

**BY ORDER OF THE COMMANDER
1ST SPECIAL OPERATIONS WING
(AFSOC)**

HURLBURTFIELD INSTRUCTION 21-103

22 JUNE 2022



Equipment Maintenance

**FOREIGN OBJECT DAMAGE (FOD) AND
DROPPED OBJECT PROGRAM (DOP)**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This publication implements Air Force Policy Directive (AFPD) 21-1, *Air and Space Maintenance*, and AFI 21-101, AFSOC Supplement_1, *Aircraft and Equipment Maintenance Management*. It establishes responsibilities and outlines procedures for the Foreign Object Damage (FOD) Prevention and Dropped Object (DOP) Program. It implements procedures in DAFI 21-101, *Aircraft and Equipment Maintenance Management*; DAFI 91-204, *Safety Investigations and Reports*; and DAFMANFI 91-203, *Air Force Occupational Safety, fire, And Health Standards*. This instruction applies to all operational, maintenance, and support activities functionally assigned or TDY to Hurlburt Field. This publication does not apply to Air Force Reserve Command (AFRC) Units or the Air National Guard (ANG). Refer recommended changes and questions about this publication to the OPR listed above using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate chain of command. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, Table 1.1., for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or to the Publication OPR for non-tiered compliance items. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFI 33-322, *Records Management and Information Governance Program*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Management System. The use of the name or specific trademark manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force. Compliance with all Attachment(s) is mandatory.

SUMMARY OF CHANGES

This publication has been substantially revised and must be completely reviewed in its entirety. Significant changes include the addition of 1 SOMXG Quality Assurance duties, guidance on head coverings, updated three out-of-date references. Additionally, updated guidance on flight line individual Personal Protection Equipment (PPE) items and the procedure to report internal engine damage.

1. Program Objective.

- 1.1. To raise FOD/DOP awareness and enhance prevention methods for all personnel.
- 1.2. To standardize reporting procedures for all FOD/DOP related incidents to assigned aircraft.
- 1.3. To obtain positive results through an aggressive and functional FOD/DOP prevention program. Results achieved by all military, civilian, and contract personnel supporting operations taking an active role in FOD/ DOP control.

2. Program Responsibilities.

- 2.1. The 1 SOW Vice Commander will serve as FOD Prevention Program Manager and chairperson of all quarterly wing FOD briefings. The chairperson monitors all phases of the FOD/DOP prevention program implemented within the wing.

3. FOD.

- 3.1. The WG/CV is responsible for ensuring an effective FOD prevention program is established IAW DAFI 21-101, *Aircraft and Equipment Maintenance Management*.
- 3.2. The SOW FOD monitor will:
 - 3.2.1. Administer and publicize the FOD prevention program.
 - 3.2.2. Supervise investigations, ensure accurate reporting, advise, and assist in the implementing corrective actions when necessary. Coordinate closely with 1 SOW/SE during investigations to provide required information needed for timely reporting IAW AFI 91-204, *Safety Investigations and Reports*.
 - 3.2.3. Disseminate information on all FOD incidents and preventive measures to appropriate levels to keep them aware of problem areas.
 - 3.2.4. Serve as the focal point for all FOD prevention incentive programs.
 - 3.2.5. Maintain the wing FOD continuity book electronically and electronic historical records of all FOD incidents IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).
 - 3.2.6. Conduct a wing FOD briefing, as determined by the 1 SOW/CV, to discuss FOD/DOP and lost tool trends and related issues. In addition to the listed attendees in DAFI 21-101 the following will also attend to the wing FOD committee meeting when required:

Table 3.1. COMMITTEE MEMBERS.

| | | | |
|------------|---------------|------------------|-------------|
| 1 SOW/CV | 1 SOW/SE | Airfield Manager | 1 SOMXG/CC |
| 1 SOG/CC | 801 SOAMXS/CC | 901 SOAMXS/CC | 1 SOAMXS/CC |
| 1 SOLRS/CC | 1 SOSFS/S3 | 1 SOCES/CC | 15 SOS/CC |
| 1 SOSS/CC | 4 SOS/CC | 8 SOS/CC | 19 SOS/CC |
| 34 SOS/CC | 319 SOS/CC | | |

3.2.7. WG/CV determines additional attendees as needed.

3.2.8. Conduct the FOD/DOP prevention briefing for the 1 SOMXG personnel during the initial/ refresher maintenance orientation training taught at Maintenance Training Flight (MTF).

3.2.9. Attend the J3AZR2A671A 001, *Jet Engine Mishap Investigation Course*, within 180 days of assuming position.

3.2.10. Conduct and track weekly spot inspections of all maintenance areas, support sections, hangars, and tire check points.

3.3. The 1 SOCES/CC will:

3.3.1. Ensure pavement repair is coordinated with the airfield manager.

3.3.2. Ensure the availability of sweepers at all times to include weekends, holidays, and after normal duty hours for emergency sweeping.

3.3.3. Ensure all contract personnel are made aware of this instruction and comply with the provisions herein.

3.4. 1 SOMXG - Quality Assurance (QA) will:

3.4.1. Will accomplish inspections to determine compliance with FOD prevention procedures with assistance from the 1 SOW FOD Monitor.

3.5. Squadron/Unit Responsibilities:

3.5.1. All units will designate, in writing, an NCO/OIC as a primary and alternate FOD prevention monitor. A copy of the appointment letter will be sent to the FOD monitor and updated when any names change. A copy will also be maintained in the unit's continuity book.

Table 3.2. FOD PREVENTION MONITORS.

| | | | |
|------------|---------------------|---------|----------|
| 1 SOW/SE | Airfield Management | 1 SOMXG | 1 SOAMXS |
| 801 SOAMXS | 901 SOAMXS | 1 SOLRS | 1 SOSFS |
| 1 SOCES | 4 SOS | 8 SOS | 15 SOS |
| 19 SOS | 34 SOS | 319 SOS | 25 IS |

| | | | |
|----------|---------------------|---------------|----------|
| 1 SOW/SE | Airfield Management | 1 SOMXG | 1 SOAMXS |
| 373 TRS | LM/QA | SIERRA NEVADA | |

3.5.2. At a minimum, squadron/unit FOD monitors will:

3.5.2.1. Inform sections within unit of potential FO/DO hazards, trends, and prevention practices.

3.5.2.2. Ensure the 1 SOW FOD monitor contact poster is prominently displayed on all section FOD or safety boards.

3.5.2.3. Brief personnel monthly on updated significant information to include FODs, DOs, lost tools, and any other trends. Promote FOD awareness within the squadron/unit.

3.5.2.4. Attend the FOD prevention committee meetings if required.

3.5.2.5. Assist the 1 SOW FOD monitor in investigations as needed.

3.5.3. It is the responsibility of the supervisors and the squadron/unit FOD monitors to be familiar with this instruction and references listed in [Attachment 1](#).

3.5.4. In conjunction with safety briefings, supervisors will brief their personnel on organization policies and each individual's responsibility towards an effective FOD/DOP prevention program.

3.5.5. All maintenance personnel will receive FOD/DOP training annually. This training will be tracked in Integrated Maintenance Data System (IMDS) as Consolidated Maintenance Training (CMT).

3.6. FOD Prevention Practices:

3.6.1. Personnel will be on constant alert for any form of FO during all phases of maintenance and ensure work areas are continually policed to eliminate FOD.

3.6.2. Facility managers will monitor facility areas for items that could be a potential FO contributor. Special attention will be focused on paved/parking areas, break areas, and walkways around the facility for deterioration.

3.6.3. Any base organization that has contract personnel working on the flight line will ensure all contract personnel are made aware of this instruction.

3.6.4. Personnel are authorized to wear the OCP sun hat, alias floppy, wide brim or boonie hat while performing official duties in 1 SOMXG controlled outdoor maintenance areas on Hurlburt Field. The sun hat will not be worn in non-maintenance areas such as parking lots and housing areas. Wear of the OCP sun hat will provide protection from sun exposure on the top of the head, back of the neck, and top of the ears. In accordance with Air Force Manual 91- 203, *Air Force Occupational Safety, Fire and Health Standards*, paragraph 24.4.1., hats will not be worn on the flight line within 50 feet of operating engines or while performing duties where the potential exists to create foreign object damage. To prevent FO hazard, the sun hat neck strap will be secured under the chin.

3.6.5. The knit watch cap may be worn during cold weather conditions only.

3.6.6. Personnel with a documented medical condition from a medical facility may wear a metal free hat. Personnel will have the medical documentation for such a condition on their person while on the flight line.

3.6.7. In accordance with Department of the Air Force Instruction 21-101, *Aircraft and Equipment Maintenance Management*, paragraph 11.8.3.6.2., metal insignias/badges will not be worn on the flight line.

3.6.8. All uniform items, when removed, should be stored inside an aircraft or safe storage area while working on an aircraft. At no time will any article of clothing be placed in or near an intake or on a fire bottle.

3.6.9. Glass bottles are not authorized on the flight line unless bottle/object are required to be glass or of a similar material by T.O. or other guidance for a specific purpose.

3.6.10. Each organization will ensure foreign object containers are emptied at the end of each shift.

3.6.11. All personnel are forbidden to have personal tools on the flight line or in any front-line support shop working areas supporting flight line operations, to include aircrew flight equipment, fleet service, SOS, etc.

3.6.12. Personnel will practice good housekeeping and maintain hardware accountability at all times. Parts bags will be used and will be attached to the associated component or area as applicable. The hardware nomenclature and quantity that is placed in the bag will be written on the bag. The parts bag will also include the aircraft tail number, component serial number or equipment number, and name and employee number of the individual who initially placed the hardware in the parts bag.

3.6.13. Personal protective equipment (PPE)/safety items include reflective belts, reflective vest, headsets, ear defenders, ear plug cases, safety glasses/goggles, respirators, whistles, and bump/hard hats and head lamps. Each item will be marked with first name initial, last name, and 5-digit employee number.

3.6.14. All areas where aircraft are towed, taxied, or parked; shops and maintenance areas where equipment or components are worked on; and entry points to the flight line will be kept free of debris, stones, hardware, etc. Additionally, support sections (tool rooms) and hazardous storage areas will always remain FO free due to the potential for FO migrating to the flight line or maintenance areas.

3.7. FOD prevention:

3.7.1. The 1 SOMXG/CC is the OPR for the development of wing procedures for control and management of tools/equipment used on the flight line and aircraft/aerospace equipment maintenance industrial areas. As a minimum, the following guidance will be adhered to:

3.7.2. FOD walks will be conducted once per week, Wednesday between the hours of 0600-0900 or 1400-1700. If Wednesday is a down day, the FOD walk will be conducted on the next scheduled duty day.

- 3.7.2.1. The FOD boss or equivalent will be used 5 days a week, Monday through Friday. The FOD boss may be run during any time the unit deems appropriate.
- 3.7.2.2. When adverse weather interrupts or precludes the accomplishment of the FOD walk, it will be accomplished during the next period of favorable weather conditions upon termination of weather advisories/warnings during daylight hours.
- 3.7.3. All units are responsible for their assigned FO walk areas (See [Attachment 2](#)).
- 3.7.4. All units will accomplish an FO walk on the interior and exterior of their duty sections, to include hangar bays.
- 3.7.5. Upon request, representation from all base squadrons may be utilized to augment FO walks.
- 3.7.6. During FO walks, personnel will maintain a side-by-side formation to ensure a thorough check. No food or drinks are allowed during FO walks and all members will maintain an even spacing between themselves to ensure the best coverage.
- 3.7.7. All FO will be picked up. Any unique or unusual objects will be given to the squadron/unit FOD representatives to be turned into Wing FOD monitor. All other objects will be discarded at the termination of the walk.
- 3.7.8. FO walks will be accomplished in the immediate area prior to starting engines, including Test Cell, and after aircraft taxi.
- 3.7.9. All dispatchable CTK's that have the potential to enter the flight line environment will be equipped with a sealable FO container. The FO container will be identified on the MIL and emptied upon turn in to support sections.
- 3.8. Vehicle operations:
 - 3.8.1. Tire FOD Checks:
 - 3.8.1.1. All vehicles and equipment in tow entering the flight line perimeter fence will stop and perform a tire FO check IAW HFI 13-213, *Airfield Driving Program*. A flashlight will be utilized to accomplish FO checks during hours of darkness.
 - 3.8.1.2. A tire FO check must be accomplished in the event of a vehicle leaving the paved surface of the flight line as well as at all established tire FOD check points IAW HFI 13-213, *Airfield Driving Program*, and AFI 13-213, *Airfield Driving*.
 - 3.8.2. Safety locking devices or cotter pins shall always be used to secure pintle hooks. Cotter pins or pins will be secured to the vehicle by a lanyard.
 - 3.8.3. All flight line support vehicles, to include special-purpose vehicles, Gators, EZGOs, etc., will be equipped with a secured FO container to include a lid. All FO containers will be stenciled "FOD", with letters not less than 2" tall. FO containers will be emptied when vehicles are turned in, at the end of shift, and when containers are filled. Vehicle floorboards and beds will be kept FO-free at all times.
 - 3.8.4. Metal valve stem caps will be removed from all GOV tires entering flight line. Plastic caps or no caps may be used (vehicle AF1800 must be documented).

3.8.5. AGE equipment will be inspected for FO before and after use. AGE flight will be responsible for equipment on the ready line.

3.9. Aircraft FOD Prevention:

3.9.1. Line badges will be secured to uniforms using lanyards or armbands that also conform to AFI 36-2903, *Dress and Personal Appearance of Air Force Personnel*. Lanyards used around the neck will be of a breakaway style and must **NOT** be able to support the weight of the individual.

3.9.2. Line badges will be stowed when individuals are within 25 ft of any operating engine.

3.9.3. Aircrew will ensure cleanliness of the aircraft prior to accepting the aircraft as crew ready. All discrepancies will be corrected by maintenance prior to crew accepting the aircraft. The aircrew is responsible for all trash accumulated from the time of acceptance through release of the aircraft back to maintenance.

3.10. Agencies involved in non-daily routine actions on flight line:

3.10.1. Agencies (e.g. SOCES, SOCS, etc.) involved with any duty performance on the flight line or surrounding maintenance buildings (e.g. ramps, hangars, storage buildings, etc.) will account for all tools, pro gear, etc., entering and exiting the flight line areas. If an item becomes lost or cannot be accounted for, notify MOC and Airfield Management immediately. Provide a description of the item lost and the areas traveled while on the airfield. The airfield manager will coordinate a search effort and notify the SOMXG/CC or equivalent for tenet units of the incident and the results of the search.

3.11. FOD Incident Investigations and Reporting:

3.11.1. Each case of FOD will be investigated as outlined in DAFI 21-101, *Aircraft and Equipment Maintenance Management*, and AFI 91-204, *Safety Investigations and Reports*, to determine the cause. Notify the MOC and the wing FOD program monitor immediately. If the aircraft is impounded, proper procedures will be strictly adhered to. All mishaps will be investigated using the expertise in maintenance, safety, and other staff agencies as needed. Full cooperation of all affected parties is required to ensure an accurate and complete investigation is accomplished.

3.11.2. All mishaps will be reported IAW AFI 91-204, *Safety Investigations and Reports*. Wing safety will prepare all mishap reports when the cost of damages exceeds \$50,000.

3.11.3. The 1 SOMXS wheel and tire shop will notify the FOD monitor of all tires that are damaged due to FO as damage is discovered.

3.11.4. Transient Aircraft. The wing FOD monitor will be responsible to investigate any foreign object damage to a transient aircraft as outlined in DAFI 21-101, *Aircraft and Equipment Maintenance Management*.

3.11.5. All engine removal actions due to internal damages or erosion will be reported to the wing FOD Monitor for investigation.

3.12. Incentive Programs:

3.12.1. The following outlines the FOD award programs. The intent of this program is to increase FOD/DOP and lost tool awareness and reward contributions to Hurlburt personnel toward prevention.

3.12.2. Golden Bolt Award:

3.12.2.1. Each month the Golden Bolt will be positioned in or around the flight line area and supporting back shops on a random basis by the wing FOD monitor or representative. This is aimed at maintaining FOD focus and awareness.

3.12.2.2. The Golden Bolt will remain under constant observation if it is placed or hidden in an area that, if not found, would create a FOD hazard.

3.12.2.3. The individual discovering the Golden Bolt will receive a certificate of achievement and a 1-day pass.

3.12.3. Quarterly FOD Prevention Poster:

3.12.3.1. This program is open to anyone assigned to Hurlburt Field. Submissions should be a drawing or computer-generated graphic aimed at promoting FOD awareness.

3.12.3.2. Entries will contain name, unit, and duty phone.

3.12.3.3. Only one person can be nominated per entry. No group entries.

3.12.3.4. The entry must be a formatted 8.5 x 11 portrait or landscape and submitted to the squadron/unit FOD monitor.

3.12.3.5. The squadron/unit monitor will send the submission to the wing FOD program monitor in person or email to ISOW.FOD.ORG@us.af.mil. Entries are judged on originality. Winners will receive a certificate of achievement and a 1-day pass.

3.12.4. FOD Fighter of the Quarter:

3.12.4.1. The recognition program will require supervisors at all levels to be alert to what is happening on and off the flight line at all times. If a potential FOD hazard is detected and removed from an aircraft, support equipment, flight line, or any aircraft maintenance or maintenance related facility, the individual's supervisor is highly encouraged to submit a letter in a memorandum format for nomination or set up a meeting with the squadron/unit FOD monitor.

3.12.4.2. If there is more than one submission per squadron/unit, the squadron/unit FOD monitor will select a winner. The squadron/unit monitor will send the submission to the wing FOD program monitor in person or email to ISOW.FOD.ORG@us.af.mil. The overall winner from all submissions will be determined at the wing level.

3.12.4.2.1. At a minimum, the nomination letter for FOD Fighter of the Quarter will include the following: date of discovery, task being performed, action taken, damage prevented, and potential savings to the wing. The winner will receive a certificate of achievement and a 2-day pass.

3.12.4.3. All entries for quarterly awards will be submitted no later than the last day of the last month of the quarter. **Note:** Civilian personnel will receive equivalent rewards.

4. Aircrew and Aircrew Flight Equipment (AFE).

4.1. The following procedures to control aircrew tools, AFE, and issued aircrew equipment tool kits that are dispatchable to the flight line have been coordinated through the Aircrew Flight Equipment Superintendent:

4.1.1. The AFE officer and NCOIC will ensure tools are available for all home-station and mobility commitments. All section supervisors are responsible for the composite tool kit (CTK) program in their section. All AFE technicians are responsible for the tools in the CTK they have signed out.

4.1.2. All aircrew and AFE CTKs will be standardized and controlled IAW AFI 11-301, Volume 1, *Aircrew Flight Equipment (AFE) Program*.

4.1.3. All aircrew Hostile Environment Repair Kits (HERK), loadmaster's and gunner's tool kits will be properly etched and the tool bag will be sealed with a copy of the master inventory list inside. Contact the wing FOD program monitor or 1 SOMXG QA for an approved unit CTK designator.

4.2. Pilots and aircrew members must account for all equipment and personal items after each flight. If items are identified as missing, aircrew will conduct an immediate search of the flight deck/cargo compartments. If the item is not recovered, the aircrew & maintenance personnel must ensure that the proper documentation is annotated in the aircraft Air Force Technical Order AFTO 781A, *Maintenance Discrepancy and Work Document*, IAW Technical Order (T.O.) 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policy and Procedures*. When an item is lost on or in the vicinity of aircraft or equipment, lost item/tool procedures in Chapter 8, Tool and Equipment Management of DAFI 21-101, *Aircraft and Equipment Maintenance Management*, will be followed.

4.3. When practical, flight crew personal items will be marked with the individual's first name initial, last name, and squadron, thus ensuring accountability and expeditious return of equipment.

5. Dropped Object Prevention (DOP) program:

5.1. The objective of this program is to establish reporting procedures for all organizations assigned to 1 SOW which fly or maintain assigned aircraft. All dropped objects will be investigated by the responsible unit. The data gathered will be used to apply preventative measures to our operations.

5.2. Wing DOP Monitor will:

5.2.1. Review the 1 SOMXG Dropped Object Worksheet, *Dropped Object Worksheet*, and record dropped object information for tracking purposes.

5.2.2. Analyze dropped object reports for evidence of adverse trends and negative maintenance practices and provide feedback to the squadron/unit DOP monitors.

5.2.3. Notify the 1 SOMXG/CC of the occurrence and estimated cost of repairing the aircraft.

5.2.4. Prepare and disseminate a monthly/quarterly dropped object summary, highlighting items requiring increased awareness to 1 SOMXG/CC, each squadron/unit, and MTF.

5.2.5. Maintain a dropped object log by fiscal year for 2 years. The log will contain control number, date, AMU/squadron, aircraft, object dropped, cost, whether or not it was preventable, DR action, and action taken to prevent recurrence.

5.2.6. Determine if there is a problem isolated to a particular unit/squadron or common to all units/squadrons.

5.2.7. Work with squadron/AMU DOP monitors to remedy adverse dropped object trends.

5.3. Squadron/Unit Responsibilities:

5.3.1. All units will designate, in writing, an NCO/OIC as a primary and alternate DOP prevention monitor. The DOP monitor and FOD monitor should be the same person whenever possible. A copy of the appointment letter will be sent to the wing DOP monitor and updated when any names change. A copy will also be maintained in the unit's continuity book.

Table 5.1. DOP PREVENTION MONITORS.

| | | |
|----------|------------|---------------|
| 1 SOAMXS | 801 SOAMXS | 901 SOAMXS |
| 1 SOMXS | 4 SOS | 8 SOS |
| 319 SOS | LM/QA | SIERRA NEVADA |

5.4. Squadron/Unit DOP monitor will:

5.4.1. Act as a point of contact for the wing DOP monitor. Train personnel that can and will perform the duties of a DOP monitor if the primary and alternate monitors are not available. They will work with the wing DOP monitor on all dropped objects that affect their squadron/unit.

5.4.2. Work with other AMUs and the wing DOP monitor to remedy problems.

5.4.3. Publicize the DOP program through briefings and roll calls highlighting the objects most often dropped.

5.4.4. Brief the squadron director of operations/maintenance superintendent on AMU dropped objects with attention to adverse trends or poor maintenance practices.

5.4.5. Ensure the 1 SOMXG Dropped Object Worksheet, *Dropped Object Worksheet*, is completed and a copy is forwarded to the wing DOP monitor within 24-hours. The worksheet can be found at <https://usaf.dps.mil/sites/AFSOC-1SOW/fod/Shared%20Documents/Forms/AllItems.aspx> shared documents/blank forms may be obtained from the wing DOP monitor or 1 SOMXG QA.

5.5. Maintenance Training Flight (MTF) will ensure dropped object training for aircraft maintenance personnel through the combined maintenance training (CMT) course. Training will be kept current through dropped object monthly summaries provided by the wing DOP monitor. MTF will work with the wing DOP monitor to ensure aircraft maintenance technicians are well informed of problem objects and how to prevent them from occurring.

5.6. Responsibility:

5.6.1. Every maintainer and aircrew member will report all dropped objects to the Maintenance Operation Control (MOC) when any object is discovered missing before, during, or after each flight.

5.6.2. Discovering units will fill out the 1 SOMXG Dropped Object Worksheet, *Dropped Object Worksheet*. The maintenance director of operations/maintenance superintendent will ensure the worksheet is completed and forwarded to the wing DOP monitor at ISOW.FOD.ORG@us.af.mil within 24 hours.

5.6.3. Initial dropped object reports will be made to AFSOC/A4 via telephone, e-mail, or message within 24 hours of occurrence. If it involves casualties, property damage, or if adverse publicity is likely, report IAW AFMAN 10-206, *Operational Reporting (OPREP)*. The wing DOP monitor notifies the base/wing safety office of all dropped objects. Units will maintain reports for a minimum of 24 months (may be electronic).

5.6.4. Follow-up final report will be forwarded by the DOP monitor to AFSOC/A4 within 3 duty after the occurrence.

5.6.5. Transient Aircraft. The local wing DOP monitor will be responsible to investigate dropped objects from a transient aircraft. The wing DOP monitor will provide the home station DOP monitor with sufficient data to generate a report for trending and tracking purposes.

5.7. Prevention:

5.7.1. Effective prevention of dropped objects starts when an aircraft door, panel, or cowlings is opened for maintenance and during munitions buildup, loading, and arming.

5.7.2. Maintenance personnel must ensure doors, cowlings, and panels fit properly. Special emphasis will be placed on the condition and serviceability of all fasteners, nut plates, and latching devices, as they are prime contributors to dropped objects.

5.7.3. Flight crews have a significant responsibility for the prevention of dropped objects inside the aircraft while performing in-flight duties. Significant emphasis should be placed during mission briefs on the prevention of dropping objects.

5.7.4. Since aircraft are considered crew ready prior to crew show, flight crews will ensure all panels and doors opened for inspection or maintenance are secured. Discrepancies will be immediately brought to the attention of the crew chief. Dropped Object Investigation and Reporting:

5.8. Units will immediately notify MOC when a dropped object is reported. MOC will immediately notify 1 SOMXG QA and the Wing FOD/DOP monitor of the dropped object. MOC will run an aircraft dropped object checklist. Aircrew or maintenance personnel discovering a dropped object will make the appropriate entries on the next open block of the Air Force Technical Order AFTO 781A, *Maintenance Discrepancy and Work Document*, IAW Technical Order (T.O.) 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policy and Procedures*. Aircrews will debrief the loss to maintenance immediately upon landing.

5.8.1. Dropped objects will be investigated using the 1 SOMXG Dropped Object Worksheet, *Dropped Object Worksheet*.

5.8.2. Squadron/AMU DOP monitors and subject matter experts will assist the wing DOP monitor when required.

5.8.3. The technician discovering the dropped object will:

5.8.3.1. Notify the Production Superintendent and flight chief of the missing object.

5.8.3.2. Initiate the 1 SOMXG Dropped Object Worksheet, *Dropped Object Worksheet*.

5.8.4. The Production Superintendent will notify the MOC.

5.8.5. 1 SOMXG QA will review the initial investigation at the time of occurrence.

5.8.6. If material failure or design deficiency is the cause of a dropped object, a deficiency report will be submitted to the product improvement manager, IAW T.O. 00-35D-54, USAF Deficiency Reporting, Investigation, and Resolution. Dropped objects resulting from maintenance malpractice will be documented as such and briefed during monthly and quarterly briefings.

5.8.7. The Wing DOP monitor and 1 SOMXG QA will analyze dropped object incidents for unit trends and ensure corrective actions are valid and completed.

6. Lost Item/Tool Procedures.

6.1. Supervisors ensure all assigned personnel are familiar with lost tool procedures. When an item is lost on or in the vicinity of aircraft or equipment, the following procedures apply:

6.1.1. The person identifying the missing item/tool will search the immediate work area for the item/tool. If not found, after completing an initial search, the individual will notify the Expediter, Production Superintendent, or equivalent.

6.1.2. Place a Red X in the Air Force Technical Order AFTO 781A, *Maintenance Discrepancy and Work Document*, IAW Technical Order (T.O.) 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policy and Procedures*, or the equipment AFTO Form 244/245, *Industrial/Support Equipment Record*, of all affected aircraft or equipment with a description of the item/tool and a specific, last known, location of the item/tool.

6.1.3. Expediter, Production Superintendent, or equivalent will immediately notify the maintenance director of operations/maintenance superintendent, support section, MOC, and 1 SOMXG QA.

6.1.4. An initial one-hour search of the immediate area will be conducted. If the item/tool is not recovered after conducting the one hour search the following apply:

6.1.4.1. The unit identifying the lost item/tool will document a 1 SOMXG Lost Tool Worksheet, *Lost Item/Tool Worksheet*. The worksheet can be found at <https://eis.afsoc.af.mil/sites/1SOW/fod/default.aspx> shared documents/blank forms may be obtained from the lost tool monitor located in the 1 SOMXG building or from 1 SOMXG QA.

- 6.1.4.2. Aircraft/equipment will be impounded, if warranted by proper authority.
- 6.1.5. If not found, the MOC will notify the 1 SOMXG/CC.
- 6.1.6. The maintenance director of operations/maintenance superintendent shall determine when the search may be discontinued.
- 6.1.7. Upon completion of the search, maintenance director of operations/maintenance superintendent will ensure the 1 SOMXG Lost Tool Worksheet, *Lost Item/Tool Worksheet*, is completely filled out and forwarded to the lost tool monitor in QA or e-mail to 1SOW.FOD.ORG@us.af.mil. If an aircraft is involved, the maintenance director of operations/maintenance superintendent will ensure a copy is forwarded to wing PS&D for placement in the aircraft historical files. All lost item/tool work sheets will be maintained in the unit's support section.
- 6.1.8. If at any time during the investigation or any period after the investigation, the item/tool is found and/or retrieved, complete the 1 SOMXG Lost Tool Worksheet, *Lost Item/Tool Worksheet*, notify the maintenance director of operations/maintenance superintendent, support section, MOC, 1 SOMXG QA, and Production Superintendent or equivalent. The completed worksheet can be either e-mailed to 1SOW.FOD.ORG@us.af.mil or dropped off to the lost tool monitor in QA.
- 6.1.9. When it is suspected that the item/tool has fallen into an inaccessible or unobservable aircraft area, a nondestructive inspection (NDI) will be performed or borescope equipment will be used to attempt to locate the lost item/tool.
- 6.1.10. If the item/tool is in an inaccessible area that poses no FOD threat and the action is to leave the item/tool in place, the x-ray (or equivalent) with the identification of the exact item/tool location and copies of all information concerning the lost item/tool are maintained in the aircraft historical file until the item/tool is recovered.
- 6.1.11. If at any time during the investigation or any period after the investigation, the item/tool is found, but is inaccessible, notify the maintenance director of operations/maintenance superintendent, support section, MOC, 1 SOMXG QA, expeditor, Production Superintendent or equivalent, and the owning work center.
- 6.1.12. The maintenance director of operations/maintenance superintendent may explore other possible actions to include having the unit or a DFT disassemble the aircraft to remove the item/tool.
- 6.1.13. If the aircraft MDS is one that has a PDM or is scheduled for depot modification, the lost item/tool and location is listed in the AFTO 345, *Aerospace Vehicle Transfer Inspection Checklist and Certification*, for removal by the depot.

DANIEL L. MAGRUDER, Colonel, USAF Vice
Commander

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

AFPD 21-1, *Maintenance of Military Material*, 01 August 2018

DAFI 21-101, *Aircraft and Equipment Maintenance Management*, 15 January 2020

DAFI 36-2903, *Dress and Personal Appearance of Air Force Personnel*, 15 March 2021

DAFMAN 91-203, *AF Occupational Safety, Fire, and Health Standards*, 23 March 2022

DAFI 91-204, *Safety Investigations and Reports*, 09 March 2021

AFI 91-204_AFSOC Supplement, *Safety Investigations and Reports*, 12 December 2018

AFI 21-101_AFSOC Supplement, *Aircraft and Equipment Maintenance Management*, 16 January 2020

T.O. 00-35D-54, *USAF Deficiency Reporting, Investigation, and Resolution*, 15 April 2021

HFI 13-213, *Airfield Driving Program*, 14 August 2013

AFMAN 10-206 *Operational Reporting*, 18 June 2018

Prescribed Forms

None

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AFI—Air Force Instruction

AFPD—Air Force Policy Directive

AFSOI—Air Force Special Operations Command Instruction

AGE—Aerospace Ground Equipment

FOD—Foreign Object Damage

FO—Foreign Object

DOP—Dropped Object Prevention

HFI—Hurlburt Field Instruction

TDY—Temporary Duty

TERMS

FO—Any substance, debris, or article alien to an area, vehicle, or system, which would potentially cause damage.

FOD—Any damage attributed to FO, which may degrade the required safety or performance characteristics of an aircraft, engine, support equipment, or component.

DOP—Any aircraft part, component, surface, or other item lost during aircrew operations (unless intentionally jettisoned) from engine start to engine shutdown.

Attachment 2**FOD WALK AREA OF RESPONSIBILITY****SIERRA NEVADA**

-Rows S-V including hangars 90800 & 90825

4th AMU

-Rows D-G including 90816

73rd AMU

-Rows L-N including hanger 90032 and flare ramp

1 SOMXS

-Fuel Cell- Rows B-C including hangar 90810 and ramp

-ISO- Inside hangar 90700 to include hangar doors tracks

-Fabrication & AR- All paved surfaces South, East, and West of Eason hangar (to include grassy areas)

-Fabrication & TA- Rows H-K

1 SOMUNS

-Building 90838, holding areas for Munitions and hot cargo spots 1-4 (see [Table A2.1](#))

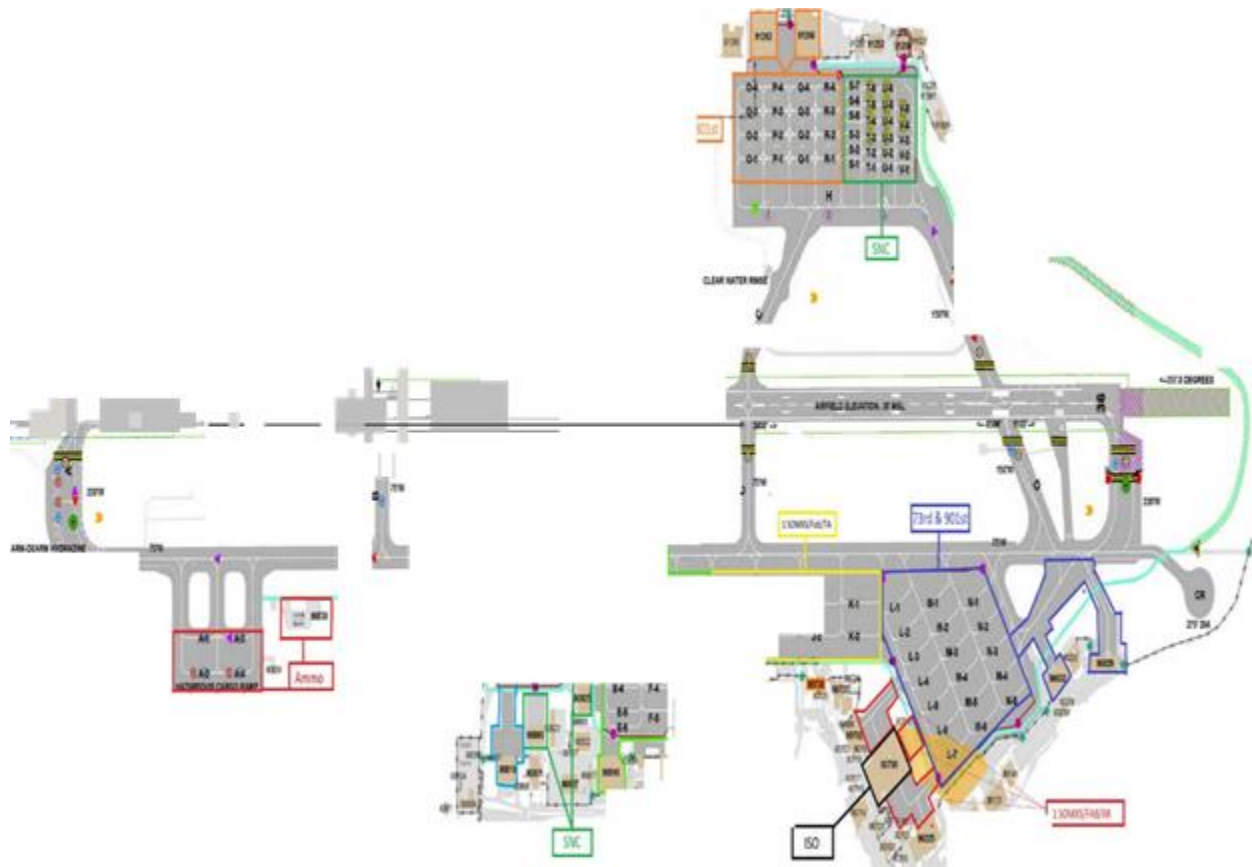
901 SOAMXS

-Rows L-N, and nose docks including flare ramp

801 SOAMXS

-Rows O-R including Hangars 91262 & 91266

FOD WALK-AREA OF RESPONSIBILITY



Attachment 4

1 SOMXG DROPPED OBJECT WORKSHEET

1 SOMXG DROPPED OBJECT WORKSHEET
(Ensure last page is signed and dated)

Fill in all required information. Forward the completed worksheet to the 1 SOW DOP Monitor or e-mail to ISOW.FOD.ORG@hurlburt.af.mil within 24 hours of incident. The DOP monitor will ensure the information is forwarded to AFSOC/A4.

1. Date of Incident or Date Discovered: _____ (mm/dd/yyyy) Time: _____
2. MDS: _____
3. Type Mission and Mission Profile: _____
4. Aircraft Tail Number: _____
5. Owning Organization and Base Name: _____
6. Origin of Sortie (takeoff base): _____
7. Discovery Location (if different than origin of sortie): _____
8. Geographical Location of Object (if known): _____
9. Item Description (from applicable IPB TO): _____
 Technical Order Number: _____
 Figure: _____ Index: _____
 Part Number: _____ Work Unit Code: _____
 Size: _____ Weight: _____
11. Date of Last HSC, ISO, PDM or Letter Check: _____ (mm/dd/yyyy)
12. Last Maintenance Performed in the Area: _____

 Last Maintenance Date: _____ (mm/dd/yyyy)
13. Investigation Findings (cause): _____

- Cost in Dollars: \$ _____ Repaired? Yes ☐ No ☐ Replaced? Yes ☐ No ☐
- Cost in Man-hours to repair: _____
- Total Cost: \$ _____

14. Action Taken to Prevent Future Occurrences: _____

15. Discrepancy Report Submitted? Yes ☐ No ☐ If Yes, DR#: _____

16. Unit Point of Contact (POC) Information:

First Name: _____ Last Name: _____

Telephone: _____

Email address: _____

17. Other Information / Comments: _____

18. Supervision Representative: _____

Date: _____ DSN: _____

19. QA Representative: _____

Date: _____ DSN: _____

20. DOP Representative: _____

Date: _____ DSN: _____

Aircraft Impounded? Yes ☐ No ☐

Photos taken of area? Yes ☐ No ☐

| Lost Item/Tool Worksheet | | | | | |
|--|---|---------------------------------------|------------------------|-----------------------------------|-------------|
| Date | Time | Time/Date Notified MOCC | Aircraft Serial Number | Organization | Work Center |
| CTK Number | | Description of Tool(s)/Object(s) Lost | | AFTO 781A | |
| Search Start Time | | | | Page | Block |
| | | | | Search Stop Time | |
| Work being performed when item(s) was/were lost or noticed missing: | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Was/Were item(s) used by individual(s): YES <input type="checkbox"/> NO <input type="checkbox"/> N/A (Only if lost object) | | | | | |
| | | | | | |
| Name(s) of individual(s) responsible for lost item(s): | | | | | |
| | | | | | |
| | | | | | |
| Areas checked for the missing item(s): | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Names of individuals who conducted search: | | | | | |
| | | | | | |
| | | | | | |
| Names of individuals who conducted secondary search: | | | | | |
| | | | | | |
| | | | | | |
| Was the item(s) found? YES <input type="checkbox"/> NO <input type="checkbox"/> If found give a description of location. | | | | | |
| | | | | | |
| | | | | | |
| Supervisory Review of Area(s) Searched | | | | | |
| Unit/Shop | Shift Supervisor (print name and date) : | | | Signature | |
| Unit | Supervision or OIC (print name and date) : | | | Signature | |
| Authorization to Discontinue Search and Release End Item | | | | | |
| Unit | Squadron Maintenance Operations Officer or Squadron Superintendent (print name and date): | | | Signature | |
| Aircraft Impound Information | | | | | |
| Was Aircraft Impounded? YES <input type="checkbox"/> NO <input type="checkbox"/> | | | | Date and Time of Impound: | |
| Print Name of Impound Official: | | | | Impound Checklist on Page? (781A) | |
| Aircraft Released by Maintenance Group Commander or Designee (print name and date): | | | | Signature | |

1SOMXG Lost Tool Worksheet 20140915

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Page 1 of 2

Please direct any questions/concerns to the Lost Tool Monitor at 884-1312 // Please forward copy to 1SOW.FOD.ORG@hurlburt.af.mil

| Lost Item/Tool Worksheet | | | | | |
|--|---|---------------------------------------|-----------------------------------|------------------|-------------|
| Date | Time | Time/Date Notified MOCC | Aircraft Serial Number | Organization | Work Center |
| CTK Number | | Description of Tool(s)/Object(s) Lost | | AFTO 781A | |
| Search Start Time | | | | Page | Block |
| | | | | Search Stop Time | |
| Work being performed when item(s) was/were lost or noticed missing: | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Was/Were item(s) used by individual(s): YES <input type="checkbox"/> NO <input type="checkbox"/> N/A (Only If lost object) | | | | | |
| | | | | | |
| Name(s) of individual(s) responsible for lost item(s): | | | | | |
| | | | | | |
| | | | | | |
| Areas checked for the missing item(s): | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Names of individuals who conducted search: | | | | | |
| | | | | | |
| | | | | | |
| Names of individuals who conducted secondary search: | | | | | |
| | | | | | |
| | | | | | |
| Was the item(s) found? YES <input type="checkbox"/> NO <input type="checkbox"/> If found give a description of location. | | | | | |
| | | | | | |
| | | | | | |
| Supervisory Review of Area(s) Searched | | | | | |
| Unit/Shop | Shift Supervisor (print name and date) : | | | Signature | |
| Unit | Supervision or OIC (print name and date) : | | | Signature | |
| Authorization to Discontinue Search and Release End Item | | | | | |
| Unit | Squadron Maintenance Operations Officer or Squadron Superintendent (print name and date): | | | Signature | |
| Aircraft Impound Information | | | | | |
| Was Aircraft Impounded? YES <input type="checkbox"/> NO <input type="checkbox"/> | | | Date and Time of Impound: | | |
| Print Name of Impound Official: | | | Impound Checklist on Page? (781A) | | |
| Aircraft Released by Maintenance Group Commander or Designee (print name and date): | | | Signature | | |

1SOMXG Lost Tool Worksheet 20140915

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Page 1 of 2

Please direct any questions/concerns to the Lost Tool Monitor at 884-1312 // Please forward copy to 1SOW.FOD.ORG@hurlburt.af.mil

| Recovered Item/Tool Worksheet (to be filled out only if tool is found at a later date) | | | |
|--|--|-------------------------|-----------|
| Date | Time | Time/Date Notified MOCC | |
| Brief description where the item(s) was/were found. | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Supervision notified of found tool/object | | | |
| Unit/Shop | Support Supervisor (print name and date) : | | Signature |
| Unit | Supervision or OIC (print name and date) : | | Signature |

1SOMXG Lost Tool Worksheet 20140915

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Page 2 of 2

Please direct any questions/concerns to the Lost Tool Monitor at 884-1312 // Please forward copy to 1SOW.FOD.ORG@hurliburt.af.mil

