

**BY ORDER OF THE COMMANDER
TRAVIS AIR FORCE BASE (AMC)**

**TRAVIS AIR FORCE BASE
INSTRUCTION**



21-106

19 AUGUST 2019

Maintenance

**FOREIGN OBJECT
DAMAGE/DROPPED OBJECT
PREVENTION (FOD/DOP) PROGRAM**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFD 21-1, *Air and Space Maintenance*, AFI 21-101 AMCSUP1, *Aircraft and Equipment Maintenance Management* and standardizes procedures for implementing the Foreign Object Damage (FOD) and Dropped Object Prevention Program (DOPP). This instruction pertains to all personnel assigned or attached to Travis Air Force Base. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through Major Command (MAJCOM) publications/forms managers. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.my.af.mil/gcssaf61a/afirms/afirms/>. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. Major changes include removing duplicate instructions listed in AFI21-101 AMCSUP1 **Chapter 11.8 and 11.9** and AFI 91-204, clarifying FOD walk areas of responsibility, and combining numerous sections to streamline and remove confusion on responsibilities.

1. Wing FOD/DOPP Monitor Responsibilities.

- 1.1. Submit final investigation package to 60 MXG Supervision for approval prior to HQ AMC submittal.
- 1.2. Prepare and present a FOD/DOPP summary during quarterly FOD/DOPP prevention committee meetings.

2. MX Group Commander FOD/DOPP Responsibilities.

- 2.1. Ensure all units which service, or maintain aircraft develop a FOD/DOPP program.
- 2.2. Review and approve all FOD/DOPP reports before they are sent to the HQ AMC managers.

3. Maintenance Operations Center (MOC) Responsibilities for FOD/DO Incidents.

- 3.1. MOC shall notify the 60 MXG/CC and 60 MXG Quality Assurance (60 MXG/MXQA) of all FOD/DO incidents.
- 3.2. MOC will dispatch 60 MXG/MXQA to take pictures if the damage is determined to be a result from FOD/DO. Pictures will be taken before any repairs (i.e. blade blending) can begin.
- 3.3. Pictures will be e-mailed to the following offices: 60 MXG/CC; 60MXG/CD; 60 MXG/CCC; 60AMW/SEF; 60 MOS MOC1; 60 MXG QA Members; and affected squadron supervision distribution listings.
- 3.4. MOC shall run Quick Reaction Checklist (QRC) #209 (Dropped Object / Foreign Object Damage) and provide copies of all information to the Wing FOD/DOPP Monitor within 8 hours.

4. Squadron Commander FOD Responsibilities.

- 4.1. Squadron commanders of maintenance, operations, and base support squadrons whose personnel perform duties in, on, or around aircraft, munitions, aerospace ground equipment (AGE), or components thereof will appoint, in writing, a squadron FOD/DOPP Monitor and forward the appointment letter to the Wing FOD/DOPP

4.1.1. Monitor. (Wing FOD/DOPP Monitor organizational email: Travis.FOD.DOPP@us.af.mil)

- 4.2. Ensures procedures for reporting FOD incidents using 60 AMW IMT 511, *Foreign Object Damage/Dropped Object Report*, for FOD incidents occurring away from Travis AFB are completed In Accordance With (IAW) TAFBI 21-106 **Paragraph 11**.
- 4.3. Ensure personnel receive both initial and annual refresher FOD/DOPP training.

4.4. Ensure that prior to flight crew arrival, a FOD inspection is performed in the flight decks of all aircraft scheduled for flight.

5. Squadron FOD Monitor Responsibilities.

5.1. Serves as the focal point for FOD prevention, investigation, and reporting.

5.2. Organizes, conducts, and documents each FOD walk the squadron participates in, ensuring sufficient personnel participate to adequately cover the assigned inspection area.

5.3. Ensures personnel participating in FOD walks have the appropriate personal protective equipment and have a restricted area badge or are escorted while on the flightline.

5.4. Notifies the Wing FOD Monitor and 60 MXG Quality Assurance when scheduled FOD walks will not be conducted as scheduled. Notification must include a justification and date/time the FOD walk has been rescheduled to.

5.5. Ensures squadron Maintenance Operations Officer or Maintenance Superintendent signs all 60 AMW 511s prior to forwarding them to the Wing FOD/DOPP Monitor.

6. FOD Prevention Requirements.

6.1. Restricted area badges and any other passes or badges will be secured with a subdued non-metallic breakaway release cord or plastic armband when worn on the flightline.

6.2. Restricted area badges will be removed when performing intake/inlet/exhaust inspections if personnel physically enter these areas.

6.3. Metal insignias/badges will not be worn on the flightline.

6.4. Wigs, hairpieces, metal hair fasteners, earrings, rings, necklaces, bracelets, or any other jewelry items are not authorized to be worn on the flightline.

6.5. Escorts of visiting personnel will ensure FOD prevention measures are taken.

6.6. Personal tools are not authorized on the flightline or in any maintenance area.

6.7. All personnel are responsible for the removal of Foreign Objects (FO), if volume exceeds the finder's removal capabilities, notify AMOPS and request a sweeper be dispatched to clean the area. Note: MXG personnel utilize MOC to coordinate with AMOPS.

6.8. Personnel performing any type of activity, operation or maintenance in, on, or around aircraft, munitions, aerospace ground equipment, or components thereof will practice good housekeeping and ensure all trash, loose hardware, and other FO are removed when the activity is complete. Remove all FO from Composite Tool Kits (CTKs) after completion of maintenance.

6.8.1. Keep loose hardware secured at all times. Whenever any panel or component is being removed, store all screws/fasteners in screw bags and attach directly to each panel/component. Ensure the aircraft serial number, panel number (component serial number), and quantities are identified on the bag. Doors and panels that cannot be physically removed from the aircraft will have the screw bags attached through a screw hole so as to be visible to all personnel. Prior to installing any door or panel, all maintenance personnel will complete a visual FOD inspection. Ensure all work areas are cleaned upon task completion or at the end of work shift. All metal shavings, lock wire,

tie wraps, rivets, excess sealant, etc., are to be removed and disposed of in the nearest FOD container. Components removed to facilitate other maintenance (FOM), awaiting parts (AWP), or awaiting maintenance (AWM), will have all fasteners/screws etc., removed and stored in the tail number bins (TNBs).

7. Jet Engine FOD Prevention.

7.1. When any discrepancy is discovered that requires engine blades to be blended, the individual that discovers the discrepancy will immediately notify the appropriate Production Superintendent and the MOC.

7.2. During engine intake maintenance personnel shall use rubber matting as required to protect the inlet. A separate Red X is required in the AF Form 781A, *Maintenance Discrepancy and Work Document*, when the inlet mat is installed.

7.3. Following engine intake maintenance, ensure tool and FO/FOD inspections are conducted. A tool and FOD check discrepancy shall be entered as a Red X in the AF Form 781A which will be signed off prior to engine operation.

8. Vehicle and Equipment FOD Prevention Requirements

8.1. Vehicle operators are responsible for monitoring and emptying the FOD container prior to returning the vehicle to the owning work-center.

8.2. Personnel entering the aircraft parking ramp in vehicles from unpaved roads or surfaces shall stop and check vehicle tires for rocks or other types of FO before entering the aircraft parking ramp. Temporary FOD checkpoints may be established with coordination from Airfield Management, Safety, 60 MXG Line Chief, Civil Engineering, and the FOD Monitor. All other FOD checks have been waived for Travis AFB. Any FO removed from vehicles tires will be disposed of in the vehicle's FOD container. During hours of darkness, personnel will use flashlights to perform FOD checks.

8.3. Powered and non-powered AGE operators are responsible for ensuring there is no FO after use, to include emptying any attached FOD containers.

8.4. Vehicle and equipment hardware pose a potential FO hazard (e.g. aerial work platform keys) and will be removed or attached with a securing device such as a lanyard. Each valve stem will be equipped with an approved valve stem cap to prevent dirt from entering the valve mechanism and to reduce the chance of leakage. The use of metal valve stem caps is not authorized. Metal caps will be disposed of and replaced with plastic caps.

9. Aircraft Towing FOD Prevention.

9.1. A FOD walk will be performed before and after an aircraft is taxied or towed on or off of a parking spot or into or out of a hangar.

10. Procedures for FOD/DO Incidents at Travis AFB.

10.1. In the event of a FOD/DO incident the Production Supervisor will run QRC #209, notify MOC to obtain a job control number, and MOC will dispatch QA for pictures prior to any repair.

10.1.1. The Production Supervisor will ensure the discrepancy, all evaluations, and repairs are documented in the AF Form 781A and notify Engine Management for any AFTO 95, *Significant Historical Data*, entries when necessary.

10.1.2. The Production Supervisor will ensure a 60 AMW IMT 511 is initiated and the squadron FOD/DOPP Monitor is notified.

10.2. Squadron FOD/DOPP Monitors are responsible for ensuring all required agencies are notified when a FOD/DO incident occurs on any assigned aircraft.

10.3. Squadron FOD/DOPP Monitor will conduct a preliminary investigation to include written statements from individuals involved. A 60 AMW IMT 511 will be utilized to provide Maintenance Supervision with preliminary investigation findings.

10.4. Squadron Maintenance Supervision will review the preliminary investigation findings and direct the squadron FOD/DOPP Monitor to forward all findings to the Wing FOD Monitor within 24 hours of the incident. Refer to [Paragraph 1.1](#) and [2.2](#) of TAFBI 21-106.

10.5. Finalized DOPP information will be provided to the Wing FOD/DOPP Monitor within 2 duty days.

10.6. Maintenance Supervision will ensure the squadron FOD/DOPP Monitor provides a follow-up report every 30 days until close out for all FOD incidents to the Wing FOD/DOPP Monitor.

11. Procedures for FOD/DO Incidents Away From Travis AFB.

11.1. The flying crew chief (FCC) or crew member (if no FCC is present) will use the 60 AMW IMT 511 to document as much information about the incident as possible. Provide photographs if possible.

11.2. The FCC or crew member will notify Travis AFB MOC as soon as possible, to include faxing or e-mailing the completed 60 AMW IMT 511.

11.3. The FCC or crew member will provide updates to the MOC with all new information regarding the FOD investigation.

12. Procedures for FOD/DO Incidents Involving Transient Aircraft.

12.1. For military aircraft.

12.1.1. The on-shift Transient Alert (TA) supervisor will notify the MOC to obtain a job control number and ensure the FOD/DO incident is documented in the AF Form 781A.

12.1.2. TA will complete a 60 AMW IMT 511 and email or provide a hard copy to a 60 MXG Contracting Officer's Representative (COR) and the Wing FOD/DOPP Monitor within 8 hours of discovering the FOD/DO.

12.1.3. The Wing FOD/DOPP Monitor will review the 60 AMW IMT 511 for accuracy and brief the 60 MXG/CC before forwarding the FOD/DO report to the aircraft's home station.

12.2. For commercial/contract aircraft, the on-shift TA supervisor will notify the MOC and the owning organization.

13. FOD Walks and Areas of Responsibility.

13.1. Each flying, MXG Unit, and VQ3 Det. will conduct a minimum of one FOD walk per week. Said units have a set day of the week, time of the day, and area of responsibility for FOD walks. Any changes to the day, time, or area of responsibility can only be changed with the concurrence of the Wing FOD Monitor. FOD walks will be completed in a timely manner with allowance to the aircraft flying schedule for that day. The schedule for each squadron's FOD walk is located on the 60 MXG QA

13.1.1. SharePoint at the following link: <https://eim2.amc.af.mil/org/60mxg/qa/foddop/default.aspx>

13.2. Airfield Managers are responsible for controlled movement area (CMA) FOD inspections.

13.3. FOD walks will be accomplished during daylight hours and no later than 1700 hours on the assigned day.

13.4. The FOD Boss may be used in conjunction with flightline sweeper operation to supplement FOD walks in all areas where aircraft maintenance is performed.

Table 1. Flightline FOD Walk Areas of Responsibility.

Squadron	Location	Squadron	Location
60 MXO	300 Ramp	60 AMXS, & 22 AS	400 Ramp & Spots 601-608
60 APS	Hotel Ramp & 900 Ramp	60 MXS	800 Ramp, Taxi Way Lima from Bldg. 810 to Taxi Way Nancy including Spots 718 & 719, & the Flightline side of P14
660 AMXS, 6 & 9 ARS	200 Ramp	VQ3 Detachment	Sugar Ramp
860 AMXS & 21 AS	500 Ramp & Spots 609- 613		

14. 60 AMW FOD Prevention Recognition Programs.

14.1. The Golden Bolt.

14.1.1. The Golden Bolt Award is intended to increase awareness of FO. A conspicuous object, clearly marked as the "golden bolt" will be placed in the maintenance areas.

14.1.2. Individuals who find the golden bolt will return it to the Wing FOD Monitor and are eligible to receive the Golden Bolt Award.

15. FOD/DOPP Committee Meeting.

15.1. The FOD/DOPP committee meeting can be held in person or virtually via e-mail at the discretion of the committee chairperson.

15.1.1. The 60 AMW/CV will designate minimum attendee representation.

16. Wing DOPP Monitor Responsibilities.

16.1. Provide a preliminary briefing of DO incidents to the 60 MXG/CC as soon as possible.

16.2. Ensure approval by the 60 MXG Supervision of the final report on the DO prior to being forwarded to the HQ AMC DOPP manager.

17. Squadron DOPP Monitor Responsibilities.

17.1. The squadron DOPP Monitor helps the Wing DOPP Monitor perform investigations, collect data, and recommend preventative measures to squadron and group commanders.

17.1.1. Ensures appropriate squadron Air Force Specialty Code submits a deficiency report for all DO categorized as a Material DO IAW TO 00-35D-54 within 2 days of DO.

17.2. Squadron supervision will recommend preventative measures to squadron/group commander and the Wing DOPP Monitor using 60 AMW IMT 511.

ZACHERY B. JIRON, Colonel, USAF
Vice Commander, 60TH Air Mobility Wing

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

AFPD 21-1, *Air and Space Maintenance, 1 August 2018*

AFI 21-101, *Aircraft and Equipment Maintenance Management, 31 May 2018*

AFI 21-101 AMCSUP, *Aircraft and Equipment Maintenance Management, 11 July 2018*

AFI 91-204, *Safety Investigations and Reports, 27 April 2018*

Prescribed Form

60 AMW IMT 511, *Foreign Object (FOD)/Dropped Object*

60 AMW 512, *Government Property Damage/Cost Worksheet Aircraft Mishap Incident*

Adopted Forms

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

AFTO Form 95, *Significant Historical Data*

AF Form 847, *Recommendation for Change of Publication.*

Abbreviations and Acronyms

CMA—Controlled movement area

CTK—Composite Tool Kit

DO—Dropped Object

DOP—Dropped Object Prevention

DOPP—Dropped Object Prevention Program

E—Exhaust

FCC—Flying Crew Chief

FO—Foreign Object

FOD—Foreign Object Damage

I—Inlet

IAW—In Accordance With

MAJCOM—Major Command

MOC—Maintenance Operations Center

MXG/CC—Maintenance Group Commander

OPR—Office of Primary Responsibility

QA—Quality Assurance

QRC—Quick Reaction Checklist

RDS—Records Disposition Schedule

TA—Transient Alert

AMW/CV—Wing Vice Commander