to a Red “X.” Discrepancies will be cleared IAW T.O. 00-20-1.

2.4.47. **(Added)** See [paragraph 11.13.9](#), for parts cannibalization (CANN) guidance.

3.7.1.1. **(Added)** Local Form MXG-09, *Aircraft Debriefing Worksheet*, will be used for assigned aircraft and transient Air Mobility Command (AMC) aircraft with exception of KC-46. KC-46 debrief must use Lead Command KC-46A Debrief Checklist. Debriefings will be conducted on flightline, at aircraft or in appropriate vehicle.

3.7.5.1. **(Added)** Aircraft Maintenance Squadron will ensure:

3.7.5.1.1. **(Added)** Knowledgeable technicians debrief aircrews.

3.7.5.1.2. **(Added)** Debrief are conducted on flightline, at aircraft or in appropriate vehicle.

3.7.5.1.3. **(Added)** All debriefed discrepancies for assigned and transient AMC aircraft are communicated to MOC.

3.7.5.2. **(Added)** Flightline Production Supervisors will ensure:

3.7.5.2.1. **(Added)** All discrepancies are debriefed, all applicable MXG-09 worksheet blocks are completed, and MXG-09 is forwarded to MOC.

3.7.5.2.2. **(Added)** All aircraft are debriefed after each flight and status relayed to MOC.

3.7.5.2.3. **(Added)** Weekend cross-country returns are debriefed and debrief provided to MOC.

3.7.5.3. **(Added)** Transient Alert (TA) Supervisor will ensure:

3.7.5.3.1. **(Added)** Knowledgeable technicians debrief aircrews.

3.7.5.3.2. **(Added)** Debriefs are conducted on flightline, at aircraft or in appropriate vehicle.

3.7.5.3.3. **(Added)** Non-AMC transient aircraft are debriefed utilizing AF Form 861, *Base/Transient Job Control Number Register*.

3.7.5.3.4. **(Added)** Non-AMC transient aircraft with discrepancies requiring maintenance are assigned a job control number and discrepancy entered on AF Form 861. When discrepancy is beyond local repair capability, coordinate with MOC and transient aircraft’s homestation for assistance.

3.7.5.4. **(Added)** Maintenance Operations Center (MOC) will:

3.7.5.4.1. **(Added)** Load all discrepancies into MIS (i.e. GO81 screen 9040 or 9050) for all applicable aircraft as they are called in.

3.7.5.4.2. **(Added)** Identify Repeat/Recur discrepancies from last five AFTO 781-series forms.

3.7.5.4.3. **(Added)** Notify Production Supervisor of all Repeat/Recur discrepancies.

3.7.5.5. **(Added)** Maintenance Analysis will complete flying hour reconciliation utilizing AFTO Forms 781 from Graduate Training Integration Management System (GTIMS) IAW Wing Operations Plan.

6.10.10. **(Added)** Procedures for locally developed technical data

6.10.10.1. **(Added)** Office of Primary Responsibility (OPRs) will:

- 6.10.10.1.1. **(Added)** Develop, draft, coordinate, update and modify assigned local publications; route new or revised publication to TODO.
- 6.10.10.1.2. **(Added)** Coordinate with TODO for publication preparation and submission.
- 6.10.10.1.3. **(Added)** Send following to TODO when requesting new local checklist, work card or page supplement: OPR name, address and office symbol, phone number; explanation of request, and draft publication; establish local publication requirement with TODA.
- 6.10.10.1.4. **(Added)** When submitting new local checklist, work card or supplement, consider submitting AFTO Form 22, *Technical Manual (TM) Change Recommendation and Reply*, or AF Form 847, *Recommendation for Change of Publication to Change Current Guidance*.
- 6.10.10.1.5. **(Added)** When notified by TODO for annual review, verify publication currency to determine continued applicability and annotate any required changes. Sign AF Form 399, *Air Force Publication/Form Status Request*, along with Squadron Director, and return to TODO.
- 6.10.10.1.6. **(Added)** If changes required prior to annual review, contact TODO with changes.
- 6.10.10.1.7. **(Added)** After receiving revised local publication and AF Form 673, *Air Force Publication/Form Action Request*, sign, along with Squadron Director and return to TODO.
- 6.10.10.2. **(Added)** TODO will:
- 6.10.10.2.1. **(Added)** Generate AF Form 673 when implementing new local publication or sending local data for review. If no changes required, route AF Form 399 for appropriate signatures to file until next review.
- 6.10.10.2.2. **(Added)** Complete AF Form 673 (i.e. assign local publication number) and return to OPR. OPR and Squadron Director will sign and date form and return to TODO. TODO will coordinate proposed local publication through Quality Assurance (QA) and Director of Maintenance for approval.
- 6.10.10.2.3. **(Added)** Update all local data in Enhanced Technical Information Management System (ETIMS) and Master for eTools.
- 6.10.10.2.4. **(Added)** Maintain paper and/or digital signed copy of local publication, along with AF Form 673 and/or AF Form 399, per Records Disposition Schedule.
- 6.10.10.2.5. **(Added)** Serve as sole authority to issue or delete local publication numbers.
- 6.10.10.2.6. **(Added)** Maintain updated Technical Data Log of all local publications.
- 6.12.6. **(Added)** See [paragraph 6.12.7](#), for Altus AFB FCF/OCF procedures.
- 6.12.7. **(Added)** Procedures for Functional Check Flights (FCF)/Operational Check Flights (OCF)
- 6.12.7.1. **(Added)** Maintenance will:
- 6.12.7.1.1. **(Added)** Notify QA and Plans, Scheduling and Documentation (PS&D) of FCF/OCF requirement.
- 6.12.7.1.2. **(Added)** Ensure Aircraft AFTO Form 781A, Maintenance Discrepancy and Work Document, entry is documented with reason for FCF/OCF.

6.12.7.1.3. **(Added)** Deliver aircraft forms to QA for review NLT 2 hours prior to crew show (Note: Include all aircraft forms from date of incident/maintenance driving FCF/OCF).

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

6.12.7.2.1. **(Added)** Brief flight crew on maintenance action(s) requiring FCF/OCF prior to flight.

6.12.7.2.2. **(Added)** Initiate AF Form 2400, *Aircraft Functional Check Flight Log*.

6.12.7.2.3. **(Added)** Debrief flight crew to ensure: all FCF/OCF requirements completed, AFTO Forms 781 series properly documented, and AF Form 2400 completed, as required. Also, review completed AFTO Forms 781A(s).

6.12.7.2.4. **(Added)** Coordinate with Transient Alert for transient aircraft.

6.12.7.2.5. **(Added)** Route completed FCF checklist and aircraft forms to PS&D for filing in aircraft jacket file.

6.12.7.2.6. **(Added)** Prepare and publish FCF/OCF summary, as required.

6.12.7.2.7. **(Added)** Assist PS&D for off-station FCF/OCF requirements.

6.12.7.3. **(Added)** PS&D will:

6.12.7.3.1. **(Added)** Coordinate with 97 OG in Memorandum of Agreement (MOA) for FCF/OCF requirements.

6.12.7.3.2. **(Added)** Schedule FCF/OCF missions.

6.15.5. **(Added)** Weight and Balance Program Procedures.

6.15.5.1. **(Added)** Applicable Squadron responsibilities:

6.15.5.1.1. **(Added)** Notify Quality Assurance (QA) of changes, as they occur, that affect aircraft W&B status (i.e. rafts, slides, seats, galley, etc.)

6.15.5.1.2. **(Added)** AF Form 4100, KC-135 Load Planning Worksheet, will be inserted into weight and balance handbook for load planning purposes. After the mission complete and equipment removed, remove AF Form 4100 from Weight and Balance Handbook IAW AFI 11-2KC-135, Volume 3, Addenda A, C/KC-135 Aircraft Configuration.

6.15.5.1.3. **(Added)** Ensure W&B inventories performed on all assigned aircraft upon receipt and transfer IAW applicable Dash-5 and Dash-1 series Technical Orders. Perform inventory prior to first flight after arrival. This includes aircraft returning from depot or contract facility where extensive maintenance was performed. Notify QA for W&B update when aircraft reconfigured for Programmed Depot Maintenance (or equivalent) inputs/returns.

6.15.5.2. **(Added)** PS&D Responsibilities:

6.15.5.2.1. **(Added)** Notify QA prior to and upon completion of Time Compliance Technical Orders and modifications affecting aircraft W&B.

6.15.5.2.2. **(Added)** Upon receipt, forward mission fragmentary orders (FRAGs) and AF Form 4100 to applicable maintenance section.

6.15.5.3. **(Added)** Dash-21 Alternate Mission Equipment (AME) Responsibilities: When adding non-standard equipment to KC-135, add weights to load-planning sheet, AF Form 4100, per

mission FRAG and sign AF Form 4100 when equipment loaded. Place AF Form 4100 in aircraft's W&B book and notify QA.

6.15.5.4. **(Added)** Quality Assurance Responsibilities:

6.15.5.4.1. **(Added)** QA W&B official will manage aircraft W&B program.

6.15.5.4.2. **(Added)** Maintain primary and supplemental W&B book for each assigned aircraft.

6.15.5.4.3. **(Added)** W&B qualified personnel will be certified by W&B Authority and included on Special Certification Roster.

6.15.5.4.4. **(Added)** W&B qualified personnel will certify weight and moment on AF Form 4100 for all added equipment not listed on Chart C, and sign upon completion.

7.2.1.1. **(Added)** 97 MXG Impoundment Checklist available on MXQ SharePoint, <https://usaf.dps.mil/teams/aetc-alt-97mx-mxq/QA/default.aspx>. Contact QA for assistance.

7.2.2.1. **(Added)** Dual absence letter will be approved by Director of Maintenance and maintained in QA Impoundment Logbook.

7.2.3. **(Added)** QA will maintain Impoundment Logbook and document all relevant historical information for each impoundment. Logbook will contain all impoundments for current calendar year. Previous years will be maintained electronically. Logbook information will be provided to Impound Release Authority prior to action for any flight restriction decisions.

7.4.2. **(Added)** Impoundment Official will utilize 97 MXG Impoundment Checklist and ensure completed checklist returned to QA after repair action complete and prior to release. Include checklist in Impoundment Logbook for Release Authority review.

7.6.3.1. **(Added)** Ensure all aircraft or equipment records and computer documented maintenance actions for past 90 days are collected and delivered to QA for safeguarding. QA may collect and safeguard documents for Impoundment Official.

7.6.3.2. **(Added)** QA will request and review MIS records for Impoundment Official and inform, as required.

7.6.3.3. **(Added)** QA will review and secure related training records and inform Impound Official, as required.

7.6.3.4. **(Added)** Ensure AETC Form 645-4 completed. Annotate on AETC Form 645-4 that Circuit Breakers pulled.

7.6.5.1. **(Added)** Impound Official will determine need for impound Maintenance Logbook to maintain maintenance action continuity during impoundment. Impound maintenance Logbook use is recommended and when used, all impoundment team members will be briefed on its use.

7.6.8. **(Added)** QA will review forms prior to clearing impoundment discrepancy.

7.7.6. **(Added)** Impoundment procedures and responsibilities.

7.7.6.1. **(Added)** At Impoundment Authority direction, an aircraft or equipment, along with all associated records, may be impounded.

7.7.6.2. **(Added)** When an aircraft or equipment is impounded, a Red "X" symbol will be placed in AFTO Form 781A or AFTO Form 244 with statement describing reason for impoundment. Also enter Impoundment Official name in aircraft forms and in MIS.

7.7.6.3. **(Added)** Impoundment Official will be appointed as the single point of contact for management of impounded aircraft or equipment.

7.7.6.4. **(Added)** Flight Control Malfunctions:

7.7.6.4.1. **(Added)** All uncommanded flight control malfunctions require aircraft impoundment IAW AFI 21-101. **NOTE:** Report autopilot faults if, in opinion of aircrew, the autopilot would have put the aircraft in a hazardous situation.

7.7.6.4.2. **(Added)** Impoundment Authority will use criteria in AFMAN 91-223, Aviation Safety Investigations and Reports, for flight control-related events to determine flight control uncommanded inputs.

7.7.6.4.3. **(Added)** Anytime aircrew reports aircraft flight control event as uncommanded, the aircraft will be impounded.

7.7.6.4.4. **(Added)** A flight control diagnostic team will be assigned to the aircraft during entire troubleshooting/repair process. Impoundment Official will be in charge of aircraft and team.

7.7.6.4.5. **(Added)** Impoundment Official will select team members from qualified technicians. Minimum grades and qualifications of team members are: WG-12 Electronics Integrated Systems Mechanic; WG-10 Aircraft Mechanic qualified in flight control rigging; WG-10 Aircraft Electrician; and WG-10 Pneudraulics System Technician.

7.7.6.4.6. **(Added)** All troubleshooting steps contained in applicable MDS technical orders will be documented on AFTO 781A.

7.7.6.5. **(Added)** Impoundment Procedures for Off-Station Aircraft:

7.7.6.5.1. **(Added)** MOC will be POC for off-station aircraft information between DOM and Operations Officer/Superintendent, and provide assistance for Operation Officer/Superintendent on aircraft impoundment procedures IAW AFI 21-101.

7.7.6.5.2. **(Added)** Upon arrival, Maintenance Officer/Superintendent will coordinate with DOM for assumption of impoundment/release authority.

7.7.6.5.3. **(Added)** MOC will coordinate with Transient Alert for Altus off-station aircraft.

7.7.6.6. **(Added)** The Maintenance Operations Center (MOC) will:

7.7.6.6.1. **(Added)** Initiate "Aircraft Records Impoundment" in MIS.

7.7.6.6.2. **(Added)** Notify Wing Safety, as required.

7.7.6.6.3. **(Added)** Contact applicable MAJCOM/home station for transient aircraft impounds.

7.7.6.6.4. **(Added)** Open impounded records only upon Impoundment Authority approval.

7.7.6.6.5. **(Added)** Serve as POC for Altus aircraft impounded off station.

7.7.6.7. **(Added)** Impoundment Official will:

7.7.6.7.1. **(Added)** Utilize checklist MXG-03 (Quality Assurance Impoundment Worksheet/Checklist).

7.7.6.7.2. **(Added)** Assign fully qualified maintenance technicians to impoundment team.

- 7.7.6.7.3. **(Added)** Ensure all aircraft or equipment records and computer documented maintenance actions for past 90 days are collected and safeguarded.
- 7.7.6.7.4. **(Added)** Maintain Impound Maintenance Logbook.
- 7.7.6.7.5. **(Added)** Keep Impoundment Authority informed on aircraft or equipment status.
- 7.7.6.7.6. **(Added)** Ensure all maintenance actions properly documented during impoundment.
- 7.7.6.7.7. **(Added)** Determine if OCF or FCF is required prior to next flight.
- 7.7.6.7.8. **(Added)** Ensure AETC Form 645-4 completed.
- 7.7.6.7.9. **(Added)** Prior to release:
- 7.7.6.7.9.1. **(Added)** Complete Impound Checklist (MXG-03). Return completed checklist to QA after repair actions completed.
- 7.7.6.7.9.2. **(Added)** Brief Squadron Director or Deputy Director and Impoundment Release Authority on findings and corrective actions. Request aircraft/equipment impoundment release.
- 7.7.6.7.9.3. **(Added)** Upon impound release, Impound Release Authority will:
- 7.7.6.7.9.3.1. **(Added)** Clear impoundment from MIS IAW T.O. 00-20-1.
- 7.7.6.7.9.3.2. **(Added)** Notify MOC that aircraft/equipment has been released from impoundment.
- 7.7.6.7.9.3.3. **(Added)** Complete AETC Form 645-4 and forward a copy to QA.
- 7.7.6.8. **(Added)** QA will:
- 7.7.6.8.1. **(Added)** Utilize MXG-03 impoundment checklist/worksheet.
- 7.7.6.8.2. **(Added)** Enter Red "X" discrepancy into AFTO Form 781A or AFTO Form 244, to include reason for impoundment and name of impoundment official.
- 7.7.6.8.3. **(Added)** Obtain and secure current aircraft/equipment forms and jacket files. Coordinate with Impoundment Official on forms location
- 7.7.6.8.4. **(Added)** Review jacket file and MIS for related history within previous 90 days.
- 7.7.6.8.5. **(Added)** Retain control of aircraft/equipment current forms until released to maintenance by Impoundment Authority.
- 7.7.6.8.6. **(Added)** Coordinate use of MXG-03 checklist/worksheet with Impoundment Official.
- 7.7.6.8.7. **(Added)** For transient aircraft, notify home station or owning command of impoundment as soon as possible. Impoundment notification should contain the following:
- 7.7.6.8.7.1. **(Added)** Aircraft type, serial number, and location.
- 7.7.6.8.7.2. **(Added)** Detailed description of malfunction or unknown condition.
- 7.7.6.8.7.3. **(Added)** All actions taken to correct malfunction or unknown condition.
- 7.7.6.8.7.4. **(Added)** Any known history of problem (i.e., previous malfunctions and corrective actions).
- 7.7.6.8.7.5. **(Added)** Proposed course of action and any assistance required.

7.7.6.8.8. **(Added)** Upon recommendation for release, review aircraft/equipment forms and impound maintenance logbook with Impound Official prior to meeting with Impound Release Authority.

7.7.6.8.9. **(Added)** Clear discrepancy for QA review from AFTO Form 781A or AFTO Form 244 and MIS IAW T.O. 00-20-1.

7.7.6.8.10. **(Added)** Accompany Impound Official to brief Impound Release Authority.

7.7.6.8.11. **(Added)** Ensure pulled forms and jacket file are returned to PS&D.

7.7.6.9. **(Added)** ) Squadrons will:

7.7.6.9.1. **(Added)** Provide letter to QA listing authorized Impoundment Official.

7.7.6.9.2. **(Added)** Utilize MXG-03 checklist/worksheet, as applicable.

7.7.6.9.3. **(Added)** Upon recommendation for release, review aircraft/equipment forms and impound maintenance logbook with Impound Official prior to meeting with Impound Release Authority.

7.7.6.10. **(Added)** Impoundment Authority will:

7.7.6.10.1. **(Added)** Determine if aircraft/equipment impoundment is warranted.

7.7.6.10.2. **(Added)** Select Impoundment Official.

7.7.6.10.3. **(Added)** Approve release of aircraft for maintenance.

7.7.6.10.4. **(Added)** Determine if further actions are required (i.e., depot assistance request, further troubleshooting, FCF/OCF, etc.).

7.7.6.10.5. **(Added)** Clear or direct impoundment be cleared in aircraft/equipment forms.

7.7.7. **(Added)** Aircraft Quarantine.

7.7.7.1. **(Added)** Maintenance personnel will notify MOC through Production Supervision when rodents/pests are discovered aboard aircraft or when directed due to public health concerns.

7.7.7.2. **(Added)** MOC will notify 97 CES/Entomology, 97 OG/CC, and 97 MXG/CL.

7.7.7.3. **(Added)** Maintenance personnel will close and tape all aircraft entrances until Entomology arrives.

7.7.7.4. **(Added)** Upon Entomology arrival, maintenance personnel will advise of last known location of pests/rodents on aircraft and annotate number of traps and location in aircraft forms.

7.7.7.5. **(Added)** After determines aircraft rodent/pest-free, Entomology will remove all traps and tracking patches, and maintenance personnel will update aircraft forms.

**8.2. (Added) Guidelines for Program Management.** See [paragraph 8.2.17](#), for Altus AFB specific procedures.

8.2.17. **(Added)** Composite Tool Kit and Equipment Management.

8.2.17.1. **(Added)** General:

8.2.17.1.1. **(Added)** These instructions provide minimum control and accountability requirements for all 97 MXG personnel. Supervisors will ensure employees utilizing tools for



aircraft/equipment maintenance are familiar with AFI 21-101 AETC Supplement Chapter 8, and AAFB Supplement prior to tool use.

8.2.17.1.2. **(Added)** Backshops with a CTK in shop area are not considered a tool room.

8.2.17.1.3. **(Added)** The only authorized tool accountability computer system is TCMax.

8.2.17.2. **(Added)** Definitions:

8.2.17.2.1. **(Added)** Non-dispatchable Kit. Tools used to perform maintenance wholly within a shop/work center and not used on or around aircraft.

8.2.17.2.2. **(Added)** Dispatchable Kit. Tools used to perform maintenance on/around aircraft.

8.2.17.2.3. **(Added)** Locally Manufactured Tool: A tool manufactured for a specific purpose and not authorized by technical order, or design or manufacture instruction not provided in technical order. (Note: when a tool is T.O.-authorized and tool is altered in any way, it is considered a locally manufactured tool).

8.2.17.2.4. **(Added)** Double Etching. A tool marked with two or more different identifiers.

8.2.17.3. **(Added)** General CTK Instructions:

8.2.17.3.1. **(Added)** Personal cell phone use in prohibited areas outlined in AFI 21-101 AETC Supplement will be approved in writing by MXG Director.

8.2.17.3.1.1. **(Added)** Waiver requests submitted to MXG Director for approval will include: owner's name, office symbol, cell phone manufacturer and serial number. If any information on waiver letter changes, the letter is immediately considered void and a new letter must be submitted. The new letter must be approved prior to cell phone being authorized in prohibited areas. Each individual cell phone waiver request must on a separate letter.

8.2.17.3.1.2. **(Added)** QA will maintain a copy of all approved cell phones waivers.

8.2.17.3.1.3. **(Added)** Personal cell phones will be tracked by serial number.

8.2.17.3.2. **(Added)** Apply reflective tape to all flightline-dispatched kits.

8.2.17.4. **(Added)** Tool Control

8.2.17.4.1. **(Added)** Etch/label each tool (if possible) with an identifier (eTools will not be etched or permanently altered for CTK identification purposes). The identifier will affiliate the tool with owning work center and specific tool box/location. See 97 MXG QA SharePoint, <https://usaf.dps.mil/teams/aetc-alt-97mx-mxq/MXQ/default.aspx>, for list of identifiers. Consolidated tool kits may be etched with World Wide Identifier (WWID) code or other authorized CTK identifiers but cannot be mixed in same CTK.

8.2.17.4.2. **(Added)** Tools will not be double etched. However, special tools, support equipment, and Test Measurement and Diagnostic Equipment (TMDE) may be marked with additional identification. These may be Precision Measurement Equipment Laboratory (PMEL) tags, location IDs, SN, or QG#. These identification tags are used for computer-based tool tracking system, scheduled inspections, or HAZMAT ID and are not considered double etching.

8.2.17.4.3. **(Added)** All kits will have identifiers in plain view on outside of box. Etch padlocks and keys, if applicable.

8.2.17.4.4. **(Added)** Non-etchable items, due to size, construction, or precision requirements will be tagged by other means or held in a container. The container will be marked with contents to include container. If container has separate parts (i.e. bottle and lid) both parts of the container will be identified.

8.2.17.4.5. **(Added)** Technical orders and eTools will be controlled as dispatchable items if used on/around aircraft and issued through TCMax.

8.2.17.4.6. **(Added)** Test equipment dispatched for use on/around aircraft will be controlled as a dispatchable kit.

8.2.17.4.7. **(Added)** When a tool is damaged and removed, the identifier will be obliterated. Warrantied tools will be handled per manufacturer guidance.

8.2.17.4.8. **(Added)** Single person sign out/sign in. Oncoming shift will inspect/inventory CTK. If no oncoming shift, a supervisor or designee will sign in CTK. Person signing out and signing in CTK cannot be the same.

8.2.17.4.9. **(Added)** When job complexity requires tools be turned over at job site, the following procedures will be followed:

8.2.17.4.9.1. **(Added)** On-coming technician accepting responsibility for tools will request a TCMax printout of all tools issued to individual(s) at job site.

8.2.17.4.9.2. **(Added)** An on-site inventory will be conducted by on-coming person accepting responsibility and individual(s) relinquishing responsibility. Both will annotate printout next to items transferred using initials. Any items on printout not initialed must be turned in at shift end.

8.2.17.4.9.3. **(Added)** On-coming shift/shop supervisor will sign printout to acknowledge transfer and deliver to tool room or shop for TCMax update.

8.2.17.4.9.4. **(Added)** Tool room/shop supervisor will ensure printout maintained until all tools on printout returned.

8.2.17.5. **(Added)** CTK Inventory Requirements:

8.2.17.5.1. **(Added)** Dispatchable Kits:

8.2.17.5.1.1. **(Added)** Inventories will include removable trays, rubber tool mats not permanently attached, padlock, key(s), metallic key ring(s), dust caps, FOD bags, plastic zip-lock bags, any metallic tags, and streamers. Holders or containers not affixed to drawer/shelf will be counted on the Master Inventory Listing (MIL)/inventory

8.2.17.5.1.2. **(Added)** Items not required on inventory are: paper inventory listings/MIL, paper tags, (i.e. serviceable/unserviceable tags, PMEL tags, Form 244, Form 1042, etc.), swedged cables (used to attach streamers, etc.), self-adhesive or glued on "inventory pouches", and permanently attached FOD bags.

8.2.17.5.1.3. **(Added)** Special tool repair or service kits with bits and pieces or attachments will have inventory readily identifying all items. Single item special tools do not require inventory.

8.2.17.6. **(Added)** Warrantied and Spare Tool Management:

8.2.17.6.1. **(Added)** All broken tools covered by warranty will be removed from CTK and TCMax updated. When replacement tool is received, defective tool will be given to vendor and replacement tool placed in CTK, and inventory updated.

8.2.17.6.2. **(Added)** Managers are responsible for quantities and inventories of warranted and spare tools. Keep only enough spare/warranted tools on hand to support mission requirements.

8.2.17.7. **(Added)** Expendable and Consumable Tools/HAZMAT items:

8.2.17.7.1. **(Added)** Managers are responsible for quantities and inventories of consumable tools and HAZMAT.

8.2.17.7.2. **(Added)** Keep only enough tools/HAZMAT on hand to support mission requirements.

8.2.17.8. **(Added)** Lost Item/Tool Procedures:

8.2.17.8.1. **(Added)** QA will be notified anytime an item/tool is missing or found. Procedures in AFI 21-101, AETC and AAFB Supplements will be followed.

8.2.17.8.2. **(Added)** QA will post a copy of all completed AETC Forms 138, *Lost Tool or Item Investigation Record*, on QA SharePoint.

8.2.17.9. **(Added)** Tool and Equipment Marking and Identification: Tools and equipment will be marked IAW [paragraph 8.2.17.4](#).

8.2.17.10. **(Added)** Personal Protective Equipment/Individual Issued Equipment:

8.2.17.10.1. **(Added)** Personal tools are not allowed in/around aircraft or maintenance area.

8.2.17.10.2. **(Added)** Individual issued equipment (i.e. ear defenders, reflective belts, miner's lights, safety glasses) will be marked with individual employee number (preferred) or last name initial of individual and last four of social security number.

8.2.17.10.3. **(Added)** Government issued cell phones will be identified with DD Form 2056, *Telephone Monitoring Notification Decal*, with phone number annotated and clearly legible.

8.2.17.10.4. **(Added)** Individual equipment items will be inventoried at least annually and an inventory log will be maintained for minimum 2 years.

8.2.17.11. **(Added)** Procurement of Tools:

8.2.17.11.1. **(Added)** Flight Chiefs will approve all tools prior to purchase.

8.2.17.11.2. **(Added)** The tool procurement manager will coordinate with PMEL for all tool/equipment purchases prior to purchase.

8.2.17.12. **(Added)** Locally Manufactured Tools/Equipment:

8.2.17.12.1. **(Added)** All locally manufactured tools/equipment used on aircraft or support equipment must be approved by QA. Local manufactured tool letters (MXG-37) available on QA SharePoint.

8.2.17.12.2. **(Added)** Tools identified by T.O. for local manufacture are pre-approved.

8.2.17.12.3. **(Added)** Approved local manufactured tool letters maintained on QA SharePoint.

8.2.17.12.4. **(Added)** Biennial letter format available on QA SharePoint.

### 8.2.17.13. (Added) Tool Room Security

8.2.17.13.1. (Added) Consolidated tool rooms are limited access. Tool rooms will remain locked at all times to restrict unauthorized access and all CTKs will be secured.

8.2.17.13.2. (Added) Personnel requiring tool room entry will coordinate with supervisor or CTK attendant.

8.2.17.13.2.1. (Added) Personnel not on access list will be escorted by CTK/shop personnel.

8.2.17.13.2.2. (Added) A log may be used in lieu of an escort. Logs only require NAME, REASON FOR ENTRY, IN/OUT TIMES. Attendant will log entry control log accordingly.

8.2.17.13.2.3. (Added) QA personnel are authorized unescorted entry into all tool rooms.

8.2.17.13.3. (Added) CTK bench stocks will be controlled by limiting access to CTK/shop personnel.

### 8.2.17.14. (Added) Consumable Tools/Supplies:

8.2.17.14.1. (Added) Consumables will be issued and tracked by CTK personnel or shop supervisor/designated representative(s).

8.2.17.14.2. (Added) Consumables and expendable hand tools will be controlled by a one-for-one swap or tracked to ensure return to CTK. When consumable tools cannot be accounted for, lost tool procedures IAW [paragraph 8](#) will be followed.

8.2.17.14.3. (Added) HAZMAT will be issued in TCMax when issued for use where aircraft are operated or parked.

8.2.17.14.4. (Added) Batteries, apexes, and precious metal items will be a one-for-one exchange. Exchange may not be immediate, but will be completed or accounted for by shift end.

8.2.17.14.5. (Added) Bench stock will not be stored on aircraft, in backpacks, personal lockers or on personnel. Backshop bench stock will be monitored by shop personnel.

### 9.17.3. (Added) Local Manufacture (LM) Procedures

9.17.3.1. (Added) LM requests for parts identified with SMR codes MF, MFF, and MO in applicable T.O.s are preapproved for local manufacture. Parts with any other SMR code, such as AF, AO, or AFO, may be approved by Local Manufacture Section (LMS) on case-by-case basis, pending organic capability.

9.17.3.2. (Added) Utilize MIS automated AFTO 350, *Reparable Item Processing Tag*, for all local manufactured items.

9.17.3.3. (Added) Initiator (individual placing original demand on supply) submits references to include T.O. number, figure, index, part number and, if possible, a sample to Decentralized Materiel Support (DMS).

9.17.3.4. (Added) DMS personnel initiate automated AFTO 350 in MIS to identify and track maintenance requirements throughout local manufacturing process. DMS only responsible for initiating AFTO 350 tags for AMXS and applicable Support Section CTK. These tags will include initiator's last name in discrepancy block.

9.17.3.5. (Added) LMS serves as both requestor and approval authority for all local manufactured items during normal duty hours. LMS will:

9.17.3.5.1. **(Added)** Gather drawings, samples, technical data, AF IMT 2005 and DD 1348-6, as required. Obtain drawings using primary Engineering Data Service Center or Joint Engineering Data Management Information and Control System (JEDMICS).

9.17.3.5.2. **(Added)** Ensure LM items delivered to and picked up from applicable Fabrication Flight shop(s), when notified.

9.17.3.5.3. **(Added)** Ensure completed items processed through LRS Flight Servicing Center after completed manufacture of LM item.

9.17.3.5.4. **(Added)** Ensure completed LM items delivered to DMS/TNB and notify initiator of completion.

9.17.3.5.5. **(Added)** Fabrication Flight workcenter manufactures LM item, identifies applicable follow-on maintenance and updates automated AFTO 350 in MIS.

9.17.3.6. **(Added)** After Normal Duty Hours Local Manufacture Requests Procedures:

9.17.3.6.1. **(Added)** MOC Senior Controller and/or Fabrication Flight supervision will serve as approval authority for all after hour local manufacture requests. Maintenance personnel can sign for completed parts during off-shift hours. Local Manufacture personnel will complete/close out necessary requisition forms the following duty day.

11.6.6. **(Added)** Red Ball responsibilities and procedures.

11.6.6.1. **(Added)** Red Ball maintenance begins 2 hours before takeoff and ends when aircraft is removed from flying schedule.

11.6.6.2. **(Added)** T.O. usage will be strictly adhered to and safety requirements complied with.

11.6.6.3. **(Added)** Individual signing off discrepancy will ensure a thorough FOD inspection is performed, accounting for all rags, tools, parts and T.O.s.

11.6.6.4. **(Added)** Flightline Expediter will identify all parts required to be delivered Priority 02.

11.6.6.5. **(Added)** All Red X discrepancies will be cleared prior to flight. Aircraft forms will be annotated IAW T.O. 00-20-1. MOC will close out job in MIS. Time will be input into MIS by maintenance personnel as soon as possible.

11.6.6.6. **(Added)** When MIS not operational, Maintenance Operations Center will document all appropriate information on aircraft maintenance discrepancy list (GO81 product 115).

11.6.6.7. **(Added)** Re-accomplish Exceptional Release prior to re-releasing aircraft to aircrew.

11.8.3.3. **(Added)** Aircraft maintenance supervisors will ensure aircraft protective covers are installed/removed for each weapon system as outlined below:

11.8.3.3.1. **(Added)** C-17:

11.8.3.3.1.1. **(Added)** Hangared aircraft do not require protective covers, with exception of pitot tube probe covers.

11.8.3.3.1.2. **(Added)** Pitot tube probe covers shall be removed/installed IAW applicable T.O.

11.8.3.3.1.3. **(Added)** Pitot tube probe covers will remain installed until as close to crew show as practical.

11.8.3.3.2. **(Added)** KC-135: Follow MDS T.O. for aircraft protective cover requirements.

11.8.3.3.3. **(Added)** KC-46:

11.8.3.3.3.1. **(Added)** Aircraft scheduled to fly or spare, and mission capable aircraft with active pre-flights do not require protective covers to be installed with exception of pitot covers. Pitot covers WILL be installed and remain on until as close to crew show as practical.

11.8.3.3.3.2. **(Added)** Aircraft down for an extended period WILL have following covers installed: Pitot tube, TAT, and ALL engine covers.

11.8.3.3.4. **(Added)** Protective Cover Use in Inclement/Severe Weather Conditions:

11.8.3.3.4.1. **(Added)** Lead time permitting, all protective covers will be installed to protect aircraft from inclement/severe weather.

11.8.3.3.4.2. **(Added)** Supervisors will consider risk management factors prior to directing protective cover installation/removal during inclement/severe weather conditions.

11.8.3.6.5. **(Added)** Any person escorting visitors on Altus AFB flightline will be responsible for ensuring visitors understand and comply with FOD prevention requirements.

11.8.3.6.6. **(Added)** When eyewear is necessary for performing duties in/around engine danger areas, personnel will secure eyewear with non-metallic retainer to prevent from falling.

11.8.3.6.7. **(Added)** Hat/cap wear is permitted on flightline. Hats/caps will not be worn within danger area of operating jet engine, as defined in applicable aircraft specific T.O.

11.8.3.12. **(Added)** All aircraft flight decks will be inspected prior to and after each flight. All aircrew equipment and personal items found on aircraft after flight will be turned into QA.

11.8.4.4. **(Added)** Squadrons will perform a weekly FOD walk in their designated areas. FOD walk supervisor will notify MOC and QA when FOD walk complete.

11.8.4.5. **(Added)** Maintenance personnel will:

11.8.4.5.1. **(Added)** FOD walk aircraft parking spots prior to aircraft blocking in/out, towing aircraft on/off of any spot, or in/out of any hangar.

11.8.4.5.2. **(Added)** Control all work order residue used on/around aircraft, uninstalled engines, and AGE. Flight decks will be inspected for foreign objects prior to flight.

11.8.4.5.3. **(Added)** Ensure work areas are FOD free. Work areas will be inspected and debris removed on a clean-as-you-go basis. Large amounts of FOD will not be allowed to accumulate due to high probability of migration to other areas by wind. Any time worksite where FOD has been generated is abandoned, the area will be cleaned prior to technicians leaving worksite.

11.8.4.5.4. **(Added)** Request flightline sweeper, as required, through MOC. C-17, KC-135 and KC-46 AMUs will make every effort to utilize FOD BOSS daily.

11.8.4.6. **(Added)** Flightline drivers will:

11.8.4.6.1. **(Added)** Perform FOD inspection during daily vehicle inspection to ensure vehicle is clear of any material that could pose a FOD hazard.

11.8.4.6.2. **(Added)** Upon re-entering hard-surface flightline area from unpaved/failed pavement area, stop vehicle and visually inspect and clean all tires of FOD. Drivers will also stop and check for FOD at all entry points with FOD check markings or sign.

11.8.4.6.3. **(Added)** Empty vehicle FOD cans at end of each shift.

11.8.4.7. **(Added)** MOC will:

11.8.4.7.1. **(Added)** Ensure daily log documented for completed FOD walks.

11.8.4.7.2. **(Added)** Request sweepers through Airfield Management Operations when requested by maintenance personnel.

11.8.4.8. **(Added)** Backshops may locally manufacture small FOD containers for use in areas that collection cans not feasible.

11.8.6.1. **(Added)** Immediately report any suspected aircraft or engine FOD incident to MOC. MOC will initiate QRC 64. Maintenance will provide a completed investigation on AETC Form 199, *FOD Incident Investigation*, to QA. Any debris identified on airfield should be removed when possible, or reported to Airfield Management Operation immediately.

11.8.6.4.4. **(Added)** Notify QA prior to blade blending anytime FOD is identified, other than for minor sand nicks or scratches. Ensure evaluated or repaired FOD damage is documented in AFTO Form 95 and Comprehensive Engine Management System.

11.8.6.4.5. **(Added)** For engine FOD, notify Engine Management section with following information for input in engine historical records: engine serial number, stage number, number of blades blended, depth of damage before and after blending, area of damage and employee number of maintenance personnel.

11.9.4. **(Added)** DOP Responsibilities:

11.9.4.1. **(Added)** Upon discovery of a dropped object, maintenance supervisor will:

11.9.4.1.1. **(Added)** Immediately report dropped object to MOC.

11.9.4.1.2. **(Added)** Complete MXG-05, *Dropped Object Worksheet* (available on QA SharePoint) and forward to QA. Deliver copy of worksheet to MOC within 2 hours.

11.9.4.1.3. **(Added)** Check aircraft condition and maintenance history to determine cause.

11.9.4.1.4. **(Added)** Forward all remaining parts to QA for reporting purposes.

11.9.4.2. **(Added)** MOC will notify QA and Command Post of dropped object.

11.9.4.3. **(Added)** DOP manager will:

11.9.4.3.1. **(Added)** Forward dropped object information to Wing Safety and HQ AETC.

11.9.4.3.2. **(Added)** Participate in quarterly FOD/DOP meetings.

11.9.4.3.3. **(Added)** Serve as point of contact for all DOP message traffic.

11.9.5. **(Added)** DOP Training: All assigned personnel performing on-equipment aircraft maintenance will complete DOP training within 60 days of assignment and annually during block training.

11.9.6. **(Added)** DOP Prevention: During pre-launch preparations, ground crews will pay particular attention to loose or missing fasteners on aircraft outer surfaces. Pre-launch checks for DOP will be accomplished per aircraft-specific T.O. or lead command checklist.

11.13.9. **(Added)** Aircraft Cannibalization.

11.13.9.1. **(Added)** Cannibalization Authority (CA) Responsibilities and Procedures (personnel designated as CA on will be on Special Certification Roster (SCR)):

11.13.9.1.2. **(Added)** Approve cannibalization (CANN) actions.

11.13.9.1.3. **(Added)** Coordinate with PS&D or Engine Manager to ensure CANN part has sufficient service life to justify CANN action.

11.13.9.1.4. **(Added)** Ensure CANN action meets AFI 21- 101 justification requirements.

11.13.9.1.5. **(Added)** Identify tail number of donor aircraft.

11.13.9.1.6. **(Added)** Notify DMS and MOC of CANN action. Obtain CANN JCN.

11.13.9.1.7. **(Added)** Coordinate with DMS and MOC to delete CANN action in MIS when CANN action requested erroneously.

11.13.9.2. **(Added)** Owning Work Center Responsibilities and Procedures:

11.13.9.2.1. **(Added)** Ensure documentation in MIS and aircraft forms conforms to AFI 21-101 and 00-20 series T.O. guidance.

11.13.9.3. **(Added)** DMS Responsibilities and Procedures:

11.13.9.3.1. **(Added)** Assign CANN JCNs and relay to CA. Enter CANN job into MIS. When informed by CA or MOC of erroneous CANN action request, delete CANN job from MIS.

11.13.9.3.2. **(Added)** Maintain CANN control logs using local form MXG-36.

11.13.9.3.3. **(Added)** Change “mark for” and JCN of CANN’d parts using MIS, immediately upon request, after assigning CANN JCN, to ensure any part issued or due-out released after JCN assigned goes to correct aircraft. If part is located on base after CANN action occurred, it remains a CANN action and part must be released to donor aircraft.

14.2.3.5. **(Added)** Aircraft Document Review (ADR) Procedures: ADRs will be accomplished every 60 days and at following times: before and after C-17 Home Station Check (HSC) and KC-135 Periodic Inspection (PE), Programmed Depot Maintenance (PDM) input and return, when aircraft off station more than 30 days, when aircraft become Hangar Queen, and when aircraft down for more than 30 days.

14.2.3.5.1. **(Added)** Squadron Responsibilities

14.2.3.5.1.1. **(Added)** Obtain required AFTO 781-series forms, MIS products from PS&D using programs (9032F, 8040 Option A, 8044, and 67081 Option 4) and latest version of ADR checklist, (available on QA SharePoint).

14.2.3.5.1.2. **(Added)** Coordinate with DMS to complete parts validation on MIS product (i.e. G0-81 screen 8044).

14.2.3.5.1.3. **(Added)** Complete engine portion of checklist with Engine Management.

NOTE: for C-17, complete engine validation with Boeing Engine Management.

14.2.3.5.1.4. **(Added)** Ensure maintenance supervisor reviews aircraft forms and ADR package, and signs ADR Checklist.

14.2.3.5.1.5. **(Added)** Deliver completed ADR package and aircraft forms to PS&D for review and validation.



14.2.3.5.1.6. **(Added)** Ensure ADR is signed off in aircraft forms, ADR checklist is annotated and MIS updated.

14.2.3.5.2. **(Added)** Engine Management:

14.2.3.5.2.1. **(Added)** Validate MIS, CEMS and last spreadsheet from Flight Data Recorder for engine operating times, engine cycles, inspection/time change data, engine configuration management, and engine TCTO information.

14.2.3.5.2.2. **(Added)** Annotate checklist corrective action block.

14.2.3.5.3. **(Added)** Decentralized Material Support:

14.2.3.5.3.1. **(Added)** Validate all document numbers using supply information system with MIS data and ensure maintenance discrepancies still open and have valid parts requirement. Assist in ordering parts, as needed, and ensure all parts accounted for in Tail Number Bin.

14.2.3.5.3.2. **(Added)** Annotate checklist corrective action block.

14.2.3.5.4. **(Added)** Production Supervisor: Review aircraft forms, ADR package and sign ADR checklist.

14.2.3.5.5. **(Added)** PS&D will:

14.2.3.5.5.1. **(Added)** Schedule ADR in MIS and add to Weekly Aircraft Utilization Schedule.

14.2.3.5.5.2. **(Added)** Validate aircraft operating time, inspection/time change data, aircraft configuration management and aircraft TCTO data.

14.2.3.5.5.3. **(Added)** Annotate ADR checklist and retain MIS products for aircraft jacket file.

14.3.10. **(Added)** Procedures for locally developed job flow packages, local forms and lists.

14.3.10.1. **(Added)** QA will:

14.3.10.1.1. **(Added)** Approve all additions/changes to local forms packages prior to MIS input.

14.3.10.1.2. **(Added)** Approve all locally developed forms and lists, and assign control number prior to use. Forms mandated by T.O. 00-20-14, Air Force Metrology and Calibration Program, and used only within PMEL are controlled by PMEL.

14.3.10.1.3. **(Added)** Maintain inventory of locally developed job flow packages, forms, and lists, and review/update inventory as required or at minimum annually.

14.3.10.2. **(Added)** PS&D will:

14.3.10.2.1. **(Added)** Authorize personnel to input packages in MIS.

14.3.10.2.2. **(Added)** Review packages IAW AFI 21-101.

14.3.10.2.3. **(Added)** Provide training for inputting packages into MIS prior to authorization.

14.3.10.2.4. **(Added)** Upon QA approval, enter forms packages into MIS when not input by workcenter.

14.5.6.3.8.1.1. **(Added)** AF Form 2407 will contain the following information, at minimum:

14.5.6.3.8.1.2. **(Added)** Date and Time initiated: "YYYYMMDD" format.

14.5.6.3.8.1.3. **(Added)** Initiated by: Name, Rank/Grade, Unit/Office Symbol, Phone Number.

14.5.6.3.8.1.4. **(Added)** Equipment Affected: C-17, KC-46 or KC-135.

14.5.6.3.8.1.5. **(Added)** Schedule Change: List line number from published schedule first, then call sign and requested change. For example, “Line 3/Oiler 22//Change takeoff from 0852 to 0900.” Include reason for mission changes, and additions or deleted lines. Added lines will be listed on next available line after spare regardless of take-off time. See AFI 21-101 AETC Sup, [para. 14.5.6.3.8](#) for changes NOT requiring AF 2407.

14.5.6.3.8.1.6. **(Added)** Effective Date: “YYYYMMDD” format.

14.5.6.3.8.1.7. **(Added)** AF 2407 Routing:

14.5.6.3.8.1.7.1. **(Added)** Initiator routes AF 2407 to authorized Operations and Maintenance approving officials for approval or disapproval in DECISION section. Authorized approval officials are described in AFI 21-101 AETC Sup, [para. 14.5.6.3.8](#).

14.5.6.3.8.1.7.2. **(Added)** Approved AF 2407’s will be electronically routed to following agencies, at minimum: MOC, Command Post, Current Operations, Affected Flying Squadron Scheduling, PS&D, Affected AMU Production Supervisors. Short notice requests will also include phone notification.

BLAINE L. BAKER, Colonel, USAF  
Commander, 97th Air Mobility Wing

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

AFI 11-2KC-135, Volume 3, *KC-135 Flying Operations*, 28 June 21

***Adopted Forms***

AETC Form 199, *FOD Incident Investigation*, 25 June 2007

AETC Form 645-4, *Trend Data Report*, 17 March 2010

AF 2005, *Issue/Turn-in Request*, 26 August 2008

AF Form 847, *Recommendation for Change of Publication*, 22 September 2009

AF Form 2407, *Weekly/Daily Flying Schedule Coordination*, 1 June 1972

AFTO Form 350, *Repairable Item Processing Tag*, 13 April 2011

DD Form 1348-6, *DOD Single Line Item Requisition System Document*, February 1985

***Abbreviations and Acronyms***

**CTK**—Consolidated Tool Kit

**CND**—Could Not Duplicate

**FOD**—Foreign Object Damage

**MOC**—Maintenance Operation Center

**QA**—Quality Assurance

**MIS**—Maintenance Information System

**PS&D**—Plans, Scheduling and Documentation