

**BY ORDER OF THE COMMANDER  
HEADQUARTERS 81ST TRAINING WING  
(AETC)**

**KEESLER AFB INSTRUCTION 21-103**

**17 DECEMBER 2012**



***Maintenance***

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

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements AFPD 21-1, *Air and Space Maintenance*. It establishes responsibilities and outlines procedures for the Foreign Object Damage (FOD) prevention Program and the Dropped Object Program (DOP). It expands on the procedures in AFI 21-101, *Aircraft and Equipment Maintenance Management*, and AETC Supplement 1, AFI 91-204, *Safety Investigations and Reports*, and AFOSH Standard 91-100, *Aircraft Flight Line-Ground Operations and Activities*. This instruction applies to all personnel assigned to Keesler AFB (KAFB), including maintenance/supply/transportation and contractors. All procedures contained in the aforementioned publications must also be adhered to. 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 dispose of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.my.af.mil/gcss-af61a/afirms/afirms>. Attachment 1 is a glossary of reference and supporting information. This instruction requires collecting and maintaining information protected by the Privacy Act of 1974 authorized by 10 U.S.C 8013, AFI 21-101, and AFI 36-2232, *Maintenance Training*.

## 1. PROGRAM MANAGEMENT.

1.1. The 81 TRW/CV serves chairperson of all FOD prevention committee meetings. The chairperson monitors all phases of the FOD prevention program implemented within the 81st Training Wing and 403d Wing and ensures all FOD incidents are investigated thoroughly and corrective action is taken. In the absence of the 81 TRW/CV, the 81 OSF/CC will chair the meeting. The 81 TRW FOD Prevention Manager will present the meeting agenda.

1.2. The 81 TRW Flight Safety is the OPR for all changes/waivers for this instruction and FOD/DOP program tasks required by AFI 21-101, *Aircraft and Equipment Maintenance Management* and AFI 21-101 AETC Supplement 1.

**2. FOD/DOP PROGRAM OBJECTIVES.** The objective of the FOD Prevention Program is to prevent foreign object damage to aircraft, aircraft systems, engines, tires, and Air Force support equipment/assets through the use of proper procedures, training, and reporting. The objective of the DOP is to prevent the inadvertent loss of aircraft items during flying operations through proper training and procedures.

**3. FOD PREVENTION MANAGER RESPONSIBILITIES.** The 81 TRW FOD Prevention Manager will:

3.1. Maintain a Wing FOD continuity book and/or database to record all FOD incidents.

3.2. Conduct annual FOD meetings with 81 OSF Airfield Management and Airfield Operations, maintenance and support commanders to discuss trends and related issues (including but not limited to FOD incidents and investigations, dropped objects, and lost tools/objects). Quarterly briefings are informational tools and feedback is encouraged. Additional meetings and/or briefings may be convened at the discretion of the 403 MXG CC/CV. Meetings will be conducted with unit/squadron FOD managers when deemed necessary to discuss trends/problems at unit level.

3.3. Squadrons / Contractors will conduct FOD prevention briefings for newly assigned personnel.

3.4. All units may maintain and administer the FOD awards/incentive program.

3.5. Monitor the 81 TRW's Dropped Object Program IAW AFI 21-101 and AETC Supplement 1, and this instruction.

3.6. Maintain a Lost Tool/Object continuity book and/or database to record all lost tools/objects.

## 4. ORGANIZATIONAL RESPONSIBILITIES.

4.1. Each organization/contractor will designate, in writing, a primary and alternate FOD Prevention Manager to be a member of the FOD committee. A copy of the appointment letter will be sent to the 81 TRW FOD Prevention Manager (81 Flight Safety). Appointment letters will be updated when changes occur. The designated manager or a designated representative will attend all FOD meetings.

4.2. Each organizations/contractors will be responsible for implementation of organizational procedures to ensure an effective FOD prevention program is established:

4.3. FOD prevention managers will develop, manage, and maintain the overall responsibility for their organization's FOD prevention program. Managers may be appointed for individual work centers. A copy of appointment letters will be sent to the 81 TRW FOD Prevention Manager. The designated unit FOD Manager will also maintain a copy.

4.4. All units with assigned aircraft will implement their own policies and procedures for their particular FOD inspections prior to engine maintenance runs or prior to aircraft engine starts IAW 21-101.

## **5. FOD REPORTING AND NOTIFICATION.**

5.1. The technician or supervisor who determines that a FOD or foreign object (FO) related incident has occurred will immediately notify the Production Superintendent or Maintenance Contractor Lead Supervisor who will notify the Maintenance Operations Center (MOC) and their respective squadron/unit FOD manager. FOD is not confined to engines only. Damage from foreign objects to tires and other aircraft systems are also classified as FOD incidents.

5.2. Air field Management will immediately notify the 81 TRW Command Post and 81 TRW Flight Safety (if applicable) of all aircraft/engine FOD incidents occurring on transient aircraft.

5.3. Unit Prevention Managers will report all FOD incidents to the 81 TRW Program Manager and 81 TRW/SE and/or 403 WG/SE as soon as damage is discovered, but no later than 24 hours after occurrence. AETC Form 199, *Foreign Object Damage (FOD) Incident Investigation* final reports will be completed and sent to AETC/LGMTP in a timely manner (no later than 60 days) after the incident.

5.4. All units deployed to Keesler with a FOD/DO incident will notify Airfield Management who will then notify the 81 TRW FOD Monitor.

**6. FOD INVESTIGATIONS.** All FOD incidents according to this instruction fall into two categories, major and minor, based on the severity of damage. If a minor FOD incident has the potential to become a major FOD incident, the FOD will be investigated as a major FOD incident until it is determined that damage severity and costs remain in the minor FOD category. A FOD-walk will be performed immediately following discovery of any engine FOD. An area 25 feet forward and 100 feet aft of the damaged engine should be thoroughly inspected for the presence of foreign objects or debris. Any objects or debris recovered will be turned over to the 81 TRW FOD Prevention Manager.

6.1. Minor FOD Investigations. A minor FOD incident is defined as, (FOD) to aircraft, aircraft systems, engines, tires, and Air Force support equipment/assets where the extent of damage is minor and cost to repair or replace parts (including labor cost) is less than \$20,000. The 81 TRW FOD Prevention Manager will be the focal point for all minor FOD investigations.

6.2. If minor engine FOD requires impoundment of the aircraft/engine, the 81 TRW FOD Prevention Manager will complete an initial FOD investigation checklist to gather as much information as possible that may have contributed to the FOD. The Aircraft Maintenance Unit (AMU) FOD monitor or designated representative will collect aircraft information, secure all aircraft and engine historical data and furnish it to the Unit FOD Prevention

Manager, FOD investigating officer/NCO, or designated MXG QA representative upon request. Every attempt will be made to determine the cause of the damage.

6.3. Major FOD Investigations. A major FOD incident is defined as, "Foreign Object Damage" (FOD) to aircraft, aircraft systems, engines, tires, and Air Force support equipment/assets where the extent of damage is extensive and cost to repair or replace parts (including labor cost) exceeds or has the potential to exceed \$20,000."

6.4. Major FOD investigations will be conducted IAW AFI 91-204, *Safety Investigations and Reports*.

## **7. OPERATIONAL REQUIREMENTS.**

7.1. All restricted area badges will be restrained by either a nylon cord, with break-away clip if worn around the neck, or an approved armband (ID badge holder) when worn in the restricted area of the airfield IAW AFI 31-101, *The Air Force Installation Security Program*.

7.2. Safety headgear will be allowed when required by safety directives, technical data, or contract. The 81 TRW FOD Prevention Manager will be notified of projects that require safety headgear to be worn on the airfield.

7.3. Head gear not required for aircraft ground or maintenance operations will not be worn on the flight line. Head covering may be worn for protection from extreme weather elements such as sun protection or for warmth during winter months as long as they observe specific aircraft Technical Order (TO) requirements for operating engines. Head gear worn on the flight line must be secured to the head using a chin strap or lanyard for safety.

7.4. Flight line personnel will not wear head gear with chin straps or lanyards while performing maintenance task.

7.5. The only exception to wearing hats on the flight line is for military protocol ( arrivals & departures of DV's) or Security Forces working on flight line. Security Forces or maintenance personnel will not wear head covering within 25 ft. of operating engines.

7.6. Personnel performing flight line entry control point (ECP) duties may wear this hat as necessary IAW Keesler Instruction 13-201, *Airfield Operations and Local Flying Procedures*.

7.7. After severe thunderstorms, high winds, or flooding, all units/squadrons, contractors and associate units will police their respective areas for loose debris and recover any missing aircraft covers and equipment.

## **8. FOD WALKS, FACILITIES, AND VEHICLES.**

8.1. As a minimum, a Supervisor or QAE (SNCO or civilian equivalent) from each unit or contractor and flying associate units assigned or deployed to KAFB will supervise FOD walks.

8.2. All maintenance units/contractors will conduct a FOD walk of their assigned aircraft parking or maintenance area at the beginning of each flying day, to include the area beyond the restricted area boundary to the start of the grass infield. Any FOD walks involving the controlled movement (CMA) area must require an individual obtaining two-way radio communication from the Control Tower prior to entering the CMA and maintain communication with the Control Tower IAW Keesler Instruction 13-201.

8.3. Vehicle, shop or hanger FOD collection containers will have two-inch minimum height letters "FOD" in contrasting colors. Vehicles containers will be lidded, with the lid secured to the container. Containers must be secured to the vehicle so as not to tip over.

8.4. All FOD collection containers will be emptied daily.

8.5. Vehicle operators are responsible for inspecting the interior, cargo bed area, and tires prior to use. Remove or secure all foreign material that could cause a potential FOD hazard.

8.6. A tire FOD check will be accomplished prior to all vehicles entering the airfield or returning to a paved surface from an unpaved surface IAW Keesler Instruction 13-202, *Airfield Vehicular Traffic*. **Exception:** *Emergency vehicles responding to actual emergencies*. Once the actual emergency is over, a tire FOD check will be accomplished prior to continuing on. **Note:** Vehicles drivers shall stop and perform a visual inspection of tires. Remove foreign materials (e.g., rocks, gravel, etc.) as applicable. Vehicle drivers shall not make a casual "glance" at the tires.

8.7. Tenant and associate flying units will establish FOD walk procedures. Special attention will be given to the aircraft grounding/mooring points to ensure they are clean and free of FOD and dirt.

8.8. Parking areas will be checked for FO prior to aircraft arrival and departures.

8.9. The Fire Department ramp will be FOD walked daily and/or after vehicle wash down. In addition, Fire Department vehicles will be inspected before entering the ramp, taxiway or runway from any FOD potential area except in emergency situations (i.e. ground emergencies or in-flight emergencies).

8.10. Building custodians will ensure adequate trash containers are available for FOD disposal within maintenance facilities.

8.11. Airfield vehicle operators will monitor the airfield/taxiways for presence of FOD or broken concrete and will remove all items immediately. Notify Airfield Management at 377-2120 if excessive debris is discovered. All vehicles returning to the airfield, runway, taxiways and aprons from unpaved surfaces will perform a FOD check IAW Keesler Instruction 13-202.

8.12. The Airfield Manager ensures all taxiways and runways are inspected daily and sweeping equipment is controlled. If an aircraft returns from flight with missing items, damaged or blown tires, Airfield Management will conduct an immediate special inspection of the runway and/or taxiways involved.

8.13. Unit vehicle control officers and noncommissioned officers (VCO/VCNCO) will periodically spot-check assigned vehicles to ensure operators are complying with the intent of the FOD prevention program.

8.14. At a minimum a FOD walk of the ramp and parking areas will be accomplished weekly. Unusual circumstances (i.e., hurricanes, air shows, weather etc.) may require an airfield FOD walk prior to resuming flight operations. **Note:** The airfield opens at 0800L Mon – Friday, including Compressed Work Schedule Fridays.

8.15. Each organization will have a POC assigned to coordinate with the 81 Security Forces and Airfield Management at 377-2120 prior to their scheduled FOD walk.

8.15.1. The FOD Walk POC will obtain Control Tower approval and stay in constant contact with the Control Tower IAW Keesler Instruction 13-201 if the FOD walk involves the CMA.

8.15.2. FOD Walk Supervisors, POCs and or representatives will stay in constant communication with all personnel to maintain safety until they have exited the airfield.

8.15.3. As a, incentive, the Golden Bolt may be used for FOD Walks and shall be labeled "Golden Bolt." The Golden Bolt will be in place on the airfield ramp prior to each FOD walk. Prior to existing the FOD Walk area, the POC will assure the bolt has been found or removed.

## **9. SPECIAL INTEREST ITEMS.**

9.1. Unit/squadron commanders, superintendents, flight chiefs, supervisors and contract managers/supervisors are responsible for FOD prevention within their areas of responsibility. The areas listed below will be given extra attention:

9.2. Vehicles (clean and free of trash/hardware).

9.3. FOD walks.

9.4. Condition of Aerospace Ground Equipment (AGE).

9.5. Tool control.

## **10. DROPPED OBJECT PROGRAM (DOP) MONITOR RESPONSIBILITIES.** The dropped object program monitors will:

10.1. Maintain a current database and Wing DOP continuity book.

10.2. Assign control numbers to dropped object reporting worksheets.

10.3. Investigate each dropped object incident to determine the cause.

10.4. Conduct dropped object briefings for all airfield personnel annually.

10.5. Follow the DO Program Self Assessment Guide (see attachment 2).

## **11. AIRCRAFT MAINTENANCE UNIT DOP RESPONSIBILITIES.**

11.1. Conduct annual training and briefings in all areas of the DO Program.

11.2. Designate by letter a primary and an alternate DO monitor and forward to 81 TRW Dropped Object Program Monitor.

11.3. Investigate each DO incident to determine the cause.

## **12. UNIT DOP MONITOR RESPONSIBILITIES.**

12.1. Maintain a DO continuity book containing the following:

12.2. A current copy of this instruction.

12.3. Copies of blank DO reporting checklists.

12.4. Reference copies of completed DO checklists for the past 24 months.

12.5. An appointment letter designating them as a DO monitor.

12.6. Ensure information concerning DOs provided by Unit MXG/MXQ DO monitor are distributed and briefed to appropriate personnel.

**13. FOREIGN OBJECT PREVENTION INCENTIVE PROGRAMS.**

13.1. Each Maintenance Organization/Contractors should have the intent of the FOD Incentive Program. This is to reward FOD conscious organizations, military members, or civilian personnel who take the extra steps to identify and correct potential FOD hazards by accounting for tools and personal articles, picking up loose debris and hardware, and performing FOD-conscious inspections. Promoting positive action to eliminate airfield and work area FOD can reduce the potential for FOD related incidents.

RENE F. ROMERO  
Colonel, USAF  
Vice Commander, 81st Training Wing

## Attachment 1

### GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

#### *References*

AFI 21-101/AETC Sup 1, *Aircraft and Equipment Maintenance Management*, 21 October 2010  
 AFI 21-101, *Aircraft and Equipment Maintenance Management*, 26 July 2010  
 AFI 31-101, *Integrated Defense (FOUO)*, 8 October 2009  
 AFI 91-204, *Safety Investigations and Reports*, 24 September 2008  
 AFMAN 33-363, *Management of Records*, 1 March 2008  
 AFI91-203, *Air Force Consolidated Occupational Safety Instruction*, 15 June 2012  
 AFPD 21-1, *Air and Space Maintenance*, 25 February 2003  
 KAFBI 13-201, *Airfield Operations and Local Flying Procedures*, 23 April 2008(Under Revision)  
 KAFBI 13-213, *Airfield Vehicular Traffic*, 28 October 2008(Under Revision)

#### *Prescribed Forms*

No prescribed forms.

#### *Adopted Forms*

Form 199, *Foreign Object Damage (FOD) Incident Investigation*  
 AFRC Form 42, *Foreign Object Damage(FOD) Mishap Investigation*  
 AF Form 422, *Notice of Air Force Member's Qualification Status*.

#### *Acronyms and Abbreviations*

**AFI**—Air Force Instruction  
**AFMAN**—Air Force Manual  
**AFOSHSTD**—Air Force Occupational Safety and Health Standard  
**AFPD**—Air Force Policy Directive  
**AGE**—Aerospace Ground Equipment  
**AMU**—Aircraft Maintenance Unit  
**CV**—Vice Commander  
**DOP**—Dropped Object Program  
**ECP**—Entry Control Point  
**FO**—Foreign Object  
**FOD**—Foreign Object Damage  
**IAW**—In Accordance With

**KAFB**—Keesler Air Force Base

**MOC**—Maintenance Operations Center

**OPR**—Office of Primary Responsibility

**POC**—Point of Contact

**RDS**—Records Disposition Schedule

**SNCO**—Senior Non-commissioned Officer

**VCO**—Vehicle Control Officers

**VCNCO**—Vehicle Control Non-commissioned Officers

**Attachment 2****DROPPED OBJECT PROGRAM SELF ASSESSMENT GUIDE**

- A2.1.** Is the wing/unit monitor designated by letter?
- A2.2.** Is the appointment letter current?
- A2.3.** Is the wing/unit DO monitor maintaining a current continuity book?
- A2.4.** Are DO investigation worksheets being turned in to MXG/QA within 24 hours of each incident?
- A2.5.** Are one-time inspections being initiated as required?
- A2.6.** Is information relevant to the dropped object program being distributed to appropriate organizations and is this information being briefed to personnel at all levels?
- A2.7.** Are individuals reporting dropped objects in a timely manner to the expeditor and dropped object monitor?
- A2.8.** Are Product Quality Deficiency Reports being initiated when material failure is the expected cause of a dropped object incident?