

17 OCTOBER 2003

Maintenance

**FOREIGN OBJECT DAMAGE (FOD)/
DROPPED OBJECT PREVENTION
PROGRAMS (DOPP)**



COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

NOTICE: This publication is available digitally on the AFDPO WWW site at:
<http://www.e-publishing.af.mil>

OPR: 92 MXG/MXQ
(TSgt Thomas A. Loggains)

Certified by: 92 MXG/CC
(Colonel Craig A. O'Neal)
Pages: 9
Distribution: F

This instruction replaces 92d Logistics Group (92 LG) Operating Instruction (OI) 21-4, *FOD Reporting* and 92 LG OI 21-3, *DOPP* and establishes policies and outlines reporting procedures for the FOD Prevention Program and the DOPP for the 92d Air Refueling Wing (92 ARW), 141st Air Refueling Wing (ANG), and associate units. This instruction explains responsibilities pertaining to all personnel who perform maintenance, operations, and base support functions that work in and around, or drive through flight line and industrial aircraft maintenance areas. Ensure all records created by this instruction are maintained and disposed of IAW AFMAN 37-139, *Records Disposition Schedule*.

1. FOD Prevention Program Responsibilities.

- 1.1. All commanders will ensure compliance with this instruction and establish guidance, as required, so every precaution is taken to prevent FOD. As applicable, organizations must ensure newly assigned personnel receive a FOD prevention orientation and familiarization briefing during in processing.
- 1.2. The 92 ARW Vice Commander (CV) is responsible for the FOD program including all FOD prevention practices and procedures. The wing FOD monitor will manage the wing FOD Prevention Program and is assigned to the 92d Maintenance Group Quality Assurance (92 MXG/MXQ) section.
- 1.3. The 92d Operations Support Squadron (92 OSS) Commander is responsible for ensuring aircraft pavement surfaces are monitored and all maintenance and cleanliness concerns are coordinated with the 92d Civil Engineer Squadron.
- 1.4. The 92 OSS Commander, 92d Logistics Readiness Squadron Commander (92 LRS/CC), 92d Aircraft Maintenance Squadron Commander (92 AMXS/CC), 92d Maintenance Squadron Commander (92 MXS/CC), 92d Air Refueling Squadron Commander (92 ARS/CC), 93d Air Refueling Squadron Commander (93 ARS/CC), 96th Air Refueling Squadron Commander (96 ARS/CC), 97th Air Refueling Squadron Commander (97 ARS/CC), 92d Civil Engineer Squadron Commander (92

CES/CC), 92d Security Forces Squadron Commander (92 SFS/CC), 36th Rescue Flight Commander (36 RQS/CC), 2d Support Squadron Commander (2 SS/CC), 141st Maintenance Group Commander (141 MXG/CC), and any contract manager will:

1.4.1. Appoint a unit FOD monitor and alternate. A memo of appointment will be forwarded to the wing FOD monitor (92 MXG/MXQP 301 West Arnold Suite 213 Fairchild AFB WA 99011).

1.4.2. Ensure all squadron or contract maintenance personnel are made aware of this instruction and comply with the provisions herein.

1.5. The 92d Contracting Squadron Commander is responsible for including FOD requirements in all contracts affecting the flight line, runway and any industrial aircraft maintenance area. Contract maintenance personnel are responsible for complying with standard practice instructions that establish their FOD prevention programs and procedures for reporting FOD incidents.

1.6. Unit FOD monitors:

1.6.1. Manage the squadron and/or contract FOD prevention programs. Ensure ramps and areas of responsibility are policed for foreign objects. (See [Attachment 2](#))

1.6.2. Obtain and maintain the FOD Prevention Program bulletin board for their respective unit.

1.6.3. Attend and participate at wing FOD Prevention Committee meetings.

1.6.4. Ensure all publicity material concerning FOD (i.e. FOD Prevention Program bulletin board information, posters, committee minutes, cross-tells, etc.) are disseminated throughout areas of responsibility.

1.7. It is the responsibility of all personnel to ensure FOD prevention is practiced during all aspects of maintenance, flight operations, and supporting functions.

1.8. The wing FOD monitor will implement FOD recognition programs (i.e. Golden Bolt program, FOD poster contests, etc).

2. General FOD Prevention Practices.

2.1. The 92 MXG and the 36 RQF will conduct FOD walks during the morning on the first duty day of the week around flight line facilities, aircraft parking areas, and taxiways ([Attachment 2](#)). The 141 MXG will conduct FOD walks around flight line facilities, aircraft parking areas, and taxiways ([Attachment 2](#)) in accordance with 141 ARW Instruction 21-101, *Prevention Of Foreign Object Damage (FOD)*. Special emphasis will be put on aircraft grounding points. Production supervisors will notify their respective Maintenance Operation Center (MOC) of all FOD walk completion times. The MOC will document the information in the MOC events log for future reference.

2.1.1. FOD inspections of the parking stub and immediate area will be conducted before and after aircraft taxi, and prior to all aircraft tows. After all maintenance actions are complete and prior to leaving the work area, a FOD check will be completed and will include a consolidated tool kit inventory.

2.1.2. Contact the MOC or Base Operations for sweeper assistance to clean large areas/amounts of FOD.

2.1.3. At the discretion of wing leadership, base organizations will participate in mass FOD walks. Tasked organizations are required to supply all necessary resources to accomplish the FOD

walk. Airfield Management will coordinate airfield closure and will provide personnel to ensure the airfield remains safe for the duration of the FOD walk.

2.2. All aircraft/engine FOD inspections will be entered on a Red X in the AFTO Form 781A, **Maintenance Discrepancy and Work Document**, and automated forms.

2.2.1. Prior to installing panels or secondary structures, a FOD check of the area will be completed. Prior to flight, a FOD check of the aircraft flight deck will be completed.

2.3. While maintenance is being performed on aircraft, uninstalled engines, and aerospace ground equipment, any openings, ports, lines, hoses, electrical connections, and ducts will be properly plugged, covered, or capped to prevent foreign objects from entering these systems.

2.4. Hats or headgear required as personal protective equipment during maintenance, servicing, or as required for personnel carrying arms are authorized on the flight line or in industrial aircraft maintenance areas. Under no circumstances will they be worn within 50 feet of an aircraft with operating engines.

2.4.1. Wear of the seasonal watch cap is authorized on the flight line or in industrial aircraft maintenance areas. Wear of the seasonal watch cap will comply with AFI 36-2903, *Dress and Personal Appearance of Air Force Personnel*. Ear defenders or ground communication headsets will be worn over the watch cap when within 50 feet of any operating aircraft engine.

2.4.2. Items such as wigs, hair fasteners, and earrings constructed of metal, plastic, or leather will not be worn by any personnel on the flight line or in industrial aircraft maintenance areas involved in aircraft, component, or alternate mission equipment maintenance.

2.5. For grounding cables, two allen-head screws, or equivalent, will be utilized to secure the cable to the grounding clip. Fill screw holes with sealant to prevent screws from backing out. Unused screws will be removed.

2.6. Restricted area badges, exercise evaluation team badges, and any other badge worn on the flight line having a metal clip presents a FOD hazard.

2.6.1. If a metal clip is attached to any badge worn on the flight line, a nylon/cotton cord must be installed through the hole and attached to the uniform or the badge must be secured within a plastic armband. Armbands will be worn on the upper part of the arm between the shoulder and the elbow. Neck pouches are not authorized.

2.6.2. Badges will be stowed anytime personnel are performing maintenance in engine inlet/exhaust areas or working around aircraft with engines operating.

2.7. FOD incidents leading to aircraft engine blade blending will be reported to the wing FOD monitor prior to the blending taking place. Engine personnel must ensure the repaired FOD is documented in the engine AFTO Form 95, **Significant Historical Data**, IAW T.O. 00-20-1, *Aerospace Equipment Maintenance General Policy and Procedures*.

2.8. All vehicles entering the flight line or industrial aircraft maintenance areas, including the street side entrances to Hangar 2050, will stop and perform an inspection of their vehicle tires for FOD prior to entering.

2.9. All vehicles normally driven on the flight line will be equipped with secured and lidded foreign object containers stenciled with the word FOD in contrasting letters no smaller than two inches.

2.10. Personal tools are not authorized on the flight line or in any industrial aircraft maintenance areas.

2.11. All unit issued tools and personal protective items will be permanently engraved or marked with the individual's last name and unit. Those individuals possessing an employee number (maintenance personnel) will also include this number on the item.

2.11.1. Aircrew members must account for all equipment and personal items before and after each flight. Ensure that any items lost during flight are documented in the aircraft AFTO Form 781A and notify the Aircraft Maintenance Unit production supervisor of the lost item.

2.12. The wing FOD monitor will develop procedures to document and perform spot checks of selected areas each week.

3. Lost Items/Tools.

3.1. In all cases of lost items/tools, the owning maintenance squadron will immediately ground the aircraft or equipment involved in the loss by placing a Red X in the AFTO Form 781A or the applicable equipment forms. The owning maintenance squadron will immediately contact the MOC, who will accomplish the appropriate notification checklist.

3.2. The unit responsible for the lost item/tool will provide personnel and complete a thorough visual search of the flight deck, cargo compartment, and surrounding aircraft area with flashlights, mirrors, etc. as necessary until all possible locations of the item have been exhausted.

3.2.1. (92 ARW only) Search and reporting procedures for lost items/tools will be followed IAW FAFBI 21-105, *Consolidated Tool Kit (CTK) Management and Tool Accountability*.

3.2.2. (141 ARW only) Search and reporting procedures for lost items/tools will be followed IAW 141 ARW Instruction 21-101, *Prevention Of Foreign Object Damage (FOD)*.

3.2.3. (36 RQF only) Search and reporting procedures for lost items/tools will be followed IAW AFI 21-101_AETC Sup 1, *Aerospace Equipment Maintenance Management* and Sikorsky Program Policy Instruction 21-2, *Tool Management Program*.

4. FOD Incident And Reporting Procedures.

4.1. In the event of a FOD incident, the following will apply:

4.1.1. The responsible Aircraft Maintenance Unit (AMU) production supervisor will notify the MOC who will accomplish the appropriate notification checklist.

4.1.2. The responsible AMU production supervisor will ensure a FAFB Form 253, **Foreign Object Damage Worksheet** is filled out and forward it to 92 MXG/MXQ.

4.1.3. With the assistance of a senior maintenance representative from the affected AMU/squadron and Quality Assurance, Wing Safety will conduct an investigation of the FOD incident IAW AFI 91-204, *Safety Investigations and Reports*.

4.1.4. If FOD is discovered on a transient aircraft, it will be reported using same procedures as in [4.1.1.](#) through [4.1.3.](#) and Quality Assurance will send a copy of the FAFB Form 253 to the owning organization's Quality Assurance office.

4.1.5. The wing FOD monitor will submit a FOD report electronically to HQ AMC/LGMJP within 24 hours and maintain a copy of the completed report.

4.2. In the event of a bird/wildlife strike found by maintenance personnel, the following will apply:

4.2.1. The responsible AMU production supervisor will notify the MOC who will accomplish the appropriate notification checklist.

4.2.2. The responsible AMU production supervisor will ensure a FAFB Form 254, **Maintenance Personnel Bird Strike Report** is filled out (with the assistance of Quality Assurance if required) and forwarded to QA with a sample of the animal remains (e.g. feathers).

4.2.3. The wing FOD monitor will ensure the report and remains are forwarded to Wing Safety.

4.2.4. Wing Safety will do bird strike reporting as required in AFI 91-204, *Safety Investigations and Reports*, using information from aircrews, the FAFB Form 254, and any subsequent investigations. Wing Safety will be responsible for assigning the appropriate mishap classification and reporting it.

5. General DOPP Practices.

5.1. Maintenance personnel who open aircraft panels/doors will inspect all fasteners, latches, and receptacles for serviceability. Upon installation/closure of aircraft doors/panels, personnel will ensure all fastening devices are properly installed. All panels/doors will be inspected for serviceability IAW 1C-135A-6WC-1, *Preflight/Postflight/Home Station Check Inspection Work Cards*, and T.O. 1C-135A-6WC-2, *Periodic Inspection Work Cards*, and secure installation. All discrepancies pertaining to defective fastening devices and panels/doors will be entered in the AFTO Form 781A and automated aircraft forms.

5.2. Whenever an aircraft panel or door is opened or removed for maintenance/inspections, document the AFTO Form 781A using a Red X symbol. If panels are part of a technical order procedure for a Red X discrepancy, then no additional AFTO Form 781A discrepancy is required for panel removal. **EXCEPTION:** This does not include frequently opened panels or access doors, e.g. crew entry doors, cargo doors, external power panels, landing gear doors, etc.

5.2.1. (92 ARW only) Units have the option of using locally developed lists to record the removal of panels required by an inspection as long as an entry is made in the AFTO Form 781A that reflects its use. This will preclude a separate Red X entry for each panel. The only locally developed lists authorized for use by the 92 MXG are for aircraft isochronal inspections, PDM extension inspections, and 600 hour overfly inspections. Any other list must be approved by the 92 MXG/CC prior to use.

5.3. Maintenance personnel will perform secondary structure/panel inspections prior to flight IAW AFI 21-101_AMCSUP 1, *Aerospace Equipment Maintenance Management*.

5.4. Maintenance personnel will perform and document a pre-flight and post-flight boom inspection for KC-10 refueling missions IAW T.O. 1C-135A-6WC-1.

6. Dropped Object Inspection And Reporting Procedures.

6.1. A dropped object is considered any aircraft part, component, surface or other item lost during aircrew operations.

6.2. In the event of a dropped object, the following will apply:

6.2.1. The responsible AMU production supervisor will notify the MOC who will accomplish the appropriate notification checklist.

6.2.2. The affected AMU will complete all sections of FAFB Form 255, **Dropped Object Report**, including a probable cause of the dropped object and the actions taken to prevent recurrence. The completed report will be forwarded with a G081 maintenance history report to 92 MXG/MXQ within 12 hours.

6.2.3. The DOPP monitor (92 MXG/MXQP) will investigate each dropped object and use the investigation findings and the FAFB 255 to aid in filling out the final report. After receiving 92 MXG/CC approval, the DOPP monitor will send a detailed report to HQ AMC/LGMMP (402 Scott Drive, Scott AFB IL 62225) within three duty days of the date of discovery.

7. Foreign Object Damage/Dropped Object Prevention Committee.

7.1. The Fairchild AFB FOD/DOP Prevention Committee will meet in the wing conference room on the second Wednesday of the first month of each quarter. The 92 ARW/CV is the committee chairperson. The 92 MXG/CC will chair the meeting in the absence of the 92 ARW/CV and is the office of primary responsibility for the DOPP. The following personnel must attend:

7.1.1. Chairperson and voting members: 92 ARW/CV, 92 MXG/CC, 92d Mission Support Group Commander, 92 Medical Group Commander, 92 Operations Group Commander and 141 MXG/CC.

7.1.2. Non-voting members: 92d Air Refueling Wing Safety, 92 OSS/CC, 92 AMXS/CC, 92 MXS/CC, 36 RQF/CC, 92 OSS Airfield Manager, 92 AMXS Maintenance Supervision, 92 AMXS AMU Supervision, 92 MXS Maintenance Supervision, 92 AMXS FOD Monitor, 92 MXS FOD Monitor, 92 LRS FOD Monitor, 92 CES FOD Monitor, 92 SFS FOD Monitor, 92 ARS FOD Monitor, 93 ARS FOD Monitor, 96 ARS FOD Monitor, 97 ARS FOD Monitor, 36 RQF FOD Monitor, 2 SS FOD Monitor and 141 LG FOD Monitor.

8. FOD Prevention Awards:

8.1. Golden Bolt: To help increase FOD prevention awareness, the wing FOD monitor or a representative will place a golden bolt in or near the flight line or any industrial aircraft maintenance area periodically during the quarter. The bolt will be left for a reasonable amount of time and if it is not discovered it will be relocated to another area.

8.1.1. The individuals who find the golden bolt and return it to 92d Maintenance Group Quality Assurance Office will be recognized during the quarterly FOD/DOP Prevention Committee meeting. Group commanders may also choose to recognize the individuals.

8.2. Quarterly FOD Poster Contest: Anyone may submit a FOD prevention poster. Each poster will be judged for originality, visual impact and how effectively it portrays a FOD prevention idea. Posters may be hand drawn or computer generated in black and white or color. It must fit on standard 8 1/2 X 11" paper, not violate copyright law and not have offensive words or pictures.

8.2.1. Entries shall be submitted to the wing FOD monitor (92 MXG/MXQP) by the last Friday of each quarter.

8.2.2. The voting members of the FOD/DOP Prevention Committee will pick the winning poster prior to the quarterly committee meeting.

8.2.3. Poster contest awards will be presented to the winner during the quarterly FOD/DOP prevention committee meeting.

ANTHONY M. MAUER, Colonel, USAF
Commander

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

AFI 21-101, *Aerospace Equipment Maintenance Management*

AFI 36-2903, *Dress and Personal Appearance of Air Force Personnel*

AFI 91-204, *Safety Investigations and Reports*

AFMAN 37-139, *Records Disposition Schedule*

AFI 21-101_AMCSUP 1, *Aerospace Equipment Maintenance Management*

AFI 21-101_AETC Sup 1, *Aerospace Equipment Maintenance Management*

FAFBI 21-105, *Consolidated Tool Kit (CTK) Management and Tool Accountability*

Sikorsky Program Policy Instruction 21-2, *Tool Management Program*

T.O. 1C-135A-6WC-1, *Preflight/Postflight/Home Station Check Inspection Work Cards*, March 1, 2000

T.O. 1C-135A-6WC-2, *Periodic Inspection work Cards*, March 1, 2003

T.O. 00-20-1, *Aerospace Equipment Maintenance General Policies and Procedures*, September 1, 2001

141 ARW Instruction 21-101, *Prevention Of Foreign Object Damage (FOD)*

Abbreviations and Acronyms

AMU—Aircraft Maintenance Unit

DOPP—Dropped Object Preventative Program

FOD—Foreign Object Damage

MOC—Maintenance Operation Center

Attachment 2

FAIRCHILD AFB FLIGHT LINE FOD WALK AREAS OF RESPONSIBILITY

