

**BY ORDER OF THE COMMANDER
12TH FLYING TRAINING WING**

**12TH FLYING TRAINING WING
INSTRUCTION 21-104**



17 JULY 2025

Maintenance

**FOREIGN OBJECT DAMAGE
PREVENTION AND DROPPED OBJECT
PREVENTION**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements Department of Air Force Policy Directive (DAFPD) 21-1, *Maintenance of Military Materiel*, and extends the guidance in DAFI 21-101, *Aircraft and Equipment Maintenance Management*. It outlines specific responsibilities for the implementation of the 12th Flying Training Wing's Foreign Object Damage (FOD) Prevention and Dropped Object Prevention (DOP) Programs. It is applicable to all base agencies (military, civilian, and contractors) that have personnel working in, around, or traveling through flightline designated areas. Group Commanders/Squadron Commanders will ensure all personnel are familiar with these procedures to minimize potential FOD to aircraft and support equipment. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the DAF Form 847, *Recommendation for Change of Publication*; route DAF Forms 847 from the field through the appropriate functional chain of command. Ensure all records generated as a result of processes prescribed in this publication adhere to Air Force Instruction (AFI) 33-322, *Records Management and Information Governance Program*, and are disposed in accordance with the Air Force Records Disposition Schedule, which is located in the Air Force Records Information Management System.

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. The major change to this publication is **paragraph 3.13.2** notification of lost tool or missing item. AFI 21-101 has been updated to DAFI 21-101 dated 20 December 2023. Air Force Policy Directive (AFPD) 21-1 has changed from *Air and Space Maintenance of Military Materiel* to DAFPD 21-1 *Maintenance*

of Military Materiel. The Quality Assurance (QA) Division has changed from 12 FTW/MXO to 12 MXG/MXQ. The 12 MXG Director of Maintenance has changed from 12 FTW/MX to 12 MXG/CL. The 12 FTW Vice Commander has changed from 12 FTW/CV to 12 FTW/CD.

1. Responsibilities.

1.1. Group/Squadron Commanders will:

1.1.1. Ensure all personnel working in or traveling through flightline areas receive a FOD Prevention orientation briefing during in-processing into their respective work centers.

1.1.1.1. As a minimum the briefing should include location of designated flightline entry control points (ECP), FO tire checks before entering the ECP, procedures for reporting actual or potential FO, and vehicle operations around parked and taxiing aircraft.

1.1.2. Designate personnel as applicable that are responsible for group/squadron FOD prevention and forward a copy of the appointment letter to the Wing FOD Monitor, 12MXG/MXQ.

1.1.2.1. Units requiring FOD prevention monitors include T-6, T-7, and T-38 Flying Training Squadrons, Aircraft Maintenance Divisions, Logistics Readiness Division, Security Forces Squadron, Civil Engineer, and Contractors working in or around flightline areas. Others may be tasked as deemed necessary by the Wing/CD or FOD Program Monitor.

1.2. The 12th Maintenance Group (12 MXG) and 12th Operations Group (12 OG) will monitor FOD prevention practices and procedures incidental to their respective daily flying operations.

1.3. The 502nd Civil Engineering Group (502 CEG) will ensure airfield sweepers and related equipment are adequately maintained to support cleanup of aircraft parking, taxiway, and runway areas.

1.3.1. Sweeper/equipment status and condition will be briefed at scheduled FOD prevention meetings.

1.4. The Wing Airfield Manager will:

1.4.1. Routinely assess the overall condition of aircraft parking areas, runways, and taxiways. Appropriate action will be taken to correct discrepancies when noted.

1.4.1.1. The condition of the airfield will be briefed at scheduled FOD meetings to include any new or on-going construction projects that may impact safe operation of aircraft.

1.4.2. Ensure aircraft parking, runway, taxiways and hangar aprons are swept on a regular basis to minimize FOD potential.

1.5. The 12 MXG/CL will:

1.5.1. Comply with additional FOD prevention procedures as directed in DAFI 21-101 and local Maintenance Operating Instructions (MOI).

1.6. Vehicle Control Officers will:

1.6.1. Ensure personnel have received the appropriate training prior to issuing flightline driving permits.

2. FOD Prevention Meetings .

2.1. FOD Prevention Committee Meetings will be conducted quarterly only when the MAJCOM-established standard is not met and chaired by the 12 FTW/CD or 12 MXG/CL in the 12 FTW/CD's absence.

2.1.1. **Minimum attendees/representatives for the meetings will include:** Group Commanders, Wing Safety, Airfield Manager, Wing FOD Monitor, and Aircraft Maintenance Divisions. The 12 FTW/CD may designate additional attendees as needed.

2.1.2. Recommended agenda items discussed during the meeting include mechanical/vacuum sweeper status, identification of potential FOD sources, lost tools/items, dropped objects, cockpit FOD incidents, airfield condition, reportable FOD incidents, and new initiatives/actions to minimize FOD.

2.1.3. The meeting may also be used as a forum to recognize personnel that have made significant contributions to the FOD prevention program.

2.2. A monthly FOD meeting will be initiated when FOD incidents exceed the Major Command (MAJCOM) established standard. The focus of these meetings will be to discuss negative trends and to develop appropriate action plans to resolve them.

3. FOD Prevention Procedures:

3.1. Special attention will be given to small items of debris (i.e., safety wire, bolts, nuts, screws) during maintenance on aircraft and support equipment. Items of this nature will be placed in FO bags or containers.

3.2. Metal insignia or similar uniform items will not be worn on the flightline. Some badges may be worn under the following conditions:

3.2.1. Restricted area badges and base exercise evaluation team (EET) badges will be secured to the individual's clothing with a subdued/cotton cord or plastic armband when worn in flightline areas.

3.3. Wigs, hairpieces, metal hair fasteners, earrings, or any other jewelry that may fall off without notice, are not authorized on the flightline.

3.4. During engine maintenance and operations, no items will be placed near aircraft intakes or on canopy sills.

3.5. Hats/berets will not be worn within 25 feet of aircraft operating engines.

3.6. Aircraft forms are potential FOD hazards on the flightline. They will be secured when subject to jet blast from a taxiing aircraft and will be stored during periods of inclement weather such as high winds.

3.7. Before entering the cockpit/cabin of an aircraft, personnel will ensure pockets are emptied and loose articles are secured. If tools are required for maintenance or flight operations, they will be strictly controlled and accounted for before and after any work that is accomplished on the aircraft.

3.8. Vehicles normally driven on the flightline will be equipped with secured and lidded FO containers. The containers will be stenciled with the word "FOD" in contrasting letters no smaller than two inches. FOD containers will be emptied when full or once a day, whichever comes first.

3.8.1. Vehicle operators will perform tire FO checks prior to entering flightline entry control points or other accessible areas. FO removed from tires will be placed in the vehicle FO container.

3.9. FOD walks are mandatory to remove FO from ramps, runways, and access roads; in addition, vacuum sweepers will be used to the fullest extent to supplement FOD walks.

3.10. All personnel working in flightline areas should be alert to potential FOD hazards. When discrepancies are noted (loose debris, rocks, deteriorated taxi/runways, etc.) immediately contact the Maintenance Operations Center (MOC) at 652-6481 to report the problem.

3.11. Personal tools not controlled through a consolidated tool kit (CTK) are not authorized on the flightline, or in any maintenance area (e.g. Mini-Mag type flashlights, Leatherman type multi-tools, buck knives). The only exceptions are items deemed necessary for flight by the pilot during scheduled missions

3.12. Work centers directly involved in aircraft maintenance will mark and control tools for accountability and inventory purposes. Contact the 12 MXG Quality Assurance Division (12 MXQ) at 652-5558 for guidance on proper marking of CTK items.

3.13. Lost Tool/Item.

3.13.1. Maintenance personnel will account for tools before and after each maintenance task. Aircrew members will account for personal items before and after each flight. If the aircraft is off station, the aircrew will contact the MOC to inform them of the lost tool/item.

3.13.2. Maintenance personnel will notify MOC/QA immediately anytime an item, e.g., knob, hardware, tool(s), etc., is missing or any item is reported lost or seen by a pilot in the cockpit(s) before, during, or after flight. Initiate a FC -12 FTW-009 FO/Lost tool report (QA Share point).

3.13.3. Supervisor or QA shall place a Red "X" in the affected aircraft forms with a description of the tool/item and specific last known location. Perform a thorough search for the tool/item and if still not found contact QA for a secondary search.

3.13.3.1. The search for a lost tool/item may be terminated by the 12 MXG/CL, Division Chief, or Production Supervisor after all published procedures to find the item has been exhausted. *Note:* Aircraft off-station will be coordinated through the 12 MXG/CL and 12 OG/CC to determine safety of flight prior to returning to home station.

3.13.4. Upon completion of the lost tool/item report, submit a copy of the form FC -12 FTW-009 to the 12 MXQ, Quality Assurance Division, for filing purposes.

4. Dropped Object Prevention Program.

4.1. Dropped Object is any aircraft part, component, surface, or other item lost during aircrew operations, unless intentionally jettisoned from engine start to engine shutdown.

4.2. **Reporting.** 12 MXQ will notify the base/wing safety office of all dropped objects. The initial dropped object report will be made to the MAJCOM via SharePoint event (<https://usaf.dps.mil/sites/aetc-19af/lg/sitepages/home.aspx>). If it involves casualties, property damage, or if adverse publicity is likely, report IAW AFMAN 10-206, *OPERATIONAL REPORTING (OPREP)*.

4.3. **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.

PETER J.S. LEE, Colonel, USAF
Commander, 12th Flying Training Wing

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

AFMAN 10-206, *OPERATIONAL REPORTING (OPREP)*, 18 Jun 2018

AFI 33-322, *Records Management and Information Governance Program*, 23 Mar 2020

DAFI 21-101, *Aerospace Equipment Maintenance Management*, 20 Dec 2023

DAFPD 21-1, *MAINTENANCE OF MILITARY MATERIEL*, 21 Feb 2024

Adopted Form

AF Form 847, Recommendation for Change of Publication

FC-12FTW-009, Lost Tool/Item Report

Office Symbols

12 FTW/CC—12th Flying Training Wing Commander

12 FTW/CD—12th Flying Training Vice Wing Commander

12 OG—12th Operations Group

12 OG/CC—12th Operations Group Commander

12 MXG/CL—Director of Maintenance

12 MXG/MX—12th Maintenance Group

12 MXQ—12th Maintenance Group Quality Assurance

502 CEG—502nd Civil Engineering Group

Abbreviations and Acronyms

CES—Civil Engineering Squadron

CTK—Consolidated Tool Kit

DOP—Dropped Object Program

ECP—Entry control points

EET—Exercise Evaluation Team

FO—Foreign Object

FOD—Foreign Object Damage

IAW—In Accordance With

MAJCOM—Major Command

MOC—Maintenance Operations Center

MOI—Maintenance Operating Instructions

12 MXG/MX—12th Maintenance Directorate

12 OG—12th Operations Group

Terms

FOD—Any damage to an aircraft, engine, aircraft system, component, tire, munitions, or support equipment caused by a foreign object (FO) which may or may not degrade the required safety and/or operational characteristics of the aforementioned item(s).

Aircraft Movement Area—Any designated area an aircraft can taxi/takeoff under its own power or be towed during maintenance operations (i.e., taxiways, parking ramps, and runways).

Flightline Area—Designated aircraft parking areas, entrance points, and facilities where maintenance is conducted, and aircraft are launched and recovered.

Lost Tool and Item—Any controlled tool a maintenance technician discovers missing or personal item an Aircrew member can't account for after flight. Examples of lost tools or items include missing tools from consolidated tool kits, pencils, ear plugs etc.