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Headquarters 1 Fighter Wing (ACC)



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AIRCRAFT AND EQUIPMENT
MAINTENANCE MANAGEMENT

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This supplement implements and extends the guidance of Department of the Air Force Instruction (DAFI) 21-101, *AIRCRAFT AND EQUIPMENT MAINTENANCE MANAGEMENT*, dated 20 December 2023, and ACC Supplement to DAFI 21-101, dated 5 September 2023. This publication applies to all 1st Fighter Wing (1FW) personnel involved with on and off equipment maintenance operations. This supplement describes 1FW procedures to be used in conjunction with the basic instruction. Each squadron will ensure access is available to a copy of DAFI 21-101, and the ACC Supplement to DAFI 21-101. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR), 1FW, using AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the applicable unit through the appropriate functional chain of command.

SUMMARY OF CHANGES

This Instruction supplements DAFI 21-101 and the ACC Supplement to DAFI 21-101. This document has been heavily revised. Personnel should review the entire product for pertinent changes.

Chapter 1 MANAGEMENT OVERVIEW, SUPPORTING CONCEPTS AND REQUIREMENTS.

1.15. Communications.

1.15.1.1. **(Added-1FW)** Government commercial mobile devices are not authorized for photography use unless the MXG/CC or equivalent, or respective maintenance authority (MA) authorizes their use for the performance of official business.

1.15.1.1.1. **(Change-1FW)** Personal electronic and communication devices (e.g. cell phones, pagers, portable music/video players, electronic games) are **NOT** authorized on the flightline, munitions areas, hangars, and/or other industrial work areas, unless waived per the unit CC. The member must carry the waiver letter on their person.

1.15.1.1.1.1. **(Added-1FW)** Unit Commanders may authorize in writing exemptions for the following personnel operating in key duties that may require cell phones for official use inside of the previously mentioned areas. Personnel exempt are still required to remain 10 feet from the aircraft during cell phone usage.

1.15.1.1.1.1.1. **(Added-1FW)** FGS – CC, SEL, DO, Sortie Gen/Supt Flight Chiefs, Production

Superintendent, and expeditors.

1.15.1.1.1.1.2. **(Added-1FW)** MXS – CC, SEL, DO, Maintenance Superintendent, Flight CC/Superintendent, Production Superintendent.

1.15.1.1.1.1.3. **(Added-1FW)** Muns – CC, SEL, DO, Flight CC/Superintendent, Section NCOIC

1.15.1.1.1.1.4. **(Added-1FW)** MXG – CC, Deputy, SEL, QA Inspectors, MOCC Lead Controllers

Chapter 2 ROLES AND RESPONSIBILITIES.

2.4. Maintenance Group Commander (MXG/CC) Responsibilities.

2.4.16. **(Change-1FW)** Ensure all MXG non-LO SNCOs and above will attend the AFETS LO Management course (CC 6050) within 6 months of assignment or promotion.

2.9. Maintenance Supervision Responsibilities.

2.9.1.1. **(Added-1FW)** Wing Low Observable (LO) Aircraft Structural Maintenance Functional will perform this function for AFSC 2A7X3 and 1 MXS/SEL will have final determination in any disputes.

Chapter 3 AIRCRAFT MAINTENANCE SQUADRON (AMXS)/GENERATION SQUADRON.

3.10. Weapons Section.

3.10.1. **(Added-1FW)** Will notify MOC when a munitions delivery or pickup changes the current fire reporting hazard for the flightline.

3.13. Low Observable (LO) Aircraft Structural Maintenance Section.

3.13.1. **(Added-1FW)** Aero Only (AO) configurations will be used in very limited circumstances when confidence flights are deemed necessary prior to full LO restoration. Application of an AO configuration must be approved by FGS supervision.

3.13.2. **(Added-1FW)** AO aircraft will be scheduled for full restoration at the same time the decision is made to go AO and will start restoration as soon as possible.

3.13.3. **(Added-1FW)** AO aircraft will be limited to no more than four (4) sorties before being returned to a fully mission capable status, with the following exceptions:

3.13.3.1. **(Added-1FW)** The system/subsystem fault in question which drove the AO condition repeats or recurs IAW AFI 21-101, necessitating additional maintenance or troubleshooting.

3.13.3.2. **(Added-1FW)** When approved by the MXG/CC/CD.

Chapter 4 MAINTENANCE SQUADRON (MXS)/GENERATION SQUADRON.

4.2. Maintenance Supervision Responsibilities.

4.2.7. **(Added-1FW)** Designate a LO SNCO as the Wing Low Observable (LO) Aircraft Structural Maintenance Functional responsible for LO AFSC development and LO personnel comprehensive training. LO Functional Manager will coordinate with applicable Squadron SELs to coordinate personnel rotation and training.

4.5. Aerospace Ground Equipment (AGE) Flight.

4.5.2.13.1. **(Added-1FW)** The AGE Flight will be responsible to ensure operational equipment is placed at the designated sub-pools and/or ready lines. Ready lines and sub-pools are established by the AGE flight.

4.5.2.13.2. **(Added-1FW)** AGE Ready Line: A ready line is a designated parking area for AGE that are ready for use. Before parking AGE on the ready line, a service inspection shall be performed and annotated in Part II of the AFTO Form 244. The AGE ready line is located on the Langley AFB Fighter Ramp, directly south of Building 757 (AGE Shop), and sits on the east side, adjacent to their AGE sub-pool and is cordoned with solid white paint markings outlining the area AGE shall only be placed in this designated by AGE personnel.

4.5.2.13.3. **(Added-1FW)** AGE Sub-Pool: A sub-pool is a parking area designated by the Airfield

Management office that provides authorized pooling of serviceable AGE to enhance proximity support to using organizations. AGE is not required to be fully serviced when parked in a sub-pool. Additionally, a current service inspection is not required to be signed off in Part II of the AFTO Form 244. The sub-pool is located on Langley AFB Fighter Ramp and sits adjacent to the AGE-ready line on the west side. This area is outlined with dashed white paint markings outlining the area. Equipment may be dropped off at the sub-pool by any flightline personnel.

4.11. Propulsion Flight.

- 4.11.1.3.2. **(Added-1FW)** Obtain the Significant Historical Data (SHD) Report and/or Automated History Entries (AHE) and all engine/module records from the EM prior to shipping an engine/module off base.
- 4.11.1.17. **(Added-1FW)** The Propulsion flight chief should be contacted prior to removing an engine for an unscheduled engine change.
- 4.11.2.2. **(Added-1FW)** The Support Section is responsible for maintenance on engine transfer and removal/installation trailers. FS/FGS personnel will ensure trailers are inspected prior to issuing and return and must be properly configured for towing upon return. Trailers must be returned and inspected by Support Section personnel with FS/FGS personnel present before transferring possession.
- 4.11.3.6.2.6.1. **(Added-1FW)** IPI's are included in IMIS engine work packages and are reviewed by filtering embedded in IMIS.
- 4.11.3.6.2.11.2. **(Added-1FW)** Ensure AFTO Form 350s are annotated with the total operating time for all engines, modules, or components being turned in serviceable to supply.
- 4.11.3.6.2.11.3. **(Added-1FW)** Ensure that all engine maintenance actions are input into IMIS as soon as possible, but NLT the end of the duty day. Prior to an engine going to test cell, all components/modules will be installed in IMIS.
- 4.11.3.6.2.11.4. **(Added-1FW)** Ensure there are no event numbers against the engine/modules prior to work packages being returned to EM and engine being placed into spare status.
- 4.11.3.6.2.13.1. **(Added-1FW)** Blade blends/FOD damage inputs are included in IMIS and are input in IMIS via Significant History. Inputs remain with each module throughout the life span of the components.

CHAPTER 5 MAINTENANCE OPERATIONS (MXO).

5.2. Maintenance Operation.

- 5.2.5. Maintenance Operations Center (MOC)
 - 5.2.5.1.14.2. **(Added-1FW)** Inform the appropriate FS/FGS Maintenance Debriefing Section of all flying schedule deviations as they occur, including aborts, by type and cause.
 - 5.2.5.1.14.3. **(Added-1FW)** Coordinate with Debriefing Sections prior to applying appropriate sortie sequence numbers for all added sorties and all cross-country sorties launched from other than home station.
- 5.2.8. Maintenance Management Analysis (MMA).
 - 5.2.8.1.12.1. **(Added-1FW)** IMIS administrators will backup data and ensure PMA drive used with aircraft is held with restriction IAW IMIS 10.5 Aircraft Data Mishap Backup Process.
 - 5.2.8.1.12.2. **(Added-1FW)** DBM will notify all required agencies that MIS is frozen on subject aircraft until further notice.
 - 5.2.8.3.4.3. **(Added-1FW)** MMA will develop, approve, and publish guidance on IMIS to IMDS interface error correction.
 - 5.2.8.3.4.4. **(Added-1FW)** MO PS&D will develop, approve, and publish guidance on IMIS to IMDS configuration management corrections and procedures.

Chapter 6 QUALITY ASSURANCE (QA).

6.2. Responsibilities.

- 6.2.11. **(Added-1FW)** QA will perform an annual inspection of F-22 DEMO Team's CTK within the fourth quarter of each calendar year. The F-22 DEMO Team will be added to the Routine Inspection List to track this inspection.

6.7. Maintenance Standardization and Evaluation Program (MSEP).

6.7.4.3. Findings.

6.7.4.3.1.1. **(Added-1FW)** Major corrosion on a tool/item that could affect the use/serviceability of the tool/item. Example of major corrosion is pitting.

6.7.4.4.3. **(Added-1FW)** Hard FO (screws, washers, safety wire, dust caps, wood, plastic, etc.) found in or on equipment/composite tool kits, or located within inlet ingestion areas will be rated as major discrepancies.

6.7.4.4.4. **(Added-1FW)** Minor corrosion on a tool/item that does not affect the serviceability/use of the tool/item. Example of minor corrosion is surface rust.

6.7.6. Evaluations

6.7.6.1.6.1. **(Added-1FW) Section Supervisor Responsibilities:**

6.7.6.1.6.1.1. **(Added-1FW)** Identify technicians that require a PE by having UTM load PE requirements in IMDS. QA will update IMDS course code dates once a PE has been completed.

6.7.6.1.6.1.2. **(Added-1FW)** Establish timelines for initial PE requirements when new individual arrives on station for AGR, Technician and DSG members.

6.11. One-Time Inspection (OTI) Program.

6.11.1. **(Added-1FW)** QA will validate all local OTI requests, prepare the draft and perform verification on OTIs to verify accuracy and procedures. QA Product Improvement will prepare and distribute sufficient copies for all affected agencies and will maintain all OTIs in a master file.

6.12. Functional Check Flights (FCFs) to include Operation Check Flights (OCFs).

6.12.2 The QA FCF Program Manager will:

6.12.2.7. **(Added-1FW)** Provide and verify completion of FCF training and checkout IAW [Functional Check Flight Pilot Checkout Checklist](#) (located on QA SharePoint). Once checkout is completed, submit a certification letter to the applicable group commander. Once approved, the pilot can perform FCF duties. The FCF Program Manager will maintain certification letters in QA.

6.12.2.8. **(Added-1FW)** Maintain a Pilot Information File in QA with current items of interest and articles of information related to FCFs.

6.12.2.9. **(Added-1FW)** Ensure all FCF checkouts are performed under the supervision of the FCF Program Manager or designated representative.

6.12.3.1.1. **(Added-1FW)** If multiple sorties are required on the same aircraft, same day, same aircrew, for the same reason requiring the FCF, only the initial briefing will be accomplished.

6.12.7. **(Added-1FW)** The Operations Group Commander will:

6.12.7.1. **(Added-1FW)** Ensure Fighter Squadron Commanders nominate experienced pilots for FCF qualification. The 1 FW in conjunction with 192d WG will maintain the minimum of 2 qualified FCF pilots. Squadrons should initiate checkout of new FCF pilots far enough in advance to maintain the minimum number of qualified FCF pilots.

6.12.8. **(Added-1FW)** If an FCF is required, the following procedures apply:

6.12.8.1. **(Added-1FW)** FS/FGS Supervision will notify the QA FCF Manager and FS Operations Officer as soon as it becomes evident an FCF is pending. TA/Host Unit will coordinate with home station though 1 MXG/QA for transient aircraft.

6.12.8.2. **(Added-1FW)** Preflight. QA will ensure the FCF pilot is fully briefed on the pending FCF. This will normally be done via a face-to-face briefing at the fighter squadron.

6.12.8.3. **(Added-1FW)** FS/FGS supervision will perform an aircraft forms review, ensuring all items on the [1FW FCF/OCF Pre-Mission Checklist](#) (located on the QA SharePoint) are completed, and then report to QA for a forms review.

6.14. High Speed Taxi Checks.

6.14.1.3. **(Added-1FW)** High Speed Taxi Checks. Schedule and prepare aircraft that require high- speed taxi checks IAW [1FW High Speed Taxi Checklist](#) (located on QA SharePoint).

6.15. Weight and Balance (W&B) Program.

6.15.5. (Added-1FW) Local Program Guidelines:

6.15.5.1. (Added-1FW) The following section establishes weighing procedures and specific center of gravity (CG) limits for line replaceable units (LRU) removals.

6.15.5.1.1. (Added-1FW) The aircraft will not be flown with Chart A equipment weighing over 5 pounds removed from or installed on aircraft without the QA W&B section being notified and aircraft weight and balance recalculated.

6.15.5.2. (Added-1FW) Quality Assurance (QA) will:

6.15.5.2.1. (Added-1FW) Verify all weight and balance CG computations entered by Depot for all returning aircraft upon acceptance.

6.15.5.2.2. (Added-1FW) Compute CG and provide automated Form F for required flight, if flight is necessary with LRUs, gun, or ammo drum removed.

6.15.5.2.3. (Added-1FW) Clear applicable IMIS entries for TCTOs affecting CG, 24-month weighs, aircraft inventories, and engine changes.

6.15.5.2.4. (Added-1FW) Monitor CANN aircraft and extensive maintenance aircraft for ground handling limits/tipping considerations.

6.15.5.3. (Added-1FW) FGSs/Squadrons will:

6.15.5.3.1. (Added-1FW) Notify QA when TCTOs are completed that may affect aircraft weight and balance. Make a separate red X entry in IMIS to read “weight and balance calculation due by QA for TCTO # ____.”

6.15.5.3.2. (Added-1FW) Prepare aircraft for weighing on date scheduled IAW 1F-22A-5-2 and [1FW Weight and Balance Preparation Checklist](#) (located on the QA SharePoint).

6.15.5.3.3. (Added-1FW) Ensure Production personnel/CANN Managers are aware of the aircraft tipping concerns as it applies to component removal and their effect on the aircraft CG. When CG is in question, they will contact QA W&B personnel for ground handling worksheet completion.

6.15.5.3.4. (Added-1FW) When flight is required with an LRU, gun, or ammo drum removed, maintenance units will ensure the pilot is briefed specifically on equipment removed and the CG status of the aircraft.

6.15.5.3.5. (Added-1FW) Aircraft will be weighed in the following certified hangars: 170, 180, 190, 200 A, B, C & D east side, and 220 C & D east and west. Hangar 220 spots A & B east & west will only be used as a last resort at the discretion of the weight and balance technician.

6.15.5.3.6. (Added-1FW) Squadrons will allot a minimum of 24 hours for Weight and Balance personnel to perform aircraft Chart A and weighing procedures. Wet aircraft may require an additional 12 hours drying time.

Chapter 7 IMPOUNDMENT PROCEDURES.

7.4. Impoundment Official Responsibilities.

7.4.2.1. (Added-1FW) The Impoundment Official will comply with the requirements of the [1FW Form 56. Impoundment Official Documentation Checklist](#) and [1FW Form 62. Impoundment Official Actions Checklist](#) (both located on the QA SharePoint) and ensure that the completed impoundment checklists are returned to QA after the impoundment is cleared.

7.4.4. (Added-1FW) Will attend Impound Official Course taught by QA and tracked in IMDS.

7.4.5. (Added-1FW) The Impoundment Official will coordinate with QA to impound the aircraft/equipment prior to being released for maintenance. QA will ensure that the impoundment event is created in the MIS, annotate the reason for the impoundment, impoundment official, and notify MOC. QA will provide the Impound Official with all applicable checklists.

Chapter 8 TOOL AND EQUIPMENT MANAGEMENT.

8.2. Guidelines for Program Management.

8.2.3.2. **(Added-1FW)** The Flight Commander/Chief ensures strict control of warranty tools and designates program managers (primary and alternate) in writing. Program manager ensures broken, or damaged warranty tools are isolated and under strict control until properly replaced. He/she also isolates warranty tools from other replacement tools.

8.2.5.1.1. **(Added-1FW)** The on-duty Production Superintendent will authorize all transfer of tools/CTKs at the job site (on-site transfers). Keep transfers to a minimum. However, when transfers do occur, the person giving up the CTK and the one assuming control of it will perform an inventory of the CTK. A Section Chief, cell chief, or a representative from the Support Section must also inventory the CTK. Use an AF IMT 1297, *Temporary Issue Receipt*, to issue the CTK to the next person. The person giving up control of the CTK will ensure the hand receipt, from the person he or she turned it over to, is delivered to the Support Section. Support Section personnel will make the appropriate changes in TC-Max.

8.2.8.1. **(Added-1FW)** Individual issued PPE must be maintained by strict control measures and accountability of equipment. Lost tool procedures will be followed if individual issued PPE is lost.

8.2.9.4. **(Added-1FW)** Rags will be accounted for on each shift using [1FW Form 51, Weekly Rag Control Form](#) (located on the QA SharePoint).

8.2.9.5. **(Added-1FW)** Containers of five rags may be kept for issue and number of rags will be marked on the container. Rags will be counted each time the container is issued or turned in. Rags kept in CTKs will be in a container marked for that CTK and will also show the number of rags in the container. The rag container will be added to the CTK contents listing to show one container with five rags. Any time rags are changed it will be on a one for one swap.

8.2.12.1. **(Added-1FW)** Depot teams, factory representatives, and CFTs will adhere to contractual agreement in regards to tool control. Detailed procedures will be agreed upon during in-brief to include positive tool control and hazardous waste compliance.

8.3. General Program Guidelines.

8.3.5.2. **(Added-1FW)** To facilitate accurate inventories, deleted tools will have shadows painted over or inlays filled in.

8.3.6.5.2. **(Added-1FW)** Consumables that are placed in CTKs will be marked with the CTK EID and replaced on an as needed basis. Only support section personnel are allowed to replace consumables and only when the empty container or roll is returned.

8.3.3.6.6.2. **(Added-1FW)** Similar items that are part of a tool set will be annotated on the MIL with an identifying description (such as the quantity for each size Apex bit).

8.3.10.2. **(Added-1FW)** C-clips from communication headsets will be removed.

8.5. Tool Accountability.

8.5.1.2.1.2. **(Added-1FW)** Dispatchable CTK/support equipment will not remain checked out for more than 12 continuous hours unless approved by the Pro Super or higher on a case-by-case basis.

8.5.1.2.2.1. **(Added-1FW)** Issuing tool rooms will maintain a current IMDS listing of all MXG personnel certified to use a flexible borescope.

8.5.1.2.7. **(Added-1FW)** Track tools/equipment contained in crash recovery trailers/vehicles.

8.5.2.1.1. **(Added-1FW)** During single-person shift operation, an on-duty supervisor (i.e. Production Super, Section Chief) will sign an end-of-shift inventory (i.e. TCMax inventory black and white).

8.5.4.4. **(Added-1FW)** All dispatchable CTKs will have, as a minimum, a 90-day inspection. All non-dispatchable CTKs will have, as a minimum, a 180-day inspection. The 90 or 180-day inspections will be documented in TCMax.

8.5.4.6. **(Added-1FW)** Mobility CTKs will have an inspection performed prior to placement in storage. The 90/180-day inspection clock starts after first use. Mobility CTKs should only be used for actual or simulated deployments.

8.6. Tool and Equipment Marking and Identification.

8.6.1.1.1. (Added-1FW) [Attachment 20](#) provides unique EIDs for each assigned Support Section.

8.6.1.4.6. (Added-1FW) All tools assigned to a shadow board will have the same number as the shadow board along with a position number. Mini kits assigned to a shadow board CTK will have the same CTK number as the shadow board CTK along with a letter (A, B, C, etc.).

8.6.2.4. (Added-1FW) Spill Recovery Units, EPA Trailers, and Hazardous Waste Accumulation points that contain safety equipment/Personnel Protective Equipment will be marked with the squadron and accumulation site or trailer number. An equipment content listing will be kept with Spill Kits. 30-day inspections/inventories will be completed and documented on an AF IMT 2411, *Inspection Document*. If tamper-evident seal is intact, inventory of contents is not required.

8.7. Locally Manufactured, Developed, or Modified Tools and Equipment.

8.7.2.1. (Added-1FW) Workcenters will maintain a file of approved local manufacture authorization letters and identify tools and equipment on the Master Inventory List.

8.8. Tool Room Operations and Security.

8.8.1.1.1. (Added-1FW) The section with overall responsibility for a decentralized support section will be determined by squadron supervision.

8.8.2.2.2.4. (Added-1FW) Dispatchable tools/equipment (to include unit issued reflective belt, hearing protection, etc.) are considered secured when stored inside of a locked vehicle. All CTKs stored in a vehicle must be secured when the vehicle is unlocked and unattended.

8.9. Lost Item/Tool Procedures.

8.9.2.3.2.1. (Added-1FW) Start the [1FW Form 145, Lost Tool Item Report](#) (Located on the QA SharePoint) and contact QA to receive a local control number. Place control number at the top of the 145. Note: Once initiated, the 1 FW Form 145 must be completed even if the item is found.

8.9.2.5.2. (Added-1FW) Item 8 on the 1FW Form 145 must be signed by a SNCO or officer.

8.9.2.6.2.1. (Added-1FW) Item 8 on the 1FW Form 145 must be signed by the Squadron Superintendent/equivalent or higher.

8.9.2.6.2.1.1. (Added-1FW) Email completed digital 1FW Form 145s to 1 MXG/QA Inspection Org Box to be filed. (1mxgqa.inspection@us.af.mil)

Chapter 9 MATERIAL MANAGEMENT SUPPORT.

9.17. Local Manufacture.

9.17.2.4.2. (Added-1FW) Every attempt should be made to order a procurable/stocked part (located on the IPB, SMR coded P****, or *A****). If the part is procurable and there is no projected availability in the near future, as determined by MXS/MXM, the part may be locally manufactured with his/her authorization. In this case, the requester must have the MXS/MXM sign [1FW Form 60, Procurable Asset Manufacturing Release Form](#) (located on the QA SharePoint), and route this along with the requested items into the fabricating section. If MXS/MXM is not available, then a phone confirmation from the MXS/MXM with date and time listed on [1FW Form 60](#) will be adequate to start production until the signature can be obtained.

9.17.2.4.3. (Added-1FW) For local manufacture requests that are SMR coded as local manufacture, [1FW Form 63, Request for Local Manufacture](#) (located on the QA SharePoint), must be filled out and taken to MXS/MXMF.

9.17.2.5.1. (Added-1FW) The AFTO Form 350 must be physically attached to the sample. It must be completely filled out to include the Job Control Number (JCN), aircraft tail number, part number, WCE, How Mal code, point of contact information and telephone number, MICAP priority (if the item is procurable).

9.17.2.6. (Added-1FW) The following items are also required: An IMDS Screen 122 print out, a copy of

the Integrated Parts Breakout (IPB), and a sample, if possible, and drawing/schematic of the part to be manufactured.

Chapter 11 ADDITIONAL MAINTENANCE REQUIREMENTS AND PROGRAMS.

11.3. Special Certification Roster (SCR).

11.3.3.3. **(Added-1FW)** Personnel in the 5 skill level identified by the unit to clear Red X conditions are covered by the IMDS SCR course code 004332.

11.3.3.3.1. **(Added-1FW)** Certified personnel in AFSC 2A357 may clear Red Xs for refuel, routine engine oil servicing, routine APU oil servicing, SES servicing, hydraulic servicing, tire servicing, routine AMAD oil servicing, engine gearbox chip collector removal/installation, and intake/exhaust inspection tasks.

11.3.3.3.2. **(Added-1FW)** Certified personnel in AFSC 2A355 may clear Red Xs for intake/exhaust inspection tasks only.

11.6. Red Ball Maintenance.

11.6.2.1. **(Added-1FW)** All red ball maintenance and follow-on maintenance actions will be accomplished using approved procedures and documented in the corresponding IMIS electronic aircraft forms IAW paragraph 11.6 and TO 00-20-1. Exception: For red ball actions on aircraft leaving home station see paragraph 11.6.5.2 below for documentation procedures.

11.6.5.2. **(Added-1FW)** For times without electronic aircraft forms/deployment/TDY launch out sorties, all red ball maintenance will be documented on AFTO Form 781Hs and 781As in accordance with TO 00-20-1. Upon arrival to the deployed or TDY location, the Production Superintendent/Lead Maintenance member will ensure the electronic aircraft forms are annotated with maintenance actions accomplished during the deployment launch red ball maintenance. Once information is transcribed, file the red ball 781 series forms in the aircraft jacket file.

11.8. Foreign Object Damage (FOD) Prevention Program.

11.8.3.6.6. **(Added-1FW)** Cold weather hats worn within 25 feet of operating aircraft engines must be secured either under the chin or by ear defenders/ground communication headset. Ensure hats do not interfere with hearing protection.

11.8.3.7.2. **(Added-1FW)** Flight line FOD cans positioned at the FOD control entry control points will be emptied once per month and when they become full.

11.8.3.9.4. **(Added-1FW)** On Equipment/Off Equipment Maintenance Practices.

11.8.3.9.4.1. **(Added-1FW)** All uninstalled panels/components will have an AFTO Form 350 attached. All open lines/electrical connectors will have protective covers installed. Store all screws/fasteners in screw bag and attach directly to component.

11.8.3.9.4.2. **(Added-1FW)** Aircraft should not have the screw bag attached to a LO covered panel. Place screw bag with AFTO Form 350, identifying removed panel number, in TNB/FOM. Doors and panels that cannot be physically removed from the aircraft will have the screw bags attached to the structure in a manner that minimizes potential LO damage. The screw bag will be annotated with the serial number of the aircraft, equipment, panel, or component and total number of screws enclosed.

11.8.3.9.4.3. **(Added-1FW)** Aircraft panels may be stored in the hangar. All panels will be logged in and out on the FOM bins tracking sheet. All panels will have completed AFTO Form 350s attached denoting aircraft tail number, panel number and the individuals printed name and employee number who removed the panel.

11.8.9.4. **(Added-1FW)** Structural and Intake Maintenance Practices:

11.8.3.9.4.1. **(Added-1FW)** After accomplishment of any intake maintenance, an intake/exhaust certified technician will perform an intake FO inspection prior to next engine start. Document inspection in the aircraft forms IAW TO 00-20-1.

11.8.3.9.4.2. **(Added-1FW)** The [1FW Intake Maintenance Checklist](#) is located on the QA SharePoint

11.8.3.10.2. **(Added-1FW)** FOD Walk. The FOD Prevention Officer/NCO of each organization ensures

that personnel actively participate in daily FOD walks to effectively reduce/eliminate potential FOD hazards throughout the flight line. Daily FOD walks will be accomplished prior to the first sortie of each day. Crew Chiefs will police areas around and under their aircraft immediately prior to aircrew arrival and aircraft recovery operations and maintain a general awareness of the FOD potential around their aircraft at all times. This “general awareness” applies to all maintainers at all times. A SNCO or higher will be appointed as FOD walk Supervisor and is responsible for the entirety of the FOD walk. Collection bags/bins will be available during FOD walks to contain all foreign objects. Flashlights will be utilized during the hours of darkness. All findings other than organic foreign objects (sticks, rocks, etc.) will be provided to the QA office/Wing FOD Monitor weekly.

11.8.3.10.3. **(Added-1FW)** A daily FOD walk will be conducted and is assigned as follows:

11.8.3.10.3.1.1. **(Added-1FW)** 94th FS/FGS will inspect their parking ramp.

11.8.3.10.3.1.2. **(Added-1FW)** 27th FS/FGS will inspect their parking ramp.

11.8.3.10.3.1.3. **(Added-1FW)** 71st FS/FGS will inspect their parking ramp.

11.8.3.10.3.1.4. **(Added-1FW)** T-38 contract maintenance will inspect their parking ramp.

11.8.3.10.3.1.5. **(Added-1FW)** Owning units will clean debris from areas outside/between hangars. Call a sweeper for assistance if necessary.

11.8.3.10.4. **(Added-1FW)** A weekly FOD walk will be conducted on the first flying day of the week and areas are assigned as follows:

11.8.3.10.4.1. **(Added-1FW)** Corrosion Control and Fuel Shop will inspect rows Mike to Juliet.

11.8.3.10.4.2. **(Added-1FW)** MXS will inspect 26 EOR East toward the restricted area line.

11.8.3.10.5. **(Added-1FW)** Hot Pit crews will inspect each pit area for FO at the beginning of each shift.

The EOR crew inspects arm/de-arm areas for FO prior to use and each shift change.

11.8.3.10.6. **(Added-1FW)** FOD Bosses will be employed daily during flying operations. Do not use FOD Bosses during periods of heavy rain or drag through water puddles, as contents can be ejected from the sides of the units. Periodic visual inspections will be conducted by FS/FGS Production personnel to verify they are being used.

11.8.3.14.3. **(Added-1FW)** All units will clearly mark aircraft ground cords and -21 equipment (i.e. markings on streamers, dog tags etc.) with the aircraft tail number (i.e. 09-4177). -21 equipment will not be double marked with tail numbers and/or EIDs. Monthly Inspection Inventories shall account for all items (i.e. 1x dog tag w/key ring & Streamer).

11.8.3.22. **(Added-1FW)** Only self-contained (lidded), non-glass bottles and camelbacks are authorized for use on the flightline. They must be secured at all times and may not be used when near hazardous materials.

11.8.5.3.1. **(Added-1FW)** In the absence of the Wing FOD NCO, the applicable group commander may appoint a qualified investigating officer/NCO for FOD incidents.

11.8.5.4.3. **(Added-1FW)** TDY Locations. When aircraft and maintenance personnel are deployed, QA represents the Wing FOD NCO. For deployments where there are no QA personnel required, the deploying FS/FGS appoints an individual to act as the FOD NCO. In either case, individuals report to the Wing FOD NCO for a FOD briefing/training prior to deploying.

11.8.5.6. **(Added-1FW)** The Wing FOD NCO and QA inspectors will monitor the operational aspects of the tool control program.

11.8.5.7. **(Added-1FW)** Work center supervisors will ensure FOD information is briefed monthly or more frequently if required. The unit FOD Prevention NCO may assist/support this effort.

11.8.5.8. **(Added-1FW)** Each squadron will appoint a qualified NCO or SNCO, with experience in the maintenance field to the position of FOD Prevention Program Monitor and their name will be posted within the unit or flight on a locally developed visual aid or FOD board. The FOD awareness board will be posted where clearly visible. The board should include FOD posters, the latest copy of the FOD meeting minutes, FOD incidents, Wing FOD goals and FOD rates.

11.8.5.8.1. **(Added-1FW)** Squadron FOD Monitors will be familiar with directives concerning the FOD Prevention Program, participate in the wing committee meetings, advise new personnel of potential FOD problems and initiate them to the degree of FOD awareness required of all personnel and develop and monitor FOD incentive program to promote FOD awareness within the squadron.

11.8.5.8.2. **(Added-1FW)** Squadron FOD Monitors will develop and maintain a continuity folder with checklists and pertinent data geared to the unit's environment. This folder will contain as a minimum; current letters of appointment for the squadrons' FOD Officer/NCO and flight level FOD monitors (if required), appropriate checklists, documentation of weekly in-house/FOD housekeeping inspections on [1FW Form 53, Weekly FOD Inspection Sheet](#) (located on the QA SharePoint), documentation of area/shop FOD briefings, FOD self-inspection checklist and FOD flashes/minutes after being displayed.

11.8.5.8.3. **(Added-1FW)** Squadron FOD Monitors will check parking ramps, taxiway and engine run-up areas and other maintenance and storage areas for cleanliness and condition of pavement in their area of responsibility. They will brief Wing FOD NCO on any FOD related problem that cannot be resolved at squadron level.

11.8.5.8.4. **(Added-1FW)** If appointed, Unit and Flight level FOD Monitors will:

11.8.5.8.4.1. **(Added-1FW)** Be familiar with directives concerning the FOD Prevention Program.

11.8.5.8.4.2. **(Added-1FW)** Advise personnel of potential FOD hazards.

11.8.5.8.4.3. **(Added-1FW)** Inspect and report damaged pavement, or other hazards in or near aircraft parking ramps or taxiways to the Squadron FOD Monitor.

11.8.5.8.4.4. **(Added-1FW)** Ensure FOD incentive programs promote FOD awareness within the Unit or Flight.

11.9 Dropped Object Prevention (DOP) Program.

11.9.2.3. **(Added-1FW)** Wing Dropped Object Monitor will recommend impounding the affected aircraft (if necessary) to the Maintenance Unit or Transient Alert Monitor, and ensure dropped objects are properly investigated and recorded.

11.9.3.1.2. **(Added-1FW)** Ensure all dropped objects are properly reported to the Wing DOP Monitor and log all reported dropped objects in unit monitors logbook. Initiate Deficiency Report as required. Aid the Wing DOP Monitor in the collection of data of dropped objects.

11.9.3.1.3. **(Added-1FW)** Ensure the dropped object training program is accomplished in accordance with AFI 21-101 and establish a dropped object awareness program. Brief all personnel who required panel installation and removal qualification training on the importance of the DOP.

11.10. Aircraft Structural Integrity Program (ASIP).

11.10.4. **(Added-1FW)** Currently there are no ASIP inspections required on the F-22.

11.10.5. **(Added-1FW)** Workcenter specific responsibilities and procedures:

11.10.5.1. **(Added-1FW)** Specialist Section will repair Structural Integrity Monitor (SIM) Strain Gauges when required.

11.10.5.2. **(Added-1FW)** Aircraft section will download flight data from the Crash Survival Memory Unit (CSMU) after aircraft recovery using the PMA and ensure the PMA is docked to the IMIS server.

11.10.5.3. **(Added-1FW)** Debrief Section will report any failed Data Transfer Cartridge downloads that occur during sortie debrief to the Wing Avionics Manager (WAM).

11.11. Identification Friend or Foe (IFF) Program.

11.11.1.1.1. **(Added-1FW)** Avionics section is responsible for documenting IFF Mode IV checks in IMIS. Aircrew confirmation of valid Mode IV interrogation/replies satisfies recurring checks.

11.13. Cannibalization Program.

11.13.9. **(Added-1FW)** Cannibalization Program Procedures and Requirements:

11.13.9.1. **(Added-1FW)** The CANN Authority will:

11.13.9.1.1. **(Added-1FW)** Coordinate with FS/FGS/MXS Production Superintendents to identify a valid cannibalization source.

11.13.9.1.2. **(Added-1FW)** Ensure sufficient time remains on time change items to justify cannibalization.

11.13.9.1.3. **(Added-1FW)** Approve cannibalizations via IMIS/IMDS (as applicable) and ensure

appropriate Action Taken Codes (“T” and “U”) are documented IAW TO 00-20-2.

11.13.9.1.4. **(Added-1FW)** Notify PS&D or EM if the CANN will affect TCTO compliance status, hourly/calendar inspections or time change.

11.13.9.2. **(Added-1FW)** Cannibalization to fill MRSP/Mission Support Kits (MSK) TDY Kits:

11.13.9.2.1. **(Added-1FW)** MRSP is responsible for:

11.13.9.2.1.1. **(Added-1FW)** Providing FSC with shortfall and MSK list 2 weeks prior to kit buildup for planned deployments and within 24 hours of notification for contingency deployments.

11.13.9.2.1.2. **(Added-1FW)** Coordinating shortfall list with SCOG to check for lateral support/depot availability and have items shipped.

11.13.9.3. **(Added-1FW)** FS/FGS is responsible for reviewing shortfall/MSK lists and directing appropriate CANN actions.

11.14. Hangar Queen Aircraft.

11.14.1.1. **(Added-1FW)** Unit Supervision will identify the tail number as a potential Hangar Queen. The following information will be briefed at the daily production meeting: Current status, number of MICAPS, any discrepancies preventing repair, and expected date for flight.

11.14.5. **(Added-1FW)** Owing unit will ensure aircraft forms are reviewed daily and notify supervision of any problems/issues preventing repair.

11.14.5.1. **(Added-1FW)** A qualified 7-level will perform a review of all pertinent maintenance actions prior to the first engine run.

11.14.5.2. **(Added-1FW)** All aircraft identified as Category 2 hangar queens and longer will have QA perform a final review of all forms initiated since the last flight prior to the first flight.

11.15. Ground Instructional Trainer Aircraft (GITA).

11.15.4.2.10.2. **(Added-1FW)** GITA management will be IAW [MOI 21-1001](#).

11.15.4.2.12.5.3. **(Added-1FW)** FOD prevention: FTD/MTS will ensure FOD prevention practices are performed on and around the aircraft. Emphasis will be placed on the use of intake covers, accountability of removed hardware, and general housekeeping.

11.17. Engine Run Training and Certification Program.

11.17.9.1. **(Added-1FW)** Personnel certified to operate installed engines will complete a test on emergency procedures every 6 months requiring a 100 percent score.

11.17.9.2. **(Added-1FW)** Certification status is verified and engine run clearance is authorized by the MOC prior to engine start. Annual re-certification requirements and 6-month emergency procedures test are valid through the end of the month due. Personnel requiring the 6-month test while deployed will have 30 days after returning to home station to comply with testing requirements. Personnel overdue 6 month testing and returning within 90 days of their annual re- certification will comply with annual requirements.

11.17.9.3. **(Added-1FW)** MOC will check IMDS to verify proficiency status of operator before providing run-up clearance, then credit individual for run and provide Central Security Control with the aircraft tail number, location, and reason for operation prior to engine run.

11.17.9.3.1. **(Added-1FW)** Before engine start, Expediters will provide MOC with the following:

11.17.9.3.1.1. **(Added-1FW)** Aircraft tail number

11.17.9.3.1.2. **(Added-1FW)** Location of aircraft

11.17.9.3.1.3. **(Added-1FW)** Name and employee number of operator

11.17.9.3.1.4. **(Added-1FW)** Fire fighting vehicle, if required

11.17.9.3.1.5. **(Added-1FW)** After engine shut down, Expediters will inform MOC of aircraft status.

11.17.9.4. **(Added-1FW)** Engine Run Certified Maintenance Personnel will:

11.17.9.4.1. **(Added-1FW)** Follow guidance in [LAFBI 11-250](#) for engine run areas/procedures.

11.17.9.4.2. **(Added-1FW)** Maintain contact with Langley Ground Control throughout the engine run.

Engines will not be operated without AUX COMM operative. Contact with ground control is not required for Hush House runs.

11.17.9.4.3. **(Added-1FW)** Ensure aircraft are taken to the Hush House or are equipped with an open field hold back when engine operation above 80 percent RPM or when you have a known Auto Acceleration problem.

11.19. Engine Flexible Borescope Inspection Training and Certification Program.

11.19.3. **(Added-1FW)** The location and extent of blade damage will be annotated in the Significant History tab in the Engine Work Package (installed or uninstalled engine) for reference in IMIS. This will automatically generate an AHE suspense transaction for EM to update IMDS and CEMS 95 history.

11.25. Hot Refueling Procedures.

11.25.5.1. **(Added-1FW)** Each FS/FGS will possess a minimum of four qualified hot pit refueling crews, and four hot pad supervisors.

11.25.8.4.1. **(Added-1FW)** MTS will establish a projected 90-day initial hot refueling course schedule in coordination with FS/FGS. MTS will provide slots to the FS/FGS and POL training managers to satisfy projected initial requirements. QA will complete the annual review of the hot refueling plan of instruction, course training standard, and audio/visual aids in coordination with MTS.

11.25.8.5.1. **(Added-1FW)** Each FS/FGS will provide at least one hot pit certifier augmentee.

11.28. Crash Damaged or Disabled Aircraft Recovery (CDDAR) Program.

11.28.2.4. **(Added-1FW)** Maintenance Flight is responsible for Crash Recovery operations. They fulfill requirements for Crash Recovery as defined in, LAFBI 11-250 Chapter 6, and the JBLE Joint Base Emergency Management Plan (JBEMP) 10-2.

11.28.2.4.1. **(Added-1FW)** The CDDAR section will provide a basic team for IFEs and GEs. The basic CDDAR team will have at least three personnel consisting of at least one qualified CDDAR team member, one CDDAR tow super qualified team supervisor, and a licensed tow vehicle operator. The owning unit may be tasked with providing an aircraft tow vehicle and a licensed vehicle operator as needed. All CDDAR team members will be familiar with local hot brake and aircraft barrier engagement procedures as outlined in local checklists. The CDDAR team will not perform any recovery operations until cleared by the Incident Commander (IC) or Recovery Operations Chief (ROC). The CDDAR team will tow all emergency aircraft clear of the active runway to allow the CDDAR team to regenerate. The owning unit will be responsible for completing the towing operation to the designated parking location.

11.28.2.4.2. **(Added-1FW)** The basic CDDAR team will dispatch immediately when an emergency occurs during normal operating periods or duty hours. A basic team will be on stand-by outside of normal operating hours and will be recalled by the Maintenance Operations Center (MOC) in the event of an aircraft emergency requiring CDDAR response. At the determination of a CDDAR Team Chief, additional CDDAR qualified members will be recalled as required.

11.28.2.6.2. **(Added-1FW)** The CDDAR response team will advise the on-scene commander, Fire Chief, Security Police, and Airfield Operations (as applicable) of any maintenance actions required during aircraft recovery or hot brake situations. The CDDAR Team Chief will also coordinate requirements through MXS Production Supervisor for any actions required by Safety, Civil Engineering, EOD, and Disaster Preparedness.

11.28.2.7. **(Added-1FW)** Initial CDDAR training is documented in IMDS and TBA. Annual recertification of crash training is also tracked in IMDS and TBA for qualified personnel.

11.28.2.7.1. **(Added-1FW)** Each FS/FGS will maintain a minimum of four 5/7 level crash recovery augmentees. These individuals will supplement crash recovery members during deployments, temporary-duty assignments and local operational exercises.

11.27.2.7.2. **(Added-1FW)** Once trained, the FS/FGS crash recovery augmentees will be required to maintain CDDAR member training proficiency as listed in TO 00-80C-1, *Crashed, Damaged, Disabled Aircraft Recovery Manual*.

11.33. End-of-Runway (EOR) Inspection.

11.33.4. **(Added-1FW)** End-of-Runway (EOR) Inspection: When an EOR inspection is required by the applicable group commander, the following requirements must be followed:

11.33.4.1. **(Added-1FW)** EOR will have two 150lb Halon fire extinguishers or equivalent at each EOR pad. Additionally, during night ops, at least two light carts will be used at each EOR pad.

11.33.4.2. **(Added-1FW)** All equipment will be removed from the EOR pad within three hours of aircraft departure.

11.33.4.3. **(Added-1FW)** Minimum EOR crew composition will consist of an inspection crew comprising of two members, one Team Chief/Marshaller and one aircraft inspector per squadron. The Team Chief/Marshaller will be identified by a reflective vest.

11.33.4.4. **(Added-1FW)** The Expediter will ensure all discrepancies discovered during EOR inspections are documented in IMIS.

11.38. Oil Analysis Program (OAP).

11.38.3.5.4. **(Added-1FW)** If unable to analyze the sample received, the OAP lab will place the engine on lab recommendation code "D". When this occurs, aircraft requiring OAP samples after every flight will be grounded and the unit OAP manager will take immediate action to correct the DD Form 2026 prior to next flight. For aircraft requiring sampling after the first flight of the day, unit OAP managers will take action to correct the DD Form 2026 prior to 2400 hours, the end of the unit's flying day. **NOTE:** During night flying operations, the end of the unit's flying day will be four hours after the last scheduled down time. If not corrected, the aircraft will be grounded until the D code is corrected.

11.38.6. **(Added-1FW)** When required, ensures the words "Red Cap" are clearly marked in red on the sample bag and in the remarks sections of the DD Form 2026 and delivered immediately after sampling. A red X will be entered in the aircraft forms, Maintenance Discrepancy and Work Document and will not be cleared until analysis results are obtained.

11.38.6.1 **(Added-1FW)** Oil carts will be sampled prior to the beginning of the published routine flying week. Oil samples will be delivered to the OAP lab no later than two hours prior to the first scheduled takeoff. Oil carts not sampled will be identified on the Wing Status Sheet as unserviceable and removed from service until the sample has been analyzed and results are known.

11.38.6.2. **(Added-1FW)** Ensures all newly assigned personnel, who will be taking oil samples, complete the OAP CBT prior to performing any OAP sampling.

11.38.6.3. **(Added-1FW)** A locally developed [1FW Form 52. Oil/Hydraulic/Oxygen/Nitrogen Cart Servicing Log](#), will be documented each time the cart is used or serviced. Additionally, the log will be turned in to the OAP lab along with the weekly sample and a new log will be placed with the oil cart.

11.38.6.4. **(Added-1FW)** Contaminated oil carts will be removed from service and documented with a Red X for contamination. Carts will then be drained and flushed. A new sample submitted to the NDI Laboratory prior to releasing the cart back to maintenance. Once all maintenance is completed on the cart it will be returned to service.

11.38.7. **(Added-1FW)** Ensures Test Cell complies with the following requirements:

11.38.7.1. **(Added-1FW)** The OAP historical records are shipped with the engine when it is permanently reassigned to another organization. A copy of the most current records will be sent with all deployed spares.

11.38.7.2. **(Added-1FW)** Take oil samples on all test cell runs. The test cell technician will hand carry each test cell sample to the OAP lab for priority analysis, and the results will be known prior to the next engine run.

11.38.7.3. **(Added-1FW)** Do not remove aircraft engines from the engine test cell until results of the oil sample is received, analyzed, and final results are known.

11.38.7.4. **(Added-1FW)** All final test cell samples will be placed on code "F" prior to issuing the engine to the flight line.

11.38.8. **(Added-1FW)** Contact the OAP lab for oil analysis records at least 2 hours prior to aircraft or spare engines deploying for cross country, TDY, or out and backs.

11.38.9. **(Added-1FW)** The FS/FGS will return all accumulated DD Form 2026 and any unprocessed cross-country samples to the OAP lab. The paperwork/samples will be returned along with the first sample taken after the aircraft has returned from cross-country or deployment. All OAP samples from aircraft returning from cross-country flights or deployments will be clearly identified as cross-country return on the sample bag and in the remarks section of the DD Form 2026. The OAP lab will place cross-country return samples on code D (unable to analyze sample as received) if all cross-country paperwork and samples are not returned to the OAP lab.

11.38.10. **(Added-1FW)** Under no circumstance will aircraft on code "E" be allowed to go cross-country without prior approval of the applicable group commander.

11.42. (Added-1FW) Cold Weather Hangar Door Policy.

11.42.1 **(Added-1FW)** All procedures must be followed when an extreme cold weather warning is issued. Procedures outlined have been developed to prevent the freezing of the fire suppression pipes which could cause inadvertent activation of systems. Prolonged exposures can cause freezing, rupture mechanical systems and cause activation of the fire suppression circuitry, resulting in damage to hangars, facilities and any aircraft as well as personnel safety risk.

11.42.1.1. **(Added-1FW)** At 40 degrees, MOC will run the QRC checklist for extreme temperatures and issue a cold weather advisory.

11.42.1.2. **(Added-1FW)** When cold weather advisory is issued by MOC, all hangar doors and canopies will be closed, unless work is being performed in the cockpit. Canopies will be closed as soon as the work is completed.

11.42.1.3. **(Added-1FW)** At 33 degrees, MOC will run the checklist for extreme temperatures and issue a cold weather warning.

11.42.1.4. **(Added-1FW)** When a cold weather warning is issued, ensure all hangar doors are closed and must remain closed a minimum of 15 minutes to let the hangar regain heat before the doors are opened again (e.g. pushing AGE into the hangar).

11.42.1.5. **(Added-1FW)** During cold weather warnings, the doors will only be opened for mission essential tasks. Any task which will take longer than 30 minutes to complete will be coordinated through the production superintendent.

11.42.1.6. **(Added-1FW)** If at any time the heat in the hangar fails, aircraft will be repositioned to a hangar with operational heating capability or a non-AFFF hangar.

11.42.1.7. **(Added-1FW)** Any issues with Hangar Door operations or loss of heat must be immediately reported by the respective Facility Manager to 633 CES Customer Service.

11.43 Corrosion Program.

11.43.1. **(Added-1FW)** Aircraft Maintenance (exclude 2A7X3) personnel are required to attend corrosion control training at initial mission orientation course and annually thereafter.

11.44. (Added-1FW) Aircraft Hangaring and Hangar Cleaning Procedures.

11.44.1. **(Added-1FW)** Use of the [1FW Hangar Entry/Exit Checklist](#) (located on the QA SharePoint) is mandatory.

11.44.2. **(Added-1FW)** Use of the [1FW Hangar Entry/Exit Checklist](#) is the direct responsibility of each tow team supervisor. Tow supervisors will ensure all items are completed. The checklist must be readily accessible to applicable aircraft. The checklist will be retained by Production Superintendent for at least two duty days after removal of the aircraft from the hangar.

11.44.3. **(Added-1FW)** Drip pans will be placed under aircraft. (Exception: Aircraft placed in the Wash Rack or Hush House do not require drip pans.)

11.44.4. **(Added-1FW)** Diesel-powered AGE equipment will not be operated inside hangars (i.e. hydraulic mules and PAO carts). Additionally, hydraulic mules will not be parked with any portion hanging over the drains in front of the hangars.

11.44.5. **(Added-1FW)** Hangar floors will be kept clean and free of debris at all times and trash will be emptied daily.

11.44.6. **(Added-1FW)** While aircraft are in the hangar, the access lanes will be kept clear at all times and the aircraft towing path will be kept clear of equipment (when not in use).

11.45.1. (Added-1FW) Hangar Door Operation.

11.45.1.1. **(Added-1FW)** Utilize the [1FW Powered Hangar Door Operation Checklist](#) and [1FW Non-powered Hangar Door Operation Checklist](#) (both located on the QA SharePoint).

11.45.1.2. **(Added-1FW)** Hangar Door awareness is received in Mission Orientation and annually in Mission Refresher training.

11.48. (Added-1FW) Ground Radar Transmissions.

11.48.1. **(Added-1FW)** All F-22 high power radar transmissions will take place on the NASA compound trim pad and will require FSR or AFETS support on hand.

11.48.2. **(Added-1FW)** Owning FS/FGS Flightline Expediter will notify the MOC of pending action.

11.48.3. **(Added-1FW)** MOC will:

11.48.3.1. **(Added-1FW)** Ensure AGE personnel are aware of radar operation hazards involved.

11.48.3.2. **(Added-1FW)** Notify all FS/FGSs, T-38s, MXS, Bioenvironmental Engineering, Security Forces, NASA, and base Fuels Center of the hazard and location.

11.48.3.3. **(Added-1FW)** All units will brief personnel dispatched during the transmission period of the potential hazard.

11.49. (Added-1FW) Bomb lift Controls and Procedures.

11.49.1. **(Added-1FW)** Bomb lifts will be signed out using an AF FORM 1297, Temporary Issue Receipt, from the AGE flight. Only bomb lifts with current service inspections will be issued out to operators. The AGE representative will check the bomb lift forms for status prior to issuing. An operator inspection will be conducted by the operator prior to starting and taking custodial responsibility of the bomb lift per TO 00-20-1, Aerospace Equipment Maintenance Inspection, Documentation, Policy, and Procedures.

11.49.2. **(Added-1FW)** Weapons Expeditors will ensure all bomb lifts are cycled to the AGE flight no later than Friday night of each week for functional checks and proper servicing. Bomb lift service inspections will be performed and documented in part II of the AFTO FORM 244 by AGE personnel only.

11.49.3. **(Added-1FW)** If a bomb lift experiences a malfunction or an anomaly during use, the operator will report the location of the bomb lift immediately to the respective AGE team. The operator will annotate the discrepancy on the AFTO Form 244.

11.49.4. **(Added-1FW)** If a bomb lift runs out of fuel, the user will refuel it. After refueling, the user will immediately contact the AGE driver for a service inspection by qualified AGE personnel IAW applicable technical data.

11.50. (Added) Aircraft Tire Wear Criteria.

11.50.1. **(Added-1FW)** Langley's runway is crowned and grooved. Therefore, Langley will remain under dry weather wear limited criteria for aircraft tires year-round.

11.51. (Added-1FW) Chemical/Flammable Storage Container Management.

11.51.1 **(Added-1FW)** All MXG units will conduct monthly inspections on assigned chemical/flammable storage containers IAW [1FW HAZMAT Checklist](#) (located on the QA SharePoint).

11.51.2. **(Added-1FW)** Current checklists will be posted on chemical/flammable container. All storage locations will be annotated on the checklist.

11.51.3. **(Added-1FW)** Equipment/Aircraft Servicing Documentation

11.51.3.1. **(Added-1FW)** [1FW Form 52](#) will accompany the AFTO Form 244 for hydraulic test stands, hydraulic, oil, polyalphaolefin (PAO), Stored Energy System Servicing (SESS) carts, Nitrogen carts, and PAO hand pumps.

11.51.3.2. **(Added-1FW)** Upon servicing completion the [1FW Form 52](#) will be documented by the operator.

11.51.3.3. **(Added-1FW)** AGE personnel will file the [1FW Form 52](#) with the AFTO Form 244 for the same item. The filed [1FW Form 52](#) will be retained for at least 60 days.

11.51.3.4. **(Added-1FW)** The FS/FGS support section will file the [1FW Form 52](#) with the AFTO Form 244 for the PAO hand pumps. The filed [1FW Form 52](#) will be retained for at least 60 days.

11.52. (Added-1FW) Specific Fall Protection Requirements.

11.52.1. **(Added-1FW)** Fall protection shall be provided and will be used whenever personnel can fall four (4) feet or more, IAW AFMAN 91-203, *Air Force Occupational Safety, Fire and Health Standards*.

11.52.2. **(Added-1FW)** Whenever personnel are on top of an aircraft (excluding visual inspections), maintenance stands or fall protection air bags (if available) will be used as passive fall protection. The stand(s) or air bags will be positioned as close to the work site as possible. (e.g. Personnel on left wing requires stand positioned adjacent to left wing).

11.52.3. **(Added-1FW)** If fall protection requirements are unable to be complied with due to operational requirements or equipment shortfalls an AF Form 4437, *Deliberate Risk Assessment Worksheet*, will be accomplished by the on-duty Production Superintendent IAW AFPAM 90-803, *Risk Management (RM) Guidelines and Tools*. The completed AF Form 4437 will be forwarded to 1 FW/SE within 3 duty days.

Chapter 14 MAINTENANCE PLANS, SCHEDULING AND DOCUMENTATION (PS&D).

14.1. Responsibilities:

14.1.5.2.1. **(Added-1FW)** F22s do not have PDMs. MO PS&D will maintain depot flow plan published by AFMC / LMCO.

14.1.7. **(Added-1FW)** Decentralized locations include Aircraft Section, Engine Management, Egress, Armament, NDI, Quality Assurance, AGE Shop and Fuels.

14.2.2.5. **(Added-1FW)** Aircraft Jacket File Standardized Procedures:

14.2.2.5.1. **(Added-1FW)** Standardized jacket file checklist:

14.2.2.5.1.1. **(Added-1FW)** PS&D will use the standardized checklist located on the MXO/MXOS Shared Drive to conduct jacket file reviews to ensure all requirements are met.

14.2.2.5.1.2. **(Added-1FW)** Units will utilize the "History LCN" list published with the 1F-22A-6 LMCO product for AFTO 95 like items and establish AHE in IMDS.

14.2.3.4.6. **(Added-1FW)** PS&D will provide the applicable FS/FGS with a cover sheet (which includes -21 equipment verification checklist, IMDS automated records check and out of configuration report screen 990 from IMDS).

14.2.4.1.1.1. **(Added-1FW)** PS&D will initiate an AF IMT 2410, *Inspection/TCTO Planning Checklist*, or locally developed, standardized [1MXG 2410](#) (located on the QA SharePoint) product for each aircraft prior to the pre-inspection meeting.

14.2.4.2.1.3. **(Added-1FW)** In addition, the following will attend the PMP pre-dock meeting: MXS Super, NDI, and EM Scheduler.

14.2.4.2.1.4. **(Added-1FW)** Pre-dock meetings will be held for all PMP inspections NLT the duty day prior to the scheduled inspection.

14.2.1.4. **(Added-1FW)** See [Attachment 21](#) for manual Job Control Number Assignment.

14.2.7.4. **(Added-1FW)** Ensure person picking up aircraft records signs hand receipt.

14.3. Configuration, TCTO, SI and TCI Management.

14.3.2.5.2. **(Added-1FW)** All maintenance personnel will use the "HW/SW CONFIGURATION" application tool in IMIS to monitor configuration problems.

14.3.2.5.3. **(Added-1FW)** All work orders/configuration corrections will be assigned to and completed by the appropriate work centers.

14.3.3.3.2.3.1.1. **(Added-1FW)** All TCTO folders will match master folder.

14.3.4.1.2. **(Added-1FW)** AGE will maintain the JML for AGE items.

14.3.4.3.5.3. **(Added-1FW)** The minimum attendees for the TCTO reconciliation/status meeting will be Flight Service Center, FS/FGS Production Supervisors, and PS&D. All other owning and managing agencies will attend as required.

14.3.4.3.3.3.6. **(Added-1FW)** All HAZMAT items required for TCTO or TCI will be ordered through the performing workcenter's supply. CAD/PAD items are ordered through Munitions Operations. Once the material is ordered, the supply section responsible for ordering will provide document numbers to PS&D for filing.

14.3.5.2.1. **(Added-1FW)** Requestor/Originator will:

14.3.5.2.1.1. **(Added-1FW)** Ensure all steps have been exhausted at the local level IAW TOD.

14.3.5.2.1.2. **(Added-1FW)** Generate the 107-request message IAW TO 00-25-107.

14.3.5.2.1.3. **(Added-1FW)** Document date and time of submission in 107/AR requests.

14.3.5.2.1.4. **(Added-1FW)** Forward 107 requests to squadron supervision for review. ARs will go directly to the PIM for review.

14.3.5.2.1.5. **(Added-1FW)** Squadron supervision will coordinate 107 requests with the QA Superintendent, Chief Inspector, and Product Improvement Manager to confirm that all local options have been exhausted.

14.3.5.2.1.6. **(Added-1FW)** Provide info copies to MO PS&D and MOC on all 107/AR message requests and responses.

14.3.5.2.1.7. **(Added-1FW)** Coordinate with MO PS&D upon depot team arrival to schedule meeting with repair team.

14.3.5.2.1.8. **(Added-1FW)** Once depot-level work is completed; contact PIM and forward the 107 work package to MO PS&D.

14.3.5.2.2. **(Added-1FW)** QA (PIM) will:

14.3.5.2.2.1. **(Added-1FW)** Review and forward 107 requests to MXG Supervision for approval.

14.3.5.2.2.2. **(Added-1FW)** After MXG Supervision approves, submit via Field Information Network (FIN) IAW TO 00-25-107.

14.2.5.2.2.3. **(Added-1FW)** Provide info copies to MO PS&D and MOC on all 107 message requests and responses.

14.2.5.2.2.4. **(Added-1FW)** Inform originator of MXG Supervision 107 approval or disapproval.

14.3.5.3.1.1. **(Added-1FW)** MOC will update appropriate aircraft status. PS&D will update possession changes.

14.3.5.3.3.2. **(Added-1FW)** Prepare AF IMT 2410 [1MXG 2410](#) and schedule meeting with depot repair team and requesting activity prior to team departure.

14.3.8. **(Added-1FW)** Shared Resources Planning document is weekly to refine the Wing Quarterly Maintenance Plan. As a minimum, representatives from PS&D, each FS/FGS Production Super, MXS Production Super, MTS, WS, Egress, Armament, Munitions Operations, AFE and EM must attend. FTD attendance is mandatory when a training aircraft is required. Each section representative must come prepared with a maintenance plan for their respective work center and provide any additional pertinent data so that a viable Wing plan may be coordinated, developed and any conflicts resolved.

14.3.8.1. **(Added-1FW)** 3-month schedule will be made available to provide long-range guidance to maintenance managers. Factors such as Contract Field Team work, deployments, exercises, depot maintenance, special maintenance priorities, and training requirements will also be taken into consideration when building the plan. The offices contributing to the maintenance plan will notify PS&D immediately of any adverse factors that will have a negative effect on the quarterly maintenance plan.

14.4. Engine Management (EM).

14.4.1.2.23.2. **(Added-1FW)** Provide FS/FGSs and JEIM a copy of the TCTO grounding slide weekly. Slide will show all TCTO items that are within 90 days of grounding.

14.4.1.2.23.3. **(Added-1FW)** Provide FS/FGSs and JEIM with time change/inspection forecasts twice weekly.

14.4.1.2.24.2. **(Added-1FW)** If IMDS-CDB and CEMS are unavailable for more than 48 hours at home station or while deployed all MXG work-centers will use AFTO Form 349 to document all maintenance actions. Each performing work center will retain the maintenance data collection record in date-time order for input into MIS and CEMS once it becomes available. A copy of the AFTO Form 349 will also be sent

back to EM (for engine maintenance) by any means available and maintained until systems are back on line. EM will ensure all pertinent data is annotated. Units using IMIS as the system of input will continue to function as normal. In the event IMIS is unavailable, units will use above guidance until IMIS is available. Primary responsibility for maintenance documentation procedures will belong to the Section NCOIC.

14.4.1.2.24.3. **(Added-1FW)** Once MIS and CEMS come back on line performing work center will input all transactions in MIS. EM will verify data inputs and ensure all transactions have been documented, clear suspense, and verify CEMS accuracy.

14.4.1.3.6.2. **(Added-1FW)** Prior to all known deployments/TDYs, the FGS DO/Senior Enlisted Leader will coordinate with Propulsion Flight Chief for a Deployed Engine Monitor (DEM). Member will be 2A651 or above and will coordinate with EM for DEM training and responsibilities brief.

14.4.1.3.6.3. **(Added-1FW)** The deployed engine monitor will establish communications with home station upon arrival at the deployed site as soon as possible. The DEM will ensure required documentation is initiated, processed in MIS; normally the same day the action occurs but NLT 0700L the next day.

14.4.1.3.6.3.1. **(Added-1FW)** DEM will ensure every effort is made to utilize spare CANN engine(s) to replace engines removed for an unscheduled engine change. This may include cannibalizing parts from the engine being removed to restore serviceability to the spare CANN engine.

14.4.1.3.6.3.2. **(Added-1FW)** FGS personnel will gain Propulsion Superintendent or Deployed Engine Manager (DEM) approval prior to any CANN action(s) from a serviceable spare engine.

14.4.1.3.6.4. **(Added-1FW)** When MIS is not available, required documentation will be faxed to home station for processing by FS/FGS personnel. If MIS and Fax are unavailable, the required information will be phoned home by FS/FGS personnel for initiation and processing of documentation. The DEM will call EM as early as possible daily to provide status of engine removals/installations and delinquent documentation as they occur.

14.4.1.3.6.5. **(Added-1FW)** Upon arrival back to home station, immediately report back to EM Section to reconcile any and all engine reporting difficulties and return the DEM package.

14.4.1.3.14.1. **(Added-1FW)** Affected squadron will ensure proper documentation is accomplished and processed into MIS. Any applicable documentation will be delivered to EM by the end of the shift.

14.5.5.6. **(Added-1FW)** All inputs for the monthly schedule will be provided to 1 MXG/MXOS NLT COB on the 20th of the preceding month. The following agencies will provide inputs for the monthly schedule.

14.5.5.6.1. **(Added-1FW)** Operations squadrons will submit the finalized monthly flying contracts for the coming month.

14.5.5.6.2. **(Added-1FW)** Training Section will provide the training requirements for the coming month.

14.5.5.6.3. **(Added-1FW)** Armament Flight will provide the 18-month gun schedule.

14.5.5.6.4. **(Added-1FW)** EM will provide 6-month engine forecast/planned engine pulls.

14.5.5.6.5 **(Added-1FW)** AGE Flight will provide the monthly AGE schedule.

14.5.6.1.2. **(Added-1FW)** Scheduling Standardization. The following guidelines have been established to standardize scheduling practices in the 1 FW.

14.5.6.1.2.1. **(Added-1FW)** Standardized Flying Window:

14.5.6.1.2.1.1. **(Added-1FW)** The wing will adhere to a 12-hour maximum flying window, unless otherwise approved by the applicable group commander. The flying window is defined as the first take-off to the last landing of 1 FW aircraft at Langley AFB.

14.5.6.1.2.1.2. **(Added-1FW)** During normal flying, a minimum of a 12-hour window will be used as down time between the last land time the day prior and the first takeoff the day of flying.

14.5.6.1.2.1.3. **(Added-1FW)** Normal flying at Langley AFB occurs from 0600 to 2230.

14.5.6.1.2.1.4. **(Added-1FW)** Engine starts will not occur earlier than 0530.

14.5.6.1.2.1.5. **(Added-1FW)** During night flying, a minimum of a 10-hour window will be used as down time between the last land time the day prior and the first takeoff the day of flying. The window may be extended with the applicable group commander approval.

14.5.6.1.3. **(Added-1FW)** Quiet Hours Policy:

14.5.6.1.3.1. **(Added-1FW)** Reference [JBLE 11-251](#), *Flying Operations, Quiet Period/Airfield Closure Procedures*, for scheduling during daily flying.

14.5.6.1.3.2. **(Added-1FW)** OSS Current Operations Flight accepts requests for and will post quiet hour periods. After approval, they will notify the following agencies of the date, time, and event requiring quiet hours: 1 FW/CV, 1 OG/CC, 1 MXG/CC or equivalent, 1 FW OSS/OSA, 1 OSS Tower/RAPCON, 1 MXG/MXO, and the 27/71/94 FS and FS/FGS OICs.

14.5.6.3.10. **(Added-1FW)** Sortie Line Numbers:

14.5.6.3.10.1. **(Added-1FW)** MOC will be responsible for assigning sortie sequence numbers for off-station/cross country sorties and on-base additions. Schedulers assigned to each FS/FGS will assign local sortie sequence numbers. When deployed, the deployed scheduler or Production Superintendent will ensure that sequence numbers are assigned and coordinated with MOC.

14.5.6.3.10.2. **(Added-1FW)** The sortie sequence numbers, as shown in [Table 14.1](#), will be used to identify sorties flown.

Table 14.1. (Added-1FW) Sortie Sequence Numbers

Numbers Shared Line Numbers	
101- 110	Local Demo
041- 080	192d RSD Local Sorties
111- 115	DV Flights
140- 159	XC Demos
160- 199	CAP/ ONE
7th FTS Line Number	
006- 008	7 th OCF
009- 010	7 th FCF
401- 469	7 th Local (Including XC departures)
470- 510	7 th XCR (Return from off station)
511- 540	7 th TDY (Non-classified ATO)
866- 931	7 th Exercise/Deployed (Alert/HHQ/Exercise/Classified ATO)
27th FGS Line Numbers	
001- 004	27 th OCF
005	27 th FCF
201- 269	27 th Local (Including XC departures)
270- 310	27 th XCR (Return from off station)
311- 340	27 th TDY (Non-classified ATO)
800- 865	27 th Exercise/Deployed (Alert/HHQ/Exercise/Classified ATO)
71st FTU Line Numbers	
016- 019	71 st OCF
020	71 st FCF
341- 399	71 st Local (Including XC departures)
541- 570	71 st XCR (Return from off station)
571- 599	71 st TDY (Non-classified ATO)
741- 799	71 st Exercise/Deployed (Alert/HHQ/Exercise/Classified ATO)
94th FGS Line Numbers	
011- 014	94 th OCF
015	94 th FCF
601- 669	94 th Local (Including XC departures)
670- 710	94 th XCR (Return from off station)

711- 740	94 th TDY (Non-classified ATO)
932- 997	94 th Exercise/Deployed (Alert/HHQ/Exercise/Classified ATO)

14.5.6.3.11. **(Added-1FW)** Cross Country (XC) Sorties:

14.5.6.3.11.1. **(Added-1FW)** Squadron planned XC sorties will be posted on the monthly calendar and incorporated into the weekly planning process. Use of like MDS bases for XC support is desired.

14.5.6.3.11.2. **(Added-1FW)** Regarding PDM/Contract Inputs, source documents (781 series) will be returned to Langley AFB 1 MXG and 1 OG by the most reliable means available (i.e. fax or email) within 24-hours of landing

14.5.6.3.11.3. **(Added-1FW)** Typical weekend XC will be incorporated as follows:

14.5.6.3.11.3.1. **(Added-1FW)** Friday departure: XC jets, if at all possible, will count in the planned sortie total for that day, preferably in the first go (i.e. planned 12X0, sorties will be 8 local and 4 XC).

14.5.6.3.11.3.2. **(Added-1FW)** Monday RTB: XC jets will be counted in the planned sortie total for that day (i.e. planned 12X10, sorties will be 8X6 local and 4 XC, turn as required).

14.5.6.3.11.3.3. **(Added-1FW)** This requirement can be waived at the weekly scheduling meeting with the applicable group commander.

14.5.6.3.11.4. **(Added-1FW)** XC missions departing from LAFB will show a local hardline number, T/O time, and F/XC in mission block on the AF Form 297.

14.5.6.3.11.5. **(Added-1FW)** XCs over extended holiday weekends will be minimized to the maximum extent possible. If XC sorties are scheduled over an extended holiday weekend, they will be scheduled to depart no later than the last duty day prior to the weekend and scheduled to return no earlier than the first duty day following the weekend. Exceptions to this rule will be negotiated and approved by the applicable group commander at the weekly scheduling meeting.

14.5.6.3.11.6. **(Added-1FW)** Minimum Turn Times. Refer to [Table 14.2](#) for 1 FW minimum turn times. Turn time is defined as the time from aircraft landing to the next take-off.

14.5.6.3.11.6.1. **(Added-1FW)** Quick turn approval authority rests with the applicable group commander and should be coordinated at the weekly scheduling meeting.

Table 14.2. (Added-1FW) Minimum Turn Times

	<i>F-22A</i>
Minimum Turn	2 hr 45 min
Standard Turn	3 hr
Hot Pit Turn	1 hr
*Quick Turn	1 hr 30 min
* Quick turn permission is required by the applicable group commander whenever the estimated turn time falls below these minimums.	

14.5.6.3.11.6.2. **(Added-1FW)** Crew Ready Times:

14.5.6.3.11.6.2.1. **(Added-1FW)** Crew ready times for all scheduled aircraft will be called into the MOC and FS Top 3 NLT 60 minutes prior to takeoff.

14.5.6.3.11.6.2.2. **(Added-1FW)** Pilots should step approximately 55 minutes prior to scheduled takeoff for a standard-day mission. Night flying missions require the pilots to step approximately 60 minutes prior to the scheduled takeoff.

14.5.6.3.11.7. **(Added-1FW)** Operations and Maintenance Scheduling:

14.5.6.3.11.7.1. **(Added-1FW)** All MX scheduling suspense's/meetings that fall on a federal holiday, wing down day, goal day, etc. will be held the day prior, unless specifically stated.

14.5.6.3.12.7.2 **(Added-1FW)** Operations schedulers will provide the flying hour window and turn patterns for next week's schedule to 1 OSS/OSO NLT 1000 on Monday. The use of cascading turns should be used to the maximum extent possible.

14.5.6.3.12.7.3. **(Added-1FW)** All slides for the 1 OG/1 MXG scheduling meeting will be provided to 1 OSS/OSO NLT 1500 on Wednesday.

14.5.6.3.12.7.4. **(Added-FW)** Operations schedulers will upload the shell or range sheet, to include line numbers, turn pattern, mission type, brief time, mission configuration, take-off and land times, and sortie duration for the next week NLT 1200 on Tuesday. The shell will be finalized NLT 1200, Wednesday.

14.5.6.3.12.7.5. **(Added-1FW)** On Thursday, squadron operations schedulers will meet with 1 OSS/OSO to plan range utilization for 2 weeks out.

14.5.6.3.12.7.6. **(Added-1FW)** All slides for the wing scheduling meeting are due to 1 OSS/OSO NLT 1500 on Thursday.

14.5.6.7.3. **(Added-1FW)** During scheduled RSD Weekends, FS/FGS schedule will be reviewed and finalized by 1600 on Friday. The Wing Flying schedule will be reviewed and signed by the 192d OG/CC and then the 192d MXG/CC prior to being presented to 192d WG/CC for final approval. 192d PS&D will distribute the schedule NLT 1600 on the last fly day.

Chapter 16 AEROSPACE VEHICLE COATING AND MARKING REQUIREMENTS.

16.1. (Added-1FW) Purpose of Coating and Marking Guidance.

16.1.1. **(Added-1FW)** Refer to TO 1F-22A-2-00GV-00-1 Chapter 10 for Exterior Paint, Placards and Markings.

BRAD S. HUEBINGER, Colonel, USAF
Commander, 1st Fighter Wing

ATTACHMENT 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References:

AFI 21-103, *Equipment Inventory, Status and Utilization Reporting*
AFI 21-103, ACC Supplement, *Equipment Inventory, Status and Utilization Reporting*
AFI 21-103, ACC Supplement Addendum BB, *Equipment Inventory, Status and Utilization Reporting System / F-22A Minimum Essential Subsystem List (MESL)*
TO 00-5-1, *AF Technical Order System*
TO 00-5-1, ACC Supplement 1, *AF Technical Order System*
TO 00-5-1, 1FW Supplement 1, *AF Technical Order System*
TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*
TO 00-20-1, ACC Supplement 1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*
TO 00-20-1, 1FWSupplement 1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*
TO 00-20-2, *Maintenance Data Documentation*
TO 00-80C-1, *Crashed, Damaged, Disabled Aircraft Recovery Manual*

Prescribed Forms (Located on the QA SharePoint Site)

1FW Form 47, *Dropped Object Worksheet*
1FW Form 51, *Weekly Rag Control Form*
1FW Form 52, *Oil/Hydraulic/Oxygen/Nitrogen Cart Servicing Log*
1FW Form 53, *Weekly FOD Inspection Sheet*
1FW Form 56, *Impoundment Official Documentation Checklist*
1FW Form 60, *Procurable Asset Manufacturing Release Form*
1FW Form 62, *Impoundment Official Actions Checklist*
1FW Form 63, *Request for Local Manufacture*
1FW Form 145, *Lost Tool/Item Report*

Adopted Forms

AFTO Form 95, *Significant Historical Data*
AFTO Form 244, *Industrial/Support Equipment Record*
AFTO Form 349, *Maintenance Data Collection Record*
AFTO Form 350, *Reparable Item Processing Tag*
AFTO Form 781A, *Maintenance Discrepancy and Work Document*
AFTO Form 781H, *Aerospace Vehicle Flight Status and Maintenance Document*
AF IMT 2410, *Inspection/TCTO Planning Checklist*
AF IMT 2411, *Inspection Document*
AF IMT 2434, *Munitions Configuration and Expenditure Document*
AF IMT 2692, *Aircraft/Missile Equipment Transfer/Shipping Listing*
DD Form 2026, *Oil Analysis Request*
DD Form 2875, *System Authorization Access Request (SAAR)*

ATTACHMENT 20 (Added-1FW)

TOOL IDENTIFICATION

Tool identification etchings will be in the following format: EXAMPLE: LEYYXXXXX (LEYY = defined by this attachment, XXXXX = defined by unit). Units will maintain a copy of 5th through 9th character identifiers in the form of Master Inventory Listing (MIL) in TC-Max to be furnished to QA upon request.

Table A2.1 Tool Identifications

* Note LE = 1 FW/192d WG IDENTIFIER

MXS Shop Identifiers	
LECD = TMDE/PMEL	LEED = Corrosion Control
LECJ = Tank Farm	LEEJ = NDI
LECK = Fuel System	LEEK = Maintenance Flight
LECP = Egress	LEEH = Metals Technology
LECT = Test Cell/Hush House	LEEL = LO Flight
LECW = Support Section Shadow Board	LEET = AGE Flight
LECR = F-119 Engine	LEEV = Structural Repair
Shop/Propulsion Support	LEEX = TA
LEPW = Pratt & Whitney	LEDS = Dragon Super
LEEA = Repair and Reclamation	LERC = F-22 Mod Team
MUNS Shop Identifiers	
LEEU = Muns	
LEEE = Armament	
FGS/FTU Shop Identifiers	
LE27=27 FGS	
LE94=94 FGS	
LE71=71 FTU	
Aircrew Flight Equipment (AFE) Flight Identifiers	
LETL = 27th Fighter Squadron Aircrew Flight Equipment	
LENL = 94th Fighter Squadron Aircrew Flight Equipment	
LEPL = 71st Fighter Training Unit Aircrew Flight Equipment	
LESL = T-38 Aircrew Flight Equipment	
OSS Shop Identifiers	
LEEG = F-22 Survival Equipment	LEDE = F-22 Demo Team
LEEF = T-38 Survival Equipment	
LEFP = ACMI Pod Shop	
LE38= T-38 MX	
MXG Shop Identifiers	
LEMW = Weapons Standardization	
LEMQ = Quality Assurance	
LEMT = Maintenance Training	

ATTACHMENT 21 (Added-1FW)

MANUAL JCN ASSIGNMENTS

Figure A21.1

Assigned JCNs	Agency
	Operations Group / Maintenance Group Staff
0001 – 1999	Utilized by Integrated Maintenance Data System (IMDS)
2301 – 2450	Engine Management (EM) Documentation
2451 – 2475	Aircrew Flight Equipment
	Scheduled Maintenance
2001 – 2100	27 FGS Plans and Scheduling
2101 - 2200	71 FTU Plans and Scheduling
2201 – 2300	94 FGS Plans and Scheduling
	Unscheduled Maintenance
9676 – 9700	27 FGS Weapons Flight
9701 - 9725	71 FTU Weapons Flight
9726 – 9750	94 FGS Weapons Flight
	MXS
2476 - 2600	AGE
9751 – 9775	Egress
9662 - 9675	Fuels
	MUNS Munitions
9776 – 9800	Unscheduled Maintenance
	MUNS Armament System Flight
9801 – 9825	Scheduled Maintenance

ATTACHMENT 21 (cont.)

MANUAL JOB CONTROL NUMBER ASSIGNMENTS

Figure A21.2

Assigned JCNs	Agency
	IMIS Reserved
2601 – 9610	Base IMIS Reserved Class/Unclass
9611 – 9661	Depot Reserved
	T-38
9851 – 9900	Plans and Scheduling
9901 – 9950	Debrief
9951 – 9975	Redball Maintenance
9976 – 9999	Cannibalization