BY ORDER OF THE COMMANDER
OSAN AIR BASE

AIR FORCE INSTRUCTION 21-101

PACIFIC AIR FORCES
Supplement

OSAN AIR BASE
Supplement

9 AUGUST 2021
Certified Current, 22 February 2024
Maintenance

AIRCRAFT AND EQUIPMENT MAINTENANCE MANAGEMENT

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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RELEASABILITY: There are no releasability restrictions on this publication

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OPR: 51MXG/MXGQ

Certified by: 51MXG/CC
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Supersedes: AFI21-101_PACAFSUP _OSANABSUP, 3 April 2019

Pages: 35

AFI 21-101, *Aircraft and Equipment Maintenance Management* and AFI21-101_ PACAFSUP, are supplemented as follows: It provides guidance for prescribed policies and procedures governing aerospace equipment maintenance management on Osan Air Base. It applies to all Osan Air Base organizations and personnel that maintain aircraft, aircraft systems, equipment, support equipment, and components regardless of Air Force Specialty Code (AFSC). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW Air Force Instruction (AFI) 33-322, *Records Management and Information Governance Program*, and disposed of IAW the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

This publication has been substantially revised and must be completely reviewed in its entirety. Major changes include: the local MXG policy letter for personal electronic devices is located on the QA sharepoint, changes to the approved primary and secondary F-16 Hydrazine/EPU maintenance areas, as well as all tools/items assigned to vehicles will be etched or marked with the vehicle EID. Additionally, 3rd time repeat/recurs will be reviewed at the OIC/Superintendent level, and lastly, the addition of **Chapter 19** ground servicing documentation requirements.

1.15.2.1. **(Added)** Personnel on the flight line are authorized to use personal (non-government issue) cell phones only for communication purposes for official use in completion of primary duties and to improve mission effectiveness. Personal electronic devices on the flightline are governed by the Local MXG Policy Letter located on the QA Sharepoint. **https://osan.eis.pacaf.af.mil/51FW/51MXG/Quality%20Assurance/Shared%20Documents/Forms/AllItems.aspx**.

1.15.2.2. **(Added)** Land Mobile Radios (LMRs) and Cell Phones will not be used under any circumstance within 10 feet of any munitions, explosive loaded aircraft, or munitions trailer.

1.15.2.3. **(Added)** Unless specifically authorized in a flightline photo pass letter, personnel will not use personal electronic device to take photos on the flightline, munitions maintenance areas, hangars and (or) other industrial work areas.

1.15.2.4. **(Added)** Personal electronic devices other than cell phones (for example, pagers, portable music/video players, electronic games) are not authorized on the flightline, munitions maintenance areas, hangars and (or) other industrial work areas. However, these electronic devices may be used inside break areas and dock boxes. They will be stored in backpacks/pockets while being transported to these areas, and will not be used during transport. Additionally, they will not be used in dock boxes/crew shacks during live munitions load (for security). Personal electronic devices on the flightline are governed by the Local MXG Policy Letter located on the QA Sharepoint.
https://osan.eis.pacaf.af.mil/51FW/51MXG/Quality%20Assurance/Shared%20Documents/Forms/AllItems.aspx.

1.15.2.5. **(Added)** Government or personal cellular/personal communications system and/or RF, IR wireless devices, and other devices such as cell phones and tablets, and devices that have photographic or audio recording capabilities are prohibited from areas (e.g., rooms, offices) where classified information is stored processed or discussed. This requirement does not apply if the classified information is locked General Services Administration (GSA) approved safes and/or vaults.

1.18.2.3.1. **(Added)** Squadrons that employ civilians will ensure that procedures are established to continue operations in the event of disruption, termination, or default of contracts.

1.20. (Added) Whenever malware is suspected on. E-Tools (iPads, GETACs, etc), electronic/cyber devices, test/support equipment and components, personnel will immediately notify their Technical Order Distribution Account (TODA) or support section. Units TODAs will notify Technical Order Distribution Office (TODO) and coordinate with Communication Squadron to have devices scanned to validate integrity of eTools and/or equipment. Discontinue use of any device suspected of containing malware.

2.2.3.2. **(Added)** All 51st Fighter Wing (51 FW) personnel, and all tenant/TDY personnel, that operate within aircraft runway/taxi/parking and maintenance areas will comply with all tool control, electronic devices, Foreign Object Damage (FOD) control, and cyber discipline requirements contained within AFI 21-101, AFI 21-101_PACAFSUP, and this publication.

2.4.2.1. **(Added)** The focal point will be 51 MXG/MXO.

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2.4.52.1. **(Added)** Units will determine eTools requirements and forward to 51 MXG/TODO office.

2.4.53.1.1. **(Added)** Each shift, workcenter supervisors will review aircraft/system forms and MIS documentation accomplished by their personnel. Ensure that aircraft/systems and equipment status is correctly reflected in the forms and MIS.

2.4.53.2.1. **(Added)** Accomplish an Aircraft Document Review on all Cannibalization (CANN) and Hangar Queen Aircraft prior to flight.

2.4.53.3.1. **(Added)** During post CANN/Hangar Queen doc reviews, Maintenance Leadership will coordinate with 51 MXG/CC or 51 MXG/CD to determine if an Operational Check Flight (OCF) or Function al Check Flight (FCF) is required.

2.12.19.1. **(Added)** Procedures for Aircraft -21 Covers:

2.12.19.1.1. **(Added)** -21 equipment assigned to an aircraft will be identified by the tail number (Example: A2080).

2.12.19.1.2. **(Added)** Each -21 equipment set will be assigned to an aircraft and will be inspected semi-annually. These inspections will be tracked by the Aircraft Maintenance Units (AMUs) on unit-developed forms.

2.12.19.1.3. **(Added)** AMU -21 monitors will store and account for excess/spare Dash-21 equipment.

2.12.19.1.4. **(Added)** External Fuel Tank (EFT) hardware kits will be stored and controlled in support sections. Support will mark and track which kits are issued.

2.12.19.2. **(Added)** Procedures for Weapons Alternate Mission Equipment (AME)/Normally Installed Equipment (NIE):

2.12.19.2.1. **(Added)** Gun hold back tool will be etched with the serial number of the gun unit. Gun electrical safety pin will be marked to the assigned aircraft. Chaff/flare safety pin will be assigned to the owning unit. All other AME pins do not require markings. All weapons related pins will have streamers with a minimum length of 8 inches, maximum length of 12 inches.

2.12.19.2.2. **(Added)** AMU Weapons Loading NCOIC will ensure generation accessory kits are inventoried NLT every 60 days.

2.12.19.2.3. **(Added)** Weapons Expediters will control and account for installed AME/NIE using AF Form 2434, *Munitions Configuration and Expenditure Document* and Integrated Maintenance Data System (IMDS). In-use Non-installed AME/NIE will be tracked and accounted for by weapons expediter. -21 armament system accessories (cables, orifices, flare mods and plates etc.) will be tracked at all times by weapons expediter by using an approved tracking method (AF Form 2692, *Aircraft/Missile Equipment Transfer/shipping Listing*, TcMAX, etc). Quarterly inventories will be performed on all items.

2.12.19.2.4. **(Added)** Armament Flight AME NCOIC will perform quarterly inventory of all -21 (AME/NIE)

3.10.1.1.1. **(Added)** Notify the Wing Weapons Manager (WWM) of pending manpower issues that impact assigned 2W1X1's (DEROS, CSP, Extensions, Curtailments and Grade/Skill level changes).

3.10.1.22.1. **(Added)** All weapons system Pilot Reported Discrepancies (PRDs) will be documented in IMDS, maintenance logs, and in the 51 MXG Weapons/Muns PRD database. Snapshot of corrective actions will be sent to WWM and Weapons Standardization Section (WSS) Superintendent within 24 hours.

3.10.1.23.1. **(Added)** Release rates will be sent with 9405 report and will be validated against Muns expenditure data to verify accuracy.

3.10.1.24.2. **(Added)** Perform thorough review of all data input on 9405 report prior to submission to WWM NLT the first of each month. This includes supply, serviceability, and maintenance data. Equipment, Munitions Materiel Handling Equipment (MMHE) or -21 that fall below Minimum Equipment Level (MEL), or will have mission impact, will be reported in Defense Readiness Reporting System (DRRS).

3.10.2.2.3.1. **(Added)** Inspections will be documented on the AF Form 2430, *Specialist Dispatch Control Log,* or equivalent form approved by the Wing Weapons Manager.

3.10.2.6.1.1. **(Added)** Retain copies of completed AF Form 2430s, (or equivalent) and AF Form 2434, *Munitions Configuration and Expenditure Document,* (or equivalent) on file for six months.

3.10.2.15. **(Added)** Ensure all accessories or munitions involved in PRDs are annotated on the AF Form 2430, immediately tagged, and put into the repair cycle. All PRD corrective actions will be documented on the Weapons/Muns PRD database and a message will be sent to Armament Mx NCOIC, WS Superintendent and WWM within 24 hours.

3.10.3.1.5. **(Added)** Review quality assurance (QA) reports and Maintenance Standardization & Evaluation Program (MSEP) monthly reports to evaluate trends, personnel proficiency and capability.

3.10.3.3.2. **(Added)** Load Crew are authorized to perform crossloading operations once trained/qualified by WSS. IPL and De-arm procedures will be accomplished IAW WSS Task Assignment Lists (TALs).

3.10.3.3.3. **(Added)** All safing gear and/or devices not identified in the complete round code will be accounted for IAW WWM guidance.

3.10.3.3.4. **(Added)** The weapons load crew and/or weapons expediter will maintain positive control of all items removed during weapons loading and before flight. All items will be returned during refrag/recon. If the items are not returned, the munitions will not be accepted by the Munitions delivery crew until a lost object report has been generated by the weapons load crew and validated by Munitions Control. When items are identified missing, the weapons lead will be notified immediately.

3.10.3.4. **(Added)** Loaded Chaff and Flare mods will only be placed on top of suitable non-conductive mats. Chaff and Flare mods will be stored in standardized locations for each HAS/GEN.

3.10.4.2.4. **(Added)** Perform daily review of aircraft status in respect to combat readiness and compare to Enhanced Maintenance Operations Center (EMOC) to ensure accurate status IAW Minimum Essential Subsystems List (MESL). Up-channel anomalies to Section Chief and Production Super.

3.10.4.2.5. **(Added)** Perform thorough monthly review of all maintenance test equipment, MMHE, and Support Equipment (SE). Report findings in the 9405. Any anomalies that would impact combat readiness or sustainability will be reflected in DRRS.

3.10.4.2.6. **(Added)** Ensure only qualified and appointed individuals respond to unsafe 30mm guns and are identified on IMDS course code 0005.

3.10.4.2.7. **(Added)** AME/NIE associated with on-aircraft PRD's should be turned into Armament for thorough operational, electrical and mechanical reviews and inspections. Can Not Duplicate's (CND's) will be signed off in 781s after thorough visual, electrical and mechanical checkouts are performed. Munitions will be tagged with specific aircraft, AME serial number and PRD details and turned in to Muns for troubleshooting.

4.4.4.1.5. **(Added)** Ensure OSANAB form 57, *External Fuel Tank Delivery Checklist*, is completed upon delivery to External Tank Repair Section or Main Fuel Shop.

4.4.4.2.3.2.1. **(Added)** The primary F-16 Hydrazine/Emergency Power Unit (EPU) maintenance area is located at Flows 15 thru 24. This area will be used to perform the following maintenance of the F-16 EPU: H-70 tank replacement, purge of EPU system, and/or EPU quick-disconnect coupling disconnection/re-connection.

4.4.4.2.3.2.2. **(Added)** The secondary F-16 Hydrazine/EPU maintenance area is located in dispersal "A" (Hard Stand A-10 and A-11) and "C" (Hard Stand C-14 and C-19). These areas shall be used if primary locations are unavailable or authorized by 51 MXS Production Superintendent.

4.4.4.2.3.2.3. **(Added)** Aircraft that have been prepared and determined as "SAFE" for EPU system maintenance, i.e. EPU system disconnect/purge; further EPU maintenance actions, (e.g. component removal/installation and operation checkouts) can be performed at any parking location designated by the owning AMU Production Superintendent.

4.4.4.2.7. **(Added)** Will ensure adequate temporary open fuel tank maintenance facilities are identified and maintained certified in Alpha, Bravo, and Draggin's lair.

4.5.5. **(Added)** User/Aerospace Ground Equipment (AGE) Personnel Responsibilities:

4.5.5.1. **(Added)** Peacetime: Users must return MHU-83 series and MJ-1B series Bomb lifts to the AGE flight not later than every seven calendar days for a complete service inspection. For service inspections on AGE located within the munitions storage area, equipment may remain in the area. However, Munitions Control and the AGE flight will coordinate for completion within the munitions storage area.

4.5.5.2. **(Added)** Contingency/Exercise: During Contingency/Exercise operations the 7-day inspection will be accomplished when servicing the equipment (ie. fuel, oil, hydraulics etc). Post exercise, units will return MHU-83 series and MJ-1B series bomb lifts to AGE for 7-day inspection no later than the first duty day after ENDEX.

4.5.6. **(Added)** 51 FW AGE sub-pools:

4.5.6.1. **(Added)** 25 AMU Sub-pool is located on Hardstand A-12.

4.5.6.2. **(Added)** 36 AMU Sub-pool is located on Hardstand 11.

4.5.6.3. **(Added)** TDY/Deployment units can identify Sub-pool locations as needed with coordination through the Airfield Manager and MOCC.

4.5.6.4. **(Added)** 51 FW Sub-pool is located on Delta hardstand and the Air Mobility Command (AMC) Ramp.

4.5.6.5. **(Added)** AGE refueling station/Sub-pool is located on Hardstand A12-1A.

4.5.7. **(Added)** AGE personnel will notify Maintenance Operations Center (MOC) of possible AGE contamination.

4.5.7.1. **(Added)** AGE Flight leadership in coordination with AMXS/MXA will determine any aircraft that could be possibly contaminated using all available documentation.

4.5.7.2. **(Added)** AGE personnel will notify AMUs of fluid sample results as soon as they are known.

4.6. At the discretion of the 51 MXG/CC and WWM. When the minimum required load crews cannot be met due to manpower constraints within the AMXS and WSS, the Armament Flight may be required to load certify members at a level sufficient to meet established minimum load crew requirements. LIMFACS that impact mission, equipment, MMHE or -21 reliability, sustainability and/or readiness will be reflected in DRRS.

4.6.1.4.1. **(Added)** Quarterly inventories will be accomplished. Procedures will be developed to account for issue/turn-in and long term in-use equipment issued to the AMU's for support of daily operations.

4.6.1.5.1. **(Added)** A monthly War Reserve Material surveillance and status report will approved by Flight Chief and be sent to the 7AF War Reserve Materiel (WRM) Manager and WWM by the 5th of each month.

4.6.1.6.1. **(Added)** The Armament Flight Chief will ensure supply data, Time Compliance Technical Order (TCTO), Awaiting Parts (AWP), and Awaiting Maintenance (AWM) status is accurate and complete.

4.6.2.6. **(Added)** Ensure aircraft gun rounds count and hydraulic drive cycle date is tracked and updated after each firing using P&S, IMDS and any locally derived gun status trackers (if applicable).

4.6.2.7. **(Added)** Review daily flightline PRDs and armament shop repair actions. Document corrective actions in Weapons/Muns PRD database and send to Muns Supervision, applicable AMU Weapon's section and WWM within 24 hours.

4.6.2.8. **(Added)** Ensure Locally Developed unsafe gun course is reviewed annually by Air Force Engineering & Technical Support (AFETS) and approved by MTF and WWM. Maintenance NCOIC will train personnel to respond to unsafe 30mm guns, and ensure training is tracked in IMDS Course Code 0005.

4.6.2.9. **(Added)** AME/NIE associated with on-aircraft PRD's will be turned into Armament for thorough operational, electrical and mechanical reviews and inspections. Munitions will be tagged with specific PRD details and turned into Ammo for troubleshooting.

4.6.4.3. **(Added)** AME NCOIC will verify all WRM maintenance and documentation is completed for WRM assets IAW required tech data, AFIs, and Special Packing Instructions.

4.9.5.11.1. **(Added)** Transient Alert Section will perform End-of-Runway (EOR) per 51 MXG Local Checklist 07.

4.9.5.12.1.1. **(Added)** Transient aircraft Arm/De-Arm/Hung/Unsafe Gun/Munitions will be performed per requirements in OSANABI 21-112, *End of Runway (EOR)/Explosive Loaded Aircraft, Hung Ordnance/Gun System Malfunction Procedures, and Hung Ordnance/Gun System Malfunction Impoundment* and OSANAB Form 56, *Combat Catch Checklist*.

4.11.1.16.8. **(Added)** Oil Analysis Program (OAP) trends are monitored through coordination with the Non-Destructive Inspection (NDI) lab and those trends are briefed quarterly.

4.11.3.5.3. **(Added)** While 51 MXG is not a full Propulsion backshop, serial number inventories are still completed through use of the local Engine Management (EM) serial number worksheet.

5.2.2.5.1. **(Added)** MOC will notify WWM and Muns Superintendent for all incidents involving explosive loaded aircraft. All documents for incidents involving explosive laden aircraft will be routed through WWM, Weapons Safety, and Muns Superintendent.

5.2.5.3.6.6. **(Added)** The following procedures establish manual Job Control Number (JCN) for documentation of all maintenance actions performed on aerospace vehicles and associated equipment when the Integrated Maintenance Data System-Central Data Base (IMDS-CDB) is down for an extended period of time, or when operating under a manual documentation system while deployed. (See **Attachment 13**).

5.2.5.3.6.6.1. **(Added)** In the event of IMDS-CDB being down for an extended period of time, the following manual JCNs/event Identification (ID's) will be used: (See **Attachment 13**).

6.12.7. **(Added)** OCF/FCF Program.

6.12.7.1. **(Added)** An OCF will be conducted any time the 51 MXG/CC feels a confidence flight is required to ensure maintenance action effectiveness or system reliability. OCF profiles are limited to normal flight manual actions and aircraft maneuvers.

6.12.7.2. **(Added)** All OCF aircraft forms will be delivered to QA prior to flight with a current 380 screen for final review. QA will review the aircraft forms prior to OCF and ensure the reason for the OCF does not constitute a reason for FCF IAW applicable directives.

6.12.7.3. **(Added)** OCFs may be flown in conjunction with other missions and training requirements, as long as any specific requirements for the flight will be accomplished.

6.12.7.4. **(Added)** OCF pilots should be briefed by a 51 MXG/QA representative at the Fighter Squadron Operations desk, but will as a minimum call 51 MXG/QA (784-4215) to receive a briefing on the reason for the OCF, maintenance performed, and flight profile (if required) or other pertinent information concerning the OCF.

6.12.7.5. **(Added)** The request to waive an FCF will be made through the FCF office 51 MXG/QA. QA will forward to 51 OG/CC and 51 MXG/CC for approval.

6.12.7.6. **(Added)** Production Superintendents will notify the QA FCF manager the day prior to an FCF to ensure that Basic Postflight/Preflight (BPO/PR) and forms Quality Verification Inspections (QVIs) Basic Postflight/Preflight can be accomplished prior to FCF.

6.12.7.7. **(Added)** The pro super or expediter will deliver all current and pulled forms (back to the last flight) to the QA office for review no later than 8 hours prior to launch. Plan for 2 hours for every 100 pages of 781As to ensure a thorough review. Also, an additional forms review will be conducted post exceptional/conditional release. Forms QVIs are required prior to each FCF attempt.

6.12.7.8. **(Added)** Basic Postflight/Preflight (BPO/PR) QVIs will only be accomplished after all maintenance has been completed and documented. BPO/PR QVIs are only required prior to first FCF attempt.

6.12.7.9. **(Added)** The FCF pilot and a qualified FCF technician will sign the DD Form 365-4, *Weight and Balance Clearance Form F – Transport/Tactical*, prior to FCF.

6.12.7.10. **(Added)** QA will accomplish a preflight QVI prior to the first OCF/FCF attempt.

6.12.7.11. **(Added)** AMUs will configure aircraft for FCFs. The FCF configuration for A-10 is: all munitions downloaded, variable ballast installed, and all pylons (station 6 is optional) and launchers removed. FCF configuration for F-16 is: both wing tip launchers match (LAU-129s) and no pylons or Pods installed

6.12.7.12. **(Added)** 51 OG/CC and 51 MXG/CC will determine FCF requirements on a case by case basis for aircraft that experience a ground or flight related mishap as defined in DAFI 91-204, *Safety Investigations and Reports*.

6.15.3.3.2. **(Added)** New TCTOs will be forwarded to QA Weight and Balance (W&B) personnel for review to ensure whether or not W&B changes are required.

6.15.3.3.3. **(Added)** For TCTOs that require W&B changes, P&S will load Red Dash Work Center Event (WCE) to the TCTO Job Standard Table (JST).

6.15.3.3.4. **(Added)** When the TCTO is completed on an aircraft, the technicians enter a Red X in the forms and Maintenance Information Systems (MIS) stating "Weight and Balance update required for TCTO ____" and notify QA W&B technicians. The aircraft will not be flown until the aircraft Weight and Balance records are updated.

6.15.3.4.1. **(Added)** Aircraft weapons configurations will be loaded per the published weekly flying schedule, or approved Standard Conventional Load (SCL). QA W&B Manager will ensure that proposed configurations are approved IAW AFI 63-101/20-101, *Integrated Life Cycle Management*, and that there is a valid Weight and Balance Clearance, DD Form 365-4 on file. Any deviation from these configurations requires approval by QA W&B, WWM, and Muns Sq. Deviations must be approved NLT 24 hours prior to approved flying schedule.

6.15.5. **(Added)** Whenever technicians make permanent changes that affect the aircraft basic weight and/or center-of-gravity, they will notify QA W&B technicians so the aircraft W&B records can be updated. The aircraft will not be flown until the W&B records are updated.

7.2.1.1.1. **(Added)** For Cockpit Foreign Object (FO) recovery procedures. The following must be completed (Maintenance Group supervision may approve deviations from this procedure at their discretion):

7.2.1.1.1.1. **(Added)** MXG LCL 350 F.O./Suspected F.O. in Cockpit Investigation Checklist (A-10) and 51 MXG LCL 351 F.O./Suspected F.O. in Cockpit Investigation Checklist (F-16) checklists

7.2.1.1.1.2. **(Added)** 51 MXG/CC, or designated representative, will sign off Red "X" for cockpit F.O. not found/not recovered.

7.2.1.3. **(Added)** Engine Impoundment:

7.2.1.3.1. **(Added)** Aircraft impoundment, which can be positively identified to the engine, shall be released with a statement in the Corrective Action block stating "Aircraft Impoundment cleared and transferred to engine serial number XXX." Release can only be accomplished once the engine is removed from the aircraft.

7.4.4. **(Added)** Impound official will send an e-mail daily to 51 MXG leadership on status of impound (Including non-duty days if Aircraft is worked).

7.4.5. **(Added)** Insert an AFTO Form 781A, *Maintenance Discrepancy and Work Document* impoundment preprint (with red border) in front of the active AFTO Form 781A.

7.4.6. **(Added)** Ensure all components requiring impoundment are listed on the OSANAB Form 55, *Impoundment Checklist*, with assigned control number prior to clearing the aircraft impoundment.

7.4.7. **(Added)** QA will maintain copy of Impound Checklist and 51 MXG Form 145 (**https://osan.eis.pacaf.af.mil/51FW/51MXG/Quality%20Assurance/SitePages/QA%20Home.aspx**) or OSANAB Form 58, *Lost Tool/Object Report*.

7.6.3.4.1. **(Added)** Ensure all recoverable data is collected prior to operating systems that may dump stored information.

7.6.4.2.1. **(Added)** Verify all “suspected” parts are sent to backshop. An AFTO Form 350, *Repairable Item Processing Tag*, bordered in red with the word "IMPOUNDED OPR: (Impoundment Official Name), (phone)" written on the bottom of the tag will be attached with each part removed from an impounded aircraft/equipment. Coordinate with the QA office and contact the back shops work center prior to determining the disposition of any parts. All suspected parts should be considered for deficiency reporting through the product improvement office.

7.6.4.3. **(Added)** Ensure that the preprinted AFTO Form 781A for impoundment and a copy of the 51 MXG Form 145 or OSANAB Form 58, (if applicable) is filed in the aircraft's jacket file.

7.6.4.4. **(Added)** Backshops/Armament will follow procedures outlined in AFI 21-101, Chapter 7, and OSANAB Form 55, for all equipment directly involved in an aircraft impoundment once removed from the aircraft. An AFTO Form 350, bordered in red, will be attached to equipment immediately after removal from the aircraft and will be processed and documented as per applicable 00-20-xx series.

7.6.11. **(Added)** Isolate equipment by affixing a placard stating "Equipment Impounded." For equipment that has a control panel, the placard will be affixed as close as possible to the panel. Impounded equipment will be isolated from equipment that is serviceable or awaiting maintenance. Monitor maintenance actions until completion of impoundment. Support sections are responsible for maintaining the security of impounded equipment.

8.2.3.2. **(Added)** Support sections will separate unserviceable warranty tools from non-warranty tools.

8.2.4.1. **(Added)** A stock of spare tools is authorized. Spare Tools custodians will authorize the tools and quantities to be maintained. Perform spare tools inventory every 90 days. During the inventory, the Spare Tools custodian will validate the quantity of tools/items within each bin. To aid in accountability, control, and inventory, each tool/item will be separated by use of individual bins or dividers, and sequentially numbered accordingly. Quantity of tools per bin may be more than one, but must be same tool/item. Access to spare tools will be limited to the shift supervisor (or equivalent) and Spare Tools custodian.

8.2.4.2. **(Added)** Do not issue replacement tools without a turn-in of the unserviceable tool or applicable 51 MXG Form 145 or OSANAB Form 58.

8.2.5.2. **(Added)** Guidance for flightline turnover of Composite Tool Kit (CTK)/ Tool/Equipment items. Production Superintendents can authorize flightline turnover of CTK/Tool/Equipment items to provide continuity on aircraft requiring extensive maintenance.

8.2.5.3. **(Added)** The individual accepting responsibility for the CTK and any other tools will do a thorough inventory and complete a TCMax produced hand receipt (TCMax hand receipt can be interchanged with AF Form 1297, *Temporary Issue Receipt* /ACC 140, *CTK Inventory and Control Log* /locally developed product). A Senior Non Commissioned Officer (SNCO), or sortie generation cell chief will verify turnover inventory is accomplished and will provide his/her minimum signature and employee number on the hand receipt if used.

8.2.5.4. **(Added)** The TCMax produced hand receipt will be returned to the tool section immediately upon completion.

8.2.5.5. **(Added)** Technicians will take the hand receipt into the support section for turnover.

8.2.8.1.1. **(Added)** Mark all individually issued equipment (hearing protectors, reflective belts, headsets, safety glasses, gloves, etc.) with the owner's first initial, last name, and 5-digit employee number (i.e. J. Doe, 01234). Units will control and track which items have been issued to their personnel.

8.2.8.2. **(Added)** Members will maintain accountability for all individually issued and personally purchased equipment and will be marked IAW **Paragraph 8.2.8.1.1;** In the event that one of these items becomes lost or missing, follow applicable lost tool procedures.

8.2.9.4. **(Added)** Issuance of rags not located in CTKs will be tracked in TCMax.

8.2.9.5. **(Added)** Pre-packaged rags placed inside of CTKs will have the number of rags and Equipment Identification Designator (EID) clearly marked on the package, and will be annotated on the Master Inventory Listing (MIL).

8.2.9.6. **(Added)** Rags identified as "clean replacement rags" or "dirty unserviceable rags" need to be stored in separate, labeled, secured containers. Inventories are required for "clean replacement rags" and "dirty unserviceable rags." Rags will be issued as a one-for-one swap and access will be limited to Support Section and CTK Monitors.

8.2.10.1. **(Added)** Limitation on numbers of personnel procuring tools will be controlled by CTK custodian on a case by case basis.

8.2.12.1. **(Added)** Field Service Representatives (FSRs)/ Depot Field Teams (DFTs)/ Contract Field Teams (CFTs) are authorized to utilize 51 MXG unit's tools/equipment, at the discretion of squadron leadership.

8.2.12.2. **(Added)** If these teams perform maintenance to 51 MXG aircraft with their own tools/equipment, and their Contracting Officer Representative (COR) does not inspect them, Plans & Scheduling and/or squadrons will notify 51 MXG quality assurance so that FSRs/DFTs/CFTs tools/equipment can be inspected prior to contracted maintenance and upon completion of contracted maintenance.

8.2.13.2. **(Added)** Because of the necessity to disperse assets in wartime and simulated wartime periods, tools and equipment are authorized to be sub-located into sub-pools. The tool turnover procedures below will be followed when mission needs occur, such as local exercises, IG inspections lasting more than one day, and during contingencies.

8.2.13.3. **(Added)** The CTK custodian will designate a Protective Aircraft Shelter (PAS)/GEN for each sub-located CTK, which will be input in TCMax. Items moved to the sub-pool will be signed-out in TCMax to the sub-pool. AMU supervision will designate a CTK custodian for each shift who will be responsible to control and account for all items in the sub-pool.

8.2.13.4. **(Added)** Tools/CTKs will be secured in a predetermined location within the PAS/ Hardened Aircraft Shelter (HAS) when not signed out.

8.2.13.5. **(Added)** Sub-pools will be inventoried at each shift change.

8.2.13.6. **(Added)** Support personnel will conduct 180 day inspections on sub-pool CTKs.

8.2.13.7. **(Added)** Sign-out/turnover procedures:

8.2.13.7.1. **(Added)** The individual signing out the CTK will sign out keys for a sub-located CTK and complete a 100% inventory.

8.2.13.7.2. **(Added)** Support personnel will issue the CTK to the individual in TCMax.

8.2.13.7.3. **(Added)** During turnover, the CTK will be inventoried by support personnel, the individual who currently has the CTK checked-out, and the person who is signing-out the CTK.

8.2.13.7.4. **(Added)** During contingency operations and exercises, HAWG/CELL bosses are authorized the authority to turnover CTKs and will be the primary representative.

8.2.13.8. **(Added)** Turn-in procedures:

8.2.13.8.1. **(Added)** When the CTK is ready for turn-in, 100% inventory of the CTK will be completed by Support personnel or designated representative, and the individual who has the CTK signed out. Support personnel will take possession of the CTK keys and return it to the Support section. Finally Support personnel will sign-in the CTK in TCMax, giving Support accountability of the CTK.

8.2.13.8.2. **(Added)** Support personnel will be the primary means of turning-in CTKs. Designated CTK turn-over/turn-in representatives should only be utilized when Support personnel are unavailable.

8.2.14.2. **(Added)** Crash recovery equipment used infrequently and stored in crash trailers will be assigned as a CTK with inventory, and have a monthly inventory and inspection when not used. When used, the trailer will be signed out in TCMax and a complete inspection and inventory of all assets will be conducted at the beginning and end of the crash recovery operations.

8.2.15.2. **(Added)** When situations warrant a single-person shift for support sections, the tool room inventory during turn-in will be conducted by an NCO or higher that did not sign-out tools from that support section during that shift. This could be a Pro-Super, Expediter, Shift Lead, member of another unit's support section, etc. Under no circumstances will the same individual that signs out the CTK room sign it back in.

8.2.16.1. **(Added)** Access to tool rooms will be limited to support personnel and key personnel. Key personnel will be identified in writing by the tool room/Support Section NCOIC.

8.3.6.6.1.1. **(Added)** The following items have been identified and approved by QA, as too small to be marked, etched, or stamped with a Worldwide Identification (WWID): Apex bits, drill bits, jewelers files, and allen wrenches.

8.3.6.6.2. **(Added)** Items that are not etched must still meet the requirements of paragraphs **8.3.6.6 and 8.3.6.6.1** Requests to not etch items that not listed in **paragraph 8.3.6.6.1.1;** will be approved by QA Superintendent.

8.3.6.7.1.1.1. **(Added)** The standardized form to document missing, removed, and/or broken tools/items is the OSANAB Form 51, *Broken/Removed/Damaged Tool Log*. Units may use either the OSANAB Form 51, or the MIL to document broken/removed tools/items.

8.3.14. **(Added)** Engine blade blending blue dye is not authorized at Osan AB. If shops need to mark damage areas, they will use a suitable substitute (e.g. GG-M-00114 marker).

8.5.2.1.1. **(Added)** The same individual that signs out the CTK/equipment will not sign it back in. For example, oncoming personnel shall log into TCMAX database and sign in the CTK, then oncoming personnel will issue out the CTK to themselves.

8.5.5.6.1. **(Added)** Units that bring TOs, eTools, and associated support equipment with eTools to support mobility requirements will ensure that those items are updated IAW T.O. 00-5-1, *AF Technical Order System*.

8.6.1.2.1.4. **(Added)** The WWID designator will be etched as outlined below on tools.

Table 8.1. (Added) Worldwide Identification Codes.

5lst Aircraft Maintenance Squadron		5lst Maintenance Group	
25 AMU	OPAA	QA	OPQA
36 AMU	OPAB	AFREP	OPGF
51st Maintenance Squadron		WSS	OPML
Accessories Flight	OPMC	MOC	OPMO
AGE Flight	OPMG	25th Fighter Squadron	
Avionics Flight	OPMV	Aircrew Flight Equipment	OPFA
Fabrication Flight	OPMF	36th Fighter Squadron	
Metals Tech Section	OPFM	Aircrew Flight Equipment	OPFB
Structures Section	OPFS	5th Reconnaissance Squadron	
NDI Section	OPFN	5th RS	BD5R
Maintenance Flight	OPMT	51st Munitions Squadron	
Propulsion Section	OPMP	Armament	OPMR
TMDE Flight	OPMD	Conventional/Pre-Load	OPMX
Phase Section	OPMA	PGM	OPMM
Transient Alert Section	OPTT	MSEM	OPME
Wheel & Tire Section	OPTW	Flight Line Delivery	OPLD
Fuels Section	OPCF	Inspection	OPMI
Egress Section	OPCG	Storage	OPMS
Hydraulics Section	OPCP	51st CES Barrier Maintenance	
E & E Section	OPCE	51 CES Barrier Maintenance Maintenance	OPBM*
*This shop is not required to use TAS (TCMAX) by AFI 21-101. Tools will be etched with this code for accountability purposes.			

8.6.1.2.2. **(Added)** Ensure all calibrations for TMDE Laboratory items are current and labels are properly documented. Labels must be legible; if the Master ID Listing (Tool Accountability System (TAS) or paper copy) and the TMDE calibration label are in conflict, then the Master ID Listing on the item will be the guide for the calibration requirements.

8.6.1.4.5.2. **(Added)** Feeler gauges will be marked with the number of blades with tool.

8.6.1.4.6. **(Added)** All tools/items assigned to vehicles, i.e., flashlights, ice scraper, and provided manufactured tools will be etched or otherwise permanently marked with the EID and will be annotated in appropriate vehicle forms. If lost or misplaced, these items will be reported in accordance with lost tool/item procedures. E.G.: Fire extinguishers and FO cans.

8.7.5.1. Maintenance Group Deputy Commander (51 MXG/CD), Maintenance Group Superintendent (51 MXG/CCC), or the Quality Assurance Superintendent are designated to approve locally manufactured, developed, or modified tools and equipment. This approval will be in writing.

8.7.4. **(Added)** Request for new tool approval must include a description, diagram or picture of the item, intended use, and list of materials required. Additionally, requests will contain the required ratings of the materials used to manufacture the item (weight, pressure, power, etc). The intent of this requirement is to ensure that all materials used to manufacture the tools will safely function under required voltages, loads, pressures, etc.

8.7.5. **(Added)** Locally Manufactured Equipment (LME) placed in CTKs/Tool Kits (TKs) will be identified on the MIL with the applicable 51 MXG number assigned to the tool, or a reference to the applicable T.O. giving local manufacture guidance.

8.7.6. **(Added)** Units will maintain approved paperwork for all locally manufactured tools that are in use by their sections.

8.7.7. **(Added)** The WSS Superintendent will maintain a copy of all local manufactured tool paperwork in the Weapons Standardization (WS) Master CTK binder for all loading related LMT items.

8.9.2.1.1.1. **(Added)** Upon notification of a lost tool/item, the pro super or equivalent will determine if a quick freeze is required, and if so, contact MOC to initiate OSANAB Form 54, *Emergency Checklist 113, Quick Freeze.* If the lost tool/item is not found after 30 minutes, the Pro Super will notify MOC to initiate checklist OSANAB Form 53, *Emergency Checklist 112, Lost Tool/F.O. On Aircraft.*

8.9.2.1.1.2. **(Added)** MOC will transmit all pertinent information about the Quick Freeze over all radio nets to assist in immediate location of the item. Ensure Operations (OPS) and Munitions Control is notified upon Quick Freeze implementation and is aware of location and item involved.

8.9.2.1.1.3. **(Added)** Once a Quick Freeze is initiated, only aircraft movement in the affected areas will cease until the Quick Freeze is terminated. If the Quick-freeze is related to lost/missing/dropped objects, then the Production Superintendent/Expediter will ensure a thorough search of the affected area(s) is performed to expedite aircraft movement.

8.9.2.1.1.4. **(Added)** During the Quick Freeze, if it is determined that the missing item is not in a general area/sector, the Production Superintendent may determine an alternate taxi route for all unaffected aircraft and notify Squadron Operations.

8.9.2.1.1.5. **(Added)** If the item is found, the Quick Freeze will be terminated by the Production Superintendent in conjunction with Squadron Operations. If the item is not found, the Quick Freeze can only be terminated by the 51 MXG/CC or designated representative.

8.9.2.3.4. **(Added)** QA will assign a lost tool/item tracking number and provide to MOC. Once a tracking number has been assigned, the report must be completed even if the lost tool is found. The completed 51 MXG Form 145 or OSANAB Form 58, must be submitted digitally to the QA org box within 5 duty days from the date of initiation for filing. If there is cockpit FO associated with the lost item/tool the cockpit FO checklist will need to be turned in with the report. QA files/maintains the original report for one year.

8.9.2.6.2.1. **(Added)** For lost tools/items that were not found, the Squadron Operations Officer/MX SUPT or higher will sign completed report. For lost tool/items that were found, the AMU OIC/SUPT can sign the completed report.

9.17.2.1.1. **(Added)** All local manufacture (LM) of parts will be limited to items that are mission essential, as determined by LM Approval Authorities. This will be documented using the OSANAB Form 50, *Local Manufacture Request.*

9.17.2.2.1. **(Added)** Squadron Commanders, Squadron Maintenance Officers/Superintendents, AMU OICs/Superintendents, Flight Chiefs, and Production Superintendents are approval authorities LM parts. Squadron Commanders may designate other LM approval authorities. Requests for LM are made through the requesting squadron's LM approval authority to the fabricating squadron's approval authority.

9.17.2.2.2. **(Added)** If LM approval authorities are not available, Production Superintendents can get verbal authority so that manufacturing work can begin. Locally manufactured parts will not be installed on aircraft/equipment until LM paperwork is signed by approval authorities.

9.17.2.3.2. **(Added)** Coordinate LM requests using OSANAB Form 50. Additional LM paper work includes 1348-6, 2005s, 350 tag, Tech Data information for the part, engineering drawings, and an IMDS printout of the JCN, to include a WCE for each work center involved in the manufacture. The requesting organization will initiate the request and paperwork.

9.17.2.3.3. **(Added)** Upon notification of LM request, the fabricating LM approval authority will verify source maintenance recoverability (SMR) code and, if required, the fabricating element will request proper depot disposition to authorize local manufacture.

9.17.2.4.2. **(Added)** The requesting organization will, if possible, provide a sample part, technical order information, and/or drawings of the LM item, and assist in identifying and obtaining required materials.

9.17.2.4.3. **(Added)** The prime manufacturing shop will verify if all material is on hand. If not, they will coordinate with requesting organization to procure required bits and pieces.

9.17.2.4.4. **(Added)** The manufacturing shop will provide appropriate NSNs and the requester will submit AF2005, *Issue/Turn-in Request*, to their supply section to acquire material.

9.17.2.5.1. **(Added)** The requesting organization will document a job for all work centers involved in the manufacturing process, with IMDS JCN and tag information.

9.17.2.5.2. **(Added)** After LM has been approved and completed; the fabricating LM approval authority will ensure the depot requisition is canceled.

9.19.6. **(Added)** Panels removed to Facilitate Other Maintenance (FOM) will be stored on padded panel racks or pads. Panels may be stored in the HAS/GEN only if they accompany the aircraft and are properly tagged. Parts removed to FOM will be stored on pads in FOM.

11.3.1. Air Reserve Component (ARC) personnel assigned to 51MXG will be placed on the Special Certification Roster (SCR) before performing tasks which require SCR approval.

11.6.5.1.1. **(Added)** In the event that MIS is down, units will utilize local manual Job Control Numbers (see **Attachment 13**). Personnel will utilize AFTO form 349s, *Maintenance Data Collection Record*, to document items requiring entry into MIS. AMU expediters, phase dock chiefs, and/or backshop shift leads will maintain AFTO 349s that require entry into MIS. Once MIS is available, personnel will utilize the AFTO 349s to enter maintenance actions into MIS. Section NCOICs will ensure proper entry into MIS.

11.8.3.3.1. **(Added)** -21 equipment will be removed no earlier than 30 minutes prior to scheduled crew show time, and installed within 30 minutes of engine shut down. Additionally, covers will be removed no earlier than 30 minutes prior to maintenance runs, and reinstalled within 30 minute of engine shut down. If personnel leave the area of the aircraft, all covers need to be installed.

11.8.3.6.6. **(Added)** No hats on the flightline. Exceptions are government issued cold weather hats that have chin straps, stocking caps, bicycle safety helmets, navy bump helmets/safety bump cap, tank driver helmets and combat helmets.

11.8.3.6.7. **(Added)** Ponchos will not be worn within 50 feet of the intake of an operating aircraft.

11.8.3.8.1. **(Added)** Store all loose hardware in draw string (cloth) bags or zip lock plastic bags and annotate the bag with the quantity of each item (i.e., five bolts, five nuts). Furthermore, annotate the bag with the serial number of the aircraft, uninstalled engine, AGE, and/or off equipment component. If bags are reused, line through all previous information.

11.8.3.10.2.1. **(Added)** Units will submit a memorandum to the Wing FOD Monitor that outlines their FOD walk plan to cover their specific area of responsibility. (See **Attachment 14**).

11.8.3.10.2.2. **(Added)** All units (including TDY units) will ensure FOD walks are accomplished at the start of each flying day and throughout the day as needed in their assigned aircraft parking areas, hangars and adjacent taxiways. (See **Attachment 14**).

11.8.3.10.2.3. **(Added)** FOD sweepers/bosses are to be used in all aircraft movement areas in the Alpha Diamond, Draggin's Lair, and Bravo Diamond (when aircraft are taxied in this area), in addition to daily FOD walks. They will be used a minimum of 1 hour per flying day, weather permitting. Any section not in possession of this equipment will coordinate with other sections to the maximum extent possible to meet this guidance.

11.8.3.10.2.4. **(Added)** EOR crews will conduct a FOD walk of the arm and de-arm areas prior to aircraft arrival and after aircraft departure.

11.8.3.10.2.5. **(Added)** Only aircraft/munitions tow vehicles and two wheel drive fire department vehicles are authorized to use chains on taxiways or ramps. The tow vehicle operator may use chains only when towing and snow or ice accumulation warrants the need. All vehicle operators are responsible for ensuring chains are of closed link design (no "C" or "S" links) and checked for FOD potential before each use.

11.8.3.10.2.6. **(Added)** Studded snow tires are not authorized on any vehicle driven on the flightline.

11.8.3.12.2.1. **(Added)** Aircrew will account for all items taken into cockpits. Any items that become lost will be debriefed and documented in the AFTO Form 781A's.

11.8.3.13.1. **(Added)** Prior to engine start during ice FOD conditions, as a minimum, clear an area three feet in radius of all standing water, slush, snow and ice directly below the intake.

11.8.3.13.2. **(Added)** During F-16 engine runs while in an icing condition, position a qualified individual safely in front and to the side of the aircraft to function as an ice observer and to watch for ice formation on the intake lip.

11.8.3.14.1.1. **(Added)** Affix red "REMOVE BEFORE FLIGHT" streamers to covers and safety pins. Mark them with the aircraft tail number.

11.8.4.1.2. **(Added)** Each squadron commander will appoint Squadron FOD/Dropped Object Prevention (DOP) representatives and alternates. Forward a copy of the appointment letter to Wing FOD/DOP Prevention monitor.

11.8.4.1.3. **(Added)** A FOD bulletin board is kept at each unit location. One centrally located board may cover all shops located in a single building. Placement is at the discretion of the individual squadron, but the location must provide the greatest visual access to personnel. The squadrons are responsible for obtaining and maintaining the bulletin board. The space on the bulletin board may be shared provided the following items are displayed:

11.8.4.1.3.1. **(Added)** Wing FOD Monitor Poster

11.8.4.1.3.2. **(Added)** FOD Reporting POC Poster

11.8.4.1.3.3. **(Added)** FOD Responsibility map (**Attachment 14**).

11.8.4.1.3.4. **(Added)** Most recent FOD Flash

11.8.4.2.2.1. **(Added)** Aircraft parts involved in a FOD mishap will be held for investigation until cleared by the Wing FOD Manager and Flight Safety. For FOD incidents of unknown cause, it is recommend to use a Failure Analysis Service Technology (FAST) FOD kit, at the discretion of the Wing FOD Monitor and/or the QA Superintendent.

11.8.5.4.3. **(Added)** Squadron FOD Committee representatives will ensure a FOD continuity binder is maintained and set up in accordance with the master binder in the Wing FOD Monitor's office. This will also serve as the unit's deployable FOD binder.

11.8.5.7. **(Added)** 51 FW, Vice Commander and FOD manager will promote a wing wide quarterly FOD Prevention Poster contest, FOD Fighter of the Quarter contest, and Golden Bolt Awards. The Golden Bolt: The object has the words GOLDEN BOLT written on it and includes the phone number of the FOD manager. The object shall NOT be placed in the vicinity of any taxiing aircraft and/or within 25' of any aircraft intake. Additionally, FOD Manager must have view of the object at all times while placed on the Airfield. Personnel finding the object will return it to the FOD manager. There may be up to three Golden Bolt winners per quarter. FOD Fighter of the Quarter: Supervisors may submit nominations in memorandum format to the FOD manager by the last day of the quarter. The FOD Council and/or the FOD manager selects the winner based on the likelihood that the action taken by the individual will prevent a FOD mishap. FOD Prevention Poster of the Quarter: Individuals may submit entries to the FOD manager by the last day of the quarter. The FOD council and/or FOD manager selects the winner. FOD Fighter of the Quarter and FOD Prevention Poster winners will receive a plaque. All FOD recognition program winners will receive a one-day pass from the 51 FW/CV and a certificate of recognition.

11.8.8.1. **(Added)** Report all bird strikes to Flight Safety through MOC and/or Command Post. Do not clean bird remains until sample has been taken by Flight Safety or QA.

11.9.2.3.1. **(Added)** Dropped object incidents will be immediately reported to MOC, who will initiate OSANAB Form 52, *Emergency Checklist 110, Dropped/Lost Object (Inflight/Ground),* and notify the wing DOP monitor and QA. QA and/or the Wing DOP monitor will assist the unit in investigating each dropped object incident.

11.11.3.1. **(Added)** When Identification Friend or Foe (IFF) MODE IV/MODE C checks are required, the location will be with aircraft in chocks prior to taxi.

11.12.2.1.1. **(Added)** The Wing Avionics manager will be appointed as Radar Warning Receiver/Radar Threat Warning (RWR/RTHW) manager.

11.12.2.3.2. **(Added)** Units will provide EW -6 test results to the Wing Avionics Manager (WAM) within the first five days of the month for the previous month.

11.12.2.3.2.1. **(Added)** Units will not modify or delete any -6 test results that were collected.

11.12.2.3.2.2. **(Added)** Units will utilize RWR Pit tracker for applicable MDS and turn them no later than one day following RWR Pits.

11.12.2.4.1. **(Added)** The RWR/RTHW Manager will serve as primary point of contact for 25/36th Fighter Squadron (FS) Electronic Combat Pilots (ECP) regarding RWR/RTHW testing program issues.

11.13.9. **(Added)** AMU Supervision will designate a CANN Manager. Specific Dedicated Crew Chief/Cannibalization (DCC/CANN) Manager responsibilities:

11.13.9.1. **(Added)** CANN Manager will schedule a forms review with Plan and Scheduling before the aircraft enters CANN status and perform a records check every seven days, thereafter.

11.13.9.2. **(Added)** CANN Manager will review aircraft forms and IMDS daily to ensure that all CANN actions are documented in the AFTO Form 781As, to include document numbers, references, and CANN numbers and all completed maintenance actions have been properly cleared.

11.13.9.3. **(Added)** Inspect the aircraft and ensure that all connectors/lines disconnected during component removal from the night prior are capped or covered. If items were not covered, inform the owning shops of the discrepancy.

11.13.9.4. **(Added)** Inspect the aircraft for leaks and area around the aircraft for foreign objects; clean up leaks and empty the drip pans as required. If leaks and/or foreign objects are found that were obviously left from maintenance, inform the owning shops.

11.13.9.5. **(Added)** Verify IMDS-CDB, AFTO Form 781A, and Supply match each other. Provide feedback to owning shops of discrepancies noted.

11.13.9.6. **(Added)** Whenever possible, correct delayed discrepancies and perform time changes, TCTOs and/or scheduled maintenance, as required. Exception: battery cap checks may be delayed until the aircraft is being rebuilt.

11.13.9.7. **(Added)** IMDS-CDB will be the primary source of data used in CANN data compilations. The CANN Log will be used as manual back-up system for cannibalization actions accomplished during IMDS-CDB downtime and will be entered into IMDS-CDB when available. The maintenance systems analysis section chief will develop procedures to verify IMDS-CDB cannibalization data prior to reporting.

11.14.6.6. **(Added)** Hangar queen manager will be identified in EMOC assigning responsibility.

11.22.2.1.3. **(Added)** Refer to Nestable Fuel Tank Build-Up (NFTBU) local training plan for all 51 MXG NFTBU training requirements.

11.25.4.1. **(Added)** Hot Pit Refueling Procedures:

11.25.4.2. **(Added)** The cursory crew may be comprised of the same individuals performing the hot pit refueling; however, cursory procedures must be accomplished outside the hot pit flow-through.

11.25.4.3. **(Added)** The cursory crew will consist of a supervisor (5 or 7-level aircraft maintenance AFSC to act as a safety observer and marshal aircraft into the flow-through area.

11.25.4.4. **(Added)** Cursory crew will chock the aircraft, perform cursory check, and leave chocks installed until cursory check is done.

11.28.2.6.1.1. **(Added)** Ensure a minimum of three personnel are available for all In-Flight Emergency/Ground Emergency (IFE/GE) initial responses.

11.28.2.6.1.2. **(Added)** Ensure that the on-scene commander or senior fire department official has released the aircraft before employing the crash recovery crew.

11.28.2.6.1.3. **(Added)** Develop and maintain a logbook or file to record scenario types and equipment employed. Ensure only those personnel who were actually involved are credited with completion of training requirement when actual aircraft emergencies are used to satisfy the intent of quarterly training requirements.

11.28.2.6.1.4. **(Added)** The crash recovery crew will tow emergency aircraft clear of the active runway or taxiways. If required to respond to another IFE/GE; the owning organization will tow locally assigned aircraft to their specific parking location. The crash recovery crew will tow transient aircraft to parking location.

11.28.2.6.1.5. **(Added)** The crash recovery supervisor will determine equipment and/or support requirements for crashed and disabled aircraft after a physical assessment of the aircraft.

11.28.2.8. **(Added)** Crash Recovery will tow aircraft off the runway and park at the nearest location (eg Doorstop, EOR, Base Operations Ramp). Crash Recovery will not tow aircraft back to original parking spot unless the IFE aircraft is the last aircraft down for local flying.

11.41. (Added) Repeat/Recur and CND Discrepancies Clearing Procedures. When clearing a Repeat/Recur and CND discrepancy, the AMU Supervision will ensure an adequate corrective action was accomplished and the following procedures are strictly adhered to. This review will be documented in the AFTO Form 781As on a Red dash. For 1st time repeat/recurs, this review will be cleared by a 7-level technician. For 2nd time repeat/recurs, this review will be completed by the Production Superintendent. For 3rd time repeat/recurs, the OIC/Superintendent will complete the review.

11.41.1. **(Added)** Aircraft forms, IMDS-CDB and other source documents will be thoroughly reviewed using a minimum 90-day look back. Consult with AFETS/Tech Reps/System Program Office (SPO) for additional technical assistance as necessary.

11.41.2. **(Added)** Parts removed for most probable cause will be bench checked if capability exists, and AFTO Form 350 tag will be annotated with Repeat/Recur or CND (in red lettering) as applicable.

14.1.3.4. **(Added)** Establish a system to ensure daily review of AF Form 2434, *Munitions Configuration and Expenditure Document*. Closely monitor all rounds counts, munition firings on AF Form 2434 daily, and special occurrence and event driven time change requirements (guns, bomb racks/missile launcher firings) during Armistice and Contingency to ensure no inspections exceed T.O. requirements.

14.1.3.5. **(Added)** Closely monitor in-work TCTOs monthly to ensure on-time completion is on schedule and advise the affected agencies when TCTO kits or mission plans may or would impact on-time completion/compliance.

Chapter 16 (Added)

JACKED AIRCRAFT

16.1. (Added) Performing maintenance while aircraft is on jacks. Personnel will observe all tech data and Air Force Manual (AFMAN) 91-203, *Air Force Occupational Safety, Fire, and Health Standards*, requirements. AFMAN 91-203, paragraph 24.8.1.4 states, "Personnel shall not pass under, climb or walk on any portion of the aircraft when the entire aircraft is supported by jacks, except to support jacking activities or when operationally necessary to perform maintenance." The work center supervisor (i.e. pro-super or dock chief) will determine what is operationally necessary or who is authorized to work the aircraft. Personnel shall not start performing maintenance while aircraft is on jacks until coordinating with the pro-super or dock chief. If aircraft center-of-gravity is in question, contact QA weight and balance technicians.

Chapter 17 (Added)

SINGLE PERSON LAUNCH AND RECOVERY

17.1. (Added) F-16 Single-Person Launch and Recovery (SPL/R). In an effort to utilize personnel in the most efficient manner, trained personnel are authorized to perform SPL/R procedures, IAW T.O. 1F-16CG-6WC-1-11, *Combined PreFlight/PostFlight, End-Of-Runway, ThruFlight, Launch and Recovery, Alert Inspections, Quick Turnaround, Basic PostFlight, and Walkaround Before First Flight of Day Inspection Workcards.*

17.2. (Added) Qualifications, training and certification for SPL/R will be as follows:

17.2.1. **(Added)** The prerequisite for SPL/R is qualified SrA or higher, unless waived by AMU Superintendent/OIC, with current qualification on normal, two-person aircraft launch and recovery.

17.2.2. **(Added)** SPL/R training must be conducted and documented on each person and must be certified by a 7-level qualified SPL/R person.

17.2.3. **(Added)** The certifier will not be the same person as the trainer and the certifier must visually watch the person perform the SPL/R prior to documenting the trainee's training records.

17.2.4. **(Added)** The SPL/R training and certification will be documented in individual Training Business Area (TBA) Workcenter Job Qualification Standard (WJQS).

17.2.5. **(Added)** Training must place special attention on aircraft danger areas, safety awareness and response to "Red Ball" maintenance IAW AFI 21-101.

17.3. (Added) During "Red Ball" maintenance. if the aircraft engine must be shut down, a minimum of two personnel must be present IAW applicable technical data. The ONLY exception to the two-person requirement is for emergency situations (i.e. auto excel, fire, over temp, severe hydraulic leak). In emergencies, the engine will be shut down immediately, regardless of the number of personnel present.

17.4. (Added) SPL/R will only be used if. Specialist and Weapons personnel are needed for maintenance, training, or other functions as determined by the Production Superintendent and AMU supervision.

17.5. (Added) SPL/R is NOT authorized for aircraft flying with live munitions. SPL/R is authorized for aircraft loaded with CATM missiles.

17.6. (Added) Production Superintendents will. Coordinate with Ops (Top 3) which lines will be single person launch/recovery prior to crew show. Upon arrival at the aircraft, the crew chief will identify to the pilot that he/she will be performing a single-person launch/recovery. Safety is paramount and requires vigilant adherence by both the ground crew and the pilot to ensure hands remain clear of all controls and throttle while the crew chief is not in direct visual contact with the pilot. Prior to disconnecting communications on launch and prior to approaching the aircraft on recovery, the crew chief will get clearance from the pilot and signal the pilot to keep hands up until visual or voice communication is established. All other procedures for SP/R are outlined in the applicable -6 work cards.

Chapter 18 (Added)

ECS REQUIREMENTS

18.1. (Added) High Humidity Months (May-October).

18.1.1. **(Added)** Due to excessive failures involving the F-16 Environmental Control System (ECS), the 51 MXG will implement the following requirements.

18.1.1.1. **(Added)** During the months of May-October, the ECS socks on all F-16s will be changed every 50 flying hours.

18.1.1.2. **(Added)** All F-16 units will follow the local procedures for applying cooling air during the months of May-October (see local checklist 01).

Chapter 19 (Added)

GROUND SERVICING

19.1. (Added) Servicing Cart Documentation. When ground servicing equipment is utilized to perform aircraft servicing (i.e., engine oil, hydraulics, LOX, GOX), the AF Form 3126, *General Purpose*, Oil/Hydraulic Cart Servicing Log, AFTO 134, *Aviator Breathing Oxygen Servicing Trailer Log*, as applicable, will be documented at job completion. When the equipment servicing log becomes full, notify AGE and leave it in the forms storage pouch. Units will then obtain a blank form, complete the heading, and begin using the new form.

19.1.1. **(Added)** AGE will maintain all completed AF Form 3126, *General Purpose*, and AFTO Form 134 for a minimum of 30 days.

JOHN F. GONZALES, Colonel, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 63-101/20-101, *Integrated Life Cycle Management*, 30 June 2020

AFMAN 91-203, *Air Force Occupational Safety, Fire, and Health Standards*, 11 December 2018

DAFI 91-204, *Safety Investigations and Reports*, 10 March 2021

AFI 33-322, *Records management & Information Governance Program*, 23 March 2020

T.O. 00-5-1, *AF Technical Order System*, 25 January 2021

T.O. 1F-16CG-6WC-1-11, *Combined PreFlight/PostFlight, End-Of-Runway, ThruFlight, Launch and Recovery, Alert Inspections, Quick Turnaround, Basic PostFlight, and Walkaround Before First Flight of Day Inspection Workcards*, 1 May 2020

OSANABI 21-112, *End of Runway (EOR)/Explosive Loaded Aircraft, Hung Ordnance/Gun System Malfunction Procedures, and Hung Ordnance/Gun System Malfunction Impoundment*, 23 January 2019

Prescribed Forms

OSANAB Form 50, *Local Manufacture Request*

OSANAB Form 51, *Broken/Removed/Damaged Tool Log*

OSANAB Form 52, *Emergency Checklist 110, Dropped/Lost Object (Inflight/Ground)*

OSANAB Form 53, *Emergency Checklist 112, Lost Tool/F.O. On Aircraft*

OSANAB Form 54, *Emergency Checklist 113, Quick Freeze*

OSANAB Form 55, *Impoundment Checklist*

OSANAB Form 56, *Combat Catch Checklist*

OSANAB Form 57, *External Fuel Tank Delivery Checklist*

OSANAB Form 58, *Lost Tool/Object Report*

Adopted Forms

AF2005, *Issue/Turn-in Request*

AF Form 847, *Recommendation for Change of Publication*

AF Form 1297, *Temporary Issue Receipt*

AF Form 2430, *Specialist Dispatch Control Log*

AF Form 2434, *Munitions Configuration and Expenditure Document*

AF Form 2692, *Aircraft/Missile Equipment Transfer/Shipping Listing*

AF Form 3126, *General Purpose*

AFTO 134, *Aviator Breathing Oxygen Servicing Trailer Log*

AFTO Form 349, *Maintenance Data Collection Record*

AFTO Form 350, *Repairable Item Processing Tag*

AFTO Form 781A, *Maintenance Discrepancy and Work Document*

ACC Form 140, *CTK Inventory and Control Log*

DD Form 365-4, *Weight and Balance Clearance Form F-Transport/Tactical*

Abbreviations and Acronyms

51FW—51st Fighter Wing

AFMAN—Air Force Manual

AFRIMS—Air Force Records Information Management System

AFETS—Air Force Engineering & Technical Support

AFSC—Air Force Specialty Code

AGE—Aerospace Ground Equipment

AMC—Air Mobility Command

AME—Alternate Mission Equipment

AMU—Aircraft Maintenance Unit

ARC—Air Reserve Component

AWM—Awaiting Maintenance

AWP—Awaiting Parts

BPO/PR—Basic Postflight/Preflight

CANN—Cannibalization

CFT—Contract Field Team

CND—Can Not Duplicate

COR—Contracting Officer Representative

CTK—Composite Tool Kit

DCC/CANN—Dedicated Crew Chief/Cannibalization

DFT—Depot Field Team

DOP—Dropped Object Prevention

DRRS—Defense Readiness Reporting System

ECP—Electronic Combat Pilots

ECS—Environmental Control System

EFT—External Fuel Tank

EID—Equipment Identification Designator

EM—Engine Management

EMOC—Enhanced Maintenance Operations Center

EOR—End-of-Runway

EPU—Emergency Power Unit

FAST—Failure Analysis Service Technology

FCF—Function al Check Flight

FO—Foreign Object

FOD—Foreign Object Damage

FOM—Facilitate Other Maintenance

FS—Fighter Squadron

FSR—Field Service Representatives

GSA—General Services Administration

HAS—Hardened Aircraft Shelter

IFE/GE—In-Flight Emergency/Ground Emergency

IFF—Identification Friend or Foe

IMDS—Integrated Maintenance Data System

IMDS-CDB—Integrated Maintenance Data System-Central Data Base

JCN—Job Control Number

JST—Job Standard Table

LM—Local Manufacture

LME—Locally Manufactured Equipment

LMR—Land Mobile Radio

MEL—Minimum Equipment Level

MESL—Minimum Essential Subsystems List

MIL—Master Inventory Listing

MIS—Maintenance Information System

MMHE—Munitions Materiel Handling Equipment

MOC—Maintenance Operations Center

MSEP—Maintenance Standardization & Evaluation Program

NDI—Non-Destructive Inspection

NFTBU—Nestable Fuel Tank Build-Up

NIE—Normally Installed Equipment

OAP—Oil Analysis Program

OCF—Operational Check Flight

OPR—Office of Primary Responsibility

OPS—Ensure Operations

PAS—Protective Aircraft Shelter

POC—Point of Contact

PRD—Pilot Reported Discrepancy

OPR—Office of Primary Responsibility

QA—quality assurance

QVI—Quality Verification Inspection

RDS—Records Disposition Schedule

RWR/RTHW—Radar Warning Receiver/Radar Threat Warning

SCL—Standard Conventional Load

SCR—Special Certification Roster

SMR—Source Maintenance Recoverability

SNCO—Senior Non Commissioned Officer

SPL/R—Single Person Launch/Recovery

SPO—System Program Office

TALs—Task Assignment Lists

TAS—Tool Accountability System

TBA—Training Business Area

TCTO—Time Compliance Technical Order

TKs—Tool Kits

TODA—Technical Order Distribution Account

TODO—Technical Order Distribution Office

W&B—Weight and Balance

WAM—Wing Avionics Manager

WCE—Work Center Event

WJQS—Workcenter Job Qualification Standard

WRM—War Reserve Materiel

WS—Weapons Standardization

WSS—Weapons Standardization Section

WWID—Worldwide Identification

WWM—Wing Weapons Manager

Attachment 13 (Added)

MANUAL JOB CONTROL NUMBERS (JCNS)

Table A13.1. Manual Job Control Numbers (JCNS).

SECTION/ACTIVITY	ASSIGNED JCNS
Maintenance Operations Center	5000-5049
Cannibalizations	5050-5099
Aircraft Accident/Incident	123A-123Z
Special Reports	12AA-12AZ
51st Maintenance Group	
Weapons Standardization	5100-5199
Quality Assurance	5200-5299
Quality Assurance	7900-7949
51st Maintenance Operations Squadron	
Plans & Scheduling Time Change	5300-5399
Plans & Scheduling TCTO	5400-5499
Engine Management	7950-7999
Reserved for Future Use	5500-5799
25 AMU	
Specialist Section	5800-5899
Weapons Section	5900-5999
Dispatch	6000-6099
Debriefing	6100-6199
Debriefing (Deployed)	D500-599
Plans & Scheduling	6200-6299
Support	6300-6399
Aircraft Serial Number	
80-0153	6400-6409
79-0183	6410-6419
80-0167	6630-6639
80-0245	6670-6679
80-0967	6610-6619
80-0283	6420-6429
82-0651	6430-6439
82-0652	6440-6449
78-0685	6650-6659
78-0688	6460-6469
78-0696	6470-6479
81-0959	6480-6489
81-0971	6490-6499
80-0973	6500-6509
81-0979	6510-6519
79-0159	6520-6259
78-8615	6530-6539
78-8632	6540-6549

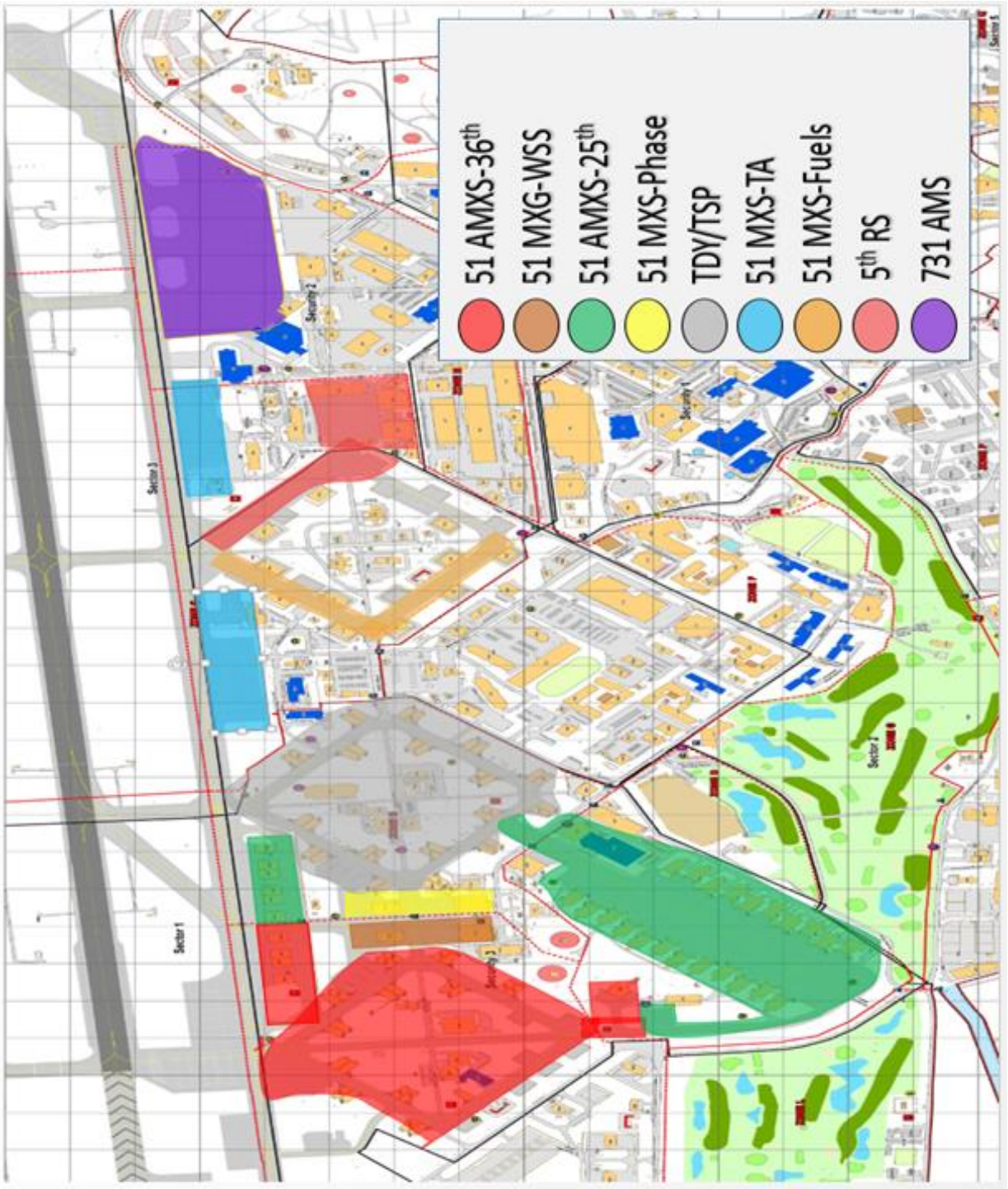
78-8716	6550-6559
79-9092	6560-6569
79-9106	6660-6669
79-9134	6680-6699
79-9201	6580-6589
79-9211	6590-6599
Reserved	6600-6609
500 Hour Phase #1	A001-A999
1000 Hour Phase #2	B001-B999
36 AMU	
Specialist Section	6700-6799
Weapons Section	6800-6899
Dispatch	6900-6999
Debriefing	7000-7099
Debriefing (Deployed)	D600-D699
Plans & Scheduling	7200-7299
Support Section	7200-7299
Aircraft Serial Number	
88-0440	7300-7309
88-0494	7310-7319
88-0513	7500-7509
88-0531	7330-7339
88-0536	7340-7349
88-0538	7350-7359
88-0540	7360-7369
88-0544	7670-7679
88-0547	7370-7379
89-2014	7380-7389
89-2020	7390-7399
89-2033	7400-7409
89-2043	7410-7419
89-2052	7420-7429
89-2080	7430-7439
89-2122	7440-7449
89-2127	7680-7689
89-2130	7450-7459
89-2133	7460-7469
89-2136	7470-7479
89-2139	7480-7489
89-2140	7590-7599
90-0710	7600-7609
90-0743	7610-7619
90-0756	7690-7699
90-0774	7630-7639
90-0775	7640-7649
90-0779(0)	7650-7659

90-0780(0)	7660-7669
400 Hour Phase #1	A001-A999
800 Hour Phase #2	B001-B999
51st Maintenance Squadron	
AIS	8000-8099
TMDE Type II	8100-8199
ECM	8400-8499
Propulsion	8550-8649
Fuels	8650-8699
Egress	8700-8749
Wheel & Tire	8750-8799
TAC Electro/Environmental	8800-8849
Pneudraulics	8850-8949
AGE (Non-Powered)	8950-8999
AGE (Powered)	9000-9099
Transient Maintenance	T400-T599
NDI	9100-9149
Metals Technology	9150-9199
Structural Repair	9200-9249
51st Munitions Squadron	
Armament Systems (25 CAST)	9300-9349
Armament Systems (36 CAST)	9350-9449
Reserved For Future Use	9450-9999
90-0771	7620-7629

Attachment 14 (Added)

FOD WALK AREAS OF RESPONSIBILITY

Figure A14.1. FOD Walk Areas Of Responsibility.



Attachment 15 (Added)

51OG/MXG LINE NUMBERS

Table A15.1. 51OG/MXG Line Numbers.

LINE NUMBERS	REMARKS
026 – 030	36 FS FCF/OCF Lines
031 – 058	36 FS Cross Country & Cross Country Return Lines (To & From Osan)
076 – 100	36 FS Alert Lines
101 – 200	36 FS Deployment Lines (Off station deployment/TDY (i.e. Red Flag))
201 – 275	36 FS Home station/Local training Lines
276 – 300	36 FS HHQ Add Lines
301 – 400	36 FS Local Exercise Lines (Day 1/3/5 etc.)
401 – 500	36 FS Local Exercise Lines (Day 2/4/6 etc.)
501 – 550	25 FS Alert Lines
551 – 600	25 FS Cross Country & Cross Country Return Lines (To & From Osan)
601 – 675	25 FS Home station/Local training Lines
676 – 700	25 FS HHQ Add Lines
701 – 800	25 FS Local Exercise Lines (Day 1/3/5 etc.)
801 – 900	25 FS Local Exercise Lines (Day 2/4/6 etc.)
901 – 910	25 FS FCF/OCF Lines
911 – 940	25 FS Deployment Lines (Off station deployment/TDY (i.e. Red Flag))
941 – 999	Theater Security Package Lines