

**BY ORDER OF THE COMMANDER
22D AIR REFUELING WING**

**MCCONNELL AIR FORCE BASE
INSTRUCTION 21-102**



17 JULY 2012

Maintenance

**FOREIGN OBJECT DAMAGE (FOD)
CONTROL**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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RELEASABILITY: There are no releasability restrictions on this publication.

OPR: 22 MXG/MXQ

Certified by: 22 MXG/CC
(Col Steven B. Hardy)

Supersedes: McConnellAFBI21-102,
15 July 2003

Pages: 14

This instruction implements procedures for foreign object damage (FOD) control. It augments AFD 21-1, *Air and Space Maintenance* (8 May 12), and establishes local FOD prevention procedures not defined by other Air Force publications and implements the directives in AFI 21-101, *Aircraft and Equipment Maintenance Management* (8 May 12), and AFI 91-204, *Safety Investigations and Reports* (8 May 12). This instruction is applicable to all units and personnel assigned to or operating within McConnell AFB.

Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW with the Air Force Records Information Management System (AFRIMS) located at <https://www.my.af.mil/gcss-af61a/afirms/afirms/>. 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 the appropriate functional's chain of command.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include: Para 1.1 content added, para's 1.3 - 1.5.1 and 1.5.3 content changed, para's of section 2 have changed, para 3.1.1 content changed, para's 3.2.4 - 3.2.6 added, content from para's 3.2.1 - 3.2.6 changed, para's 3.4 and 3.5 from previous addition deleted, para 4.1 changed to 4.1.2 and content changed, para's 4.1.1 and 4.1.3 - 4.1.4 added, para 4.2 added, para 4.3 changed to 4.2.1,

para's 4.2.1.2 - 4.2.1.3 added, added para 4.2.1.1, all of section 5 content changed and para's added, all of section 6 content changed and para's added, section 7 and 8 added, attachment 1 changed to attachment 3, attachment 1 glossary added, attachment 2 FOD report added, attachment 4 added, attachment 5 added

1. RESPONSIBILITIES:

1.1. The 22d Air Refueling Wing Vice Wing Commander is the Foreign Object Damage (FOD) program manager and appoints the wing FOD monitor within 22d Maintenance Group (22 MXG) and 931 Deputy Commander for Maintenance (931 ARG/DCM) Quality Assurance (QA) office.

1.2. The wing FOD monitor is responsible for scheduling and briefing quarterly FOD meetings.

1.3. All personnel are responsible for reporting potential FOD conditions or problems existing on the flight line, within maintenance hangars and all maintenance industrial areas to the wing FOD monitor.

1.4. Potential airfield FOD conditions should be reported to the airfield manager through the Maintenance Operations Center (MOC), base ops or command post immediately.

1.4.1. Airfield manager will back-brief the wing FOD monitor on follow-up actions taken on reported potential FOD.

1.5. Squadron(s)/unit(s) engaged in flight line/airfield activities must:

1.5.1. Provide the wing FOD monitor with FOD monitor appointment letters and update said letters when there is a unit FOD monitor change.

1.5.2. Ensure FOD monitors or designated representatives attend all scheduled FOD meetings.

1.5.3. Provide the wing FOD monitor with corrective actions taken on reported (actual or potential) FOD issues.

2. PROCEDURES:

2.1. Vehicle operators are required to perform vehicle FO inspections before entering the MAPA. This inspection includes a circumferential tire check (roll-over check) and a general vehicle walk around to inspect wheel wells and bumpers. The inspection will include removal of any FO from tire treads. Mandatory tire roll over checks will be accomplished before entering the Ops Ramp in front of building 1110 and when entering at the Kansas Street gate near the Fire Department. Tire roll over checks will be accomplished at all entry points into Delta Ramp (see attachment 5).

2.1.1. Emergency and alert response vehicles are exempt from this policy when responding to actual emergencies or alert quick-reaction responses, simulated or real-world. Operators of these vehicles will notify airfield management as soon as practical and airfield management personnel will perform a FOD check to ensure the route is FOD free.

2.2. Vehicle operators who identify foreign objects in their path will take all possible actions to stop and correct the foreign object condition. When unable to do so, contact airfield

management or 22 MXG/931 ARG/DCM MOC to report the condition. MOC and airfield management will initiate necessary action to have the foreign object condition addressed.

2.3. Any foreign object or potential FOD problems outside of a squadron's ability to resolve will be reported to the wing FOD monitor for resolution and included in the quarterly FOD meeting agenda.

2.4. Transient maintenance personnel will:

2.4.1. Police the transient aircraft parking area and taxiways used during escort of transient aircraft in those areas.

3. 22 ARW AIRCRAFT FOD REPORTING:

3.1. Upon discovery of any actual or suspected FOD incident:

3.1.1. Report all FOD incidents through the squadron supervisory chain to MOC. A seven-level specialist who maintains the applicable system involved will fully inspect the area for visible damage and complete an MXG Form 21-102, FOD Report (Attachment 2). All FOD incidents, minor and major, must be recorded in G081 with the proper "How Malfunction" Code.

3.2. MOC will notify:

3.2.1. Wing FOD monitor

3.2.2. MXG/CC and ARG/DCM

3.2.3. Airfield manager

3.2.4. Command post

3.2.5. QA

3.2.6. Wing safety

3.3. The wing FOD monitor and the wing safety office will assume responsibility for initiating, guiding and reporting the investigation.

4. 22 ARW DAILY MAINTENANCE:

4.1. Maintenance personnel will:

4.1.1. Ensure work areas are free of foreign objects and account for all tools and equipment prior to breaks in maintenance and/or when their maintenance action is complete. Foreign objects will be placed in containers and receptacle(s) (i.e. FOD bags, FOD cans, Buckets, etc.) while maintenance action is in progress. Ensure these containers are properly emptied after maintenance is complete and the end of the duty day.

4.1.2. Properly store all hardware when working on the aircraft. Small parts and hardware removed from the aircraft will be placed in parts bags and attached to panels or components during breaks in maintenance. Parts bags will be labeled to identify the type/quantity of hardware and associated aircraft tail number/equipment identification information. All personnel will ensure their work area is free of FOD after performing maintenance.

4.1.3. Inspect all support equipment prior to and after use for potential foreign object hazards (safety wire, trash, hardware, etc.).

4.1.4. Each individual who signs “Corrected By” and/or “Inspected By” blocks of the aircraft or equipment forms is responsible for the complete foreign object inspection of the area in which their job was performed. This includes aircraft cockpit and flight deck inspections prior to flight.

4.2. Flightline Clothing Policy and wear of Restricted Area Badge (RAB).

4.2.1. Watch caps, ski masks and cold weather caps are authorized for wear on the flight line. Caps will be secured by a headset or ear defenders around an operating engine.

4.2.1.1. Hats/berets are authorized for wear on the flight line but will not be worn within 300 feet of an operating aircraft engine. Hats/berets will not have metal pins/insignias/badges.

4.2.1.2. Restricted Area Badges will be secured to the person or uniform. Each individual is responsible for properly displaying and securing their RAB.

4.2.1.3. Methods to secure RABs include a subdued nylon/cotton cord if worn around the neck or armband type holder for display on upper arm. When worn around neck the cord must be a break-away style for safety concerns. When secured to the uniform with only a clip, a secondary attachment point must be used – i.e., nylon/cotton cord.

5. FOD WALK PROCEDURES:

5.1. Foreign object debris in the maintenance complex and on the flight line is everyone’s responsibility. These guidelines provide a basic framework for keeping areas foreign object free.

5.2. Building occupants are responsible for the immediate areas around their buildings, including smoking and trash collection areas. This includes identifying FOD hazards such as broken concrete and degrading asphalt. Units will contact appropriate agencies to correct these conditions.

5.3. 22 MXG assigned areas of responsibility, are outlined in the attached FOD walk map (Attachment 4).

5.4. 22 MXG and 931 ARG/DCM units will:

5.4.1. FOD walk the areas of responsibility as outlined in the FOD walk map (Attachment 4), on a weekly basis.

5.4.2. FOD Boss and FOD Magnet will be used by AMXS and MXS in addition to FOD walks to prevent FOD. AMXS will operate the FOD Boss and Magnet on the MAPA at least 12 hours each month. MXS will operate the FOD Boss and Magnet in aircraft towing areas (throats to the MAPA and outside hangars) and around their areas of responsibility at least 6 hours each month.

5.4.3. Production Supers or an NCOIC will organize and execute the FOD walk. They will notify the QA office upon completion of the weekly FOD walk.

5.4.4. Perform pre and post use FOD walks of Delta, Echo and Fox ramps.

5.5. Airfield management will check all taxiways and runways daily.

5.6. Once a month, 22 MXG and 931 ARG/DCM will conduct a Group FOD Walk of the MAPA.

5.7. Once a Quarter, 22d ARW will conduct an airfield wide FOD Walk consisting of representatives from all base agencies. Particular attention of this FOD Walk will be to clean up accumulated debris from grassy and unused areas of the airfield.

6. 22 ARW MAINTENANCE BIRD STRIKE REPORTING PROCEDURES:

6.1. All units will report bird strikes using their supervisory channels and procedures.

6.2. All ground-found and aircrew reported bird strikes (damage or no damage) will be reported using the MXG Form 21-102.1, Bird Strike Report (Attachment 3). All bird strikes will be inspected and documented in the aircraft forms. A "Red Dash" entry and job control number (JCN) will be entered into the aircraft forms.

6.2.1. Owing AMU pro super will be responsible for bird strike reporting as follows:

6.2.1.1. A sampling of feathers/down will be placed into a ziploc bag marked with tail number, date and will be forwarded with the report to maintenance debrief no later than the end of the work shift.

6.3. MOC will contact command post, wing safety, QA and the MXG/CC and ARG/DCM

6.4. Maintenance debrief will forward all collected feathers and reports to the wing safety Bird Aircraft Strike Hazard (BASH) monitor.

RICKY N. RUPP, Colonel, USAF
Commander 22d Air Refueling Wing

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

AFMAN 33-363, *Management of Records*, 1 March 2008

AFI 21-101, *Aircraft and Equipment Maintenance Management*, 26 July 2010

AFPD 21-1, *Air and Space Maintenance*, 25 February 2003

AFI 91-204, *Safety Investigations and Reports*, 24 September 2008

Prescribed Forms

MXG Form 21-102, MXG Form 21-102.1.

MXG Form 21-102, *Bird Strike Report*

Adopted Forms

AF 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

22 MXG—22d Maintenance Group

AFB—Air Force Base

AFMAN—Air Force Manual

AFRIMS—Air Force Records Information Management System

AMU—Aircraft Maintenance Unit

AMXS—Aircraft Maintenance Squadron

ARG—Air Refueling Group

ARW—Air Refueling Wing

BASH—Bird Aircraft Strike Hazard

CC—Commander

DCM—Deputy Commander for Maintenance

FOD—Foreign Object Damage

IAW—In Accordance With

JCN—Job Control Number

MAPA—Mass Aircraft Parking Area

MOC—Maintenance Operations Center

MXS—Maintenance Squadron

NCOIC—Non-Commissioned Officer in Charge

OPR—Office of Primary Responsibility

QA—Quality Assurance

RAB—Restricted Area Badge

TA—Transient Alert

Attachment 2

FOREIGN OBJECT DAMAGE REPORT FORM

FOREIGN OBJECT DAMAGE REPORT			
SECTION I			
1. QA CONTROL NUMBER	2. MDS	3. A/C TAIL NUMBER	4. OWNING ORGANIZATION/BASE
5. DATE/TIME OF FOD	6. DISCOVERY LOCATION	7. WHEN DISCOVERED	8. TYPE OF FOD
9. DISCOVERED BY	10. AFTO 781A ENTRY PG: ITEM: DATE:	11. JCN	12. PREVENTABLE <input type="checkbox"/> YES <input type="checkbox"/> NO
SECTION II NOTIFICATION HISTORY			
1. MAINTENANCE SUPERVISOR (RANK, LAST NAME) NAME: TIME: DATE:	2. MOC REPRESENTATIVE (RANK, LAST NAME) NAME: TIME: DATE:	3. QA REPRESENTATIVE (RANK, LAST NAME) NAME: TIME: DATE:	
4. WING SAFETY NOTIFIED <input type="checkbox"/> YES <input type="checkbox"/> NO DATE:	5. WING FOD MANAGER NOTIFIED <input type="checkbox"/> YES <input type="checkbox"/> NO DATE:	6. WING FOD MONITOR NOTIFIED <input type="checkbox"/> YES <input type="checkbox"/> NO DATE:	
SECTION III FOD INFORMATION			
1. ENGINE TYPE	2. ENGINE POSITION	3. ENGINE TIME	4. ENGINE SERIAL NUMBER
5. TIME SINCE OVERHAUL	6. TIME SINCE INSPECTION	7. ENGINE STAGES WITH DAMAGE	

8. AIRFRAME TIME	9. AIRFRAME AREA AFFECTED	10. COST OF PART/REPAIR	11. MAN HOURS
SECTION IV QA INFORMATION (CONT ON PAGE 2)			
1. INVESTIGATION FINDINGS/CAUSE (<i>Who, What, When, Where, Why, How</i>) <div style="border: 1px solid black; height: 100px; width: 100%;"></div>			
2. PROJECTED REPAIRS AND COST OF DAMAGE <div style="border: 1px solid black; height: 80px; width: 100%;"></div>			
3. ACTIONS TO PREVENT RECURRENCE <div style="border: 1px solid black; height: 100px; width: 100%;"></div>			
4. QA INSPECTOR (<i>RANK, NAME</i>) 	5. DATE 	6. FILED IN QA PROGRAMS FOLDER <input type="checkbox"/> YES <input type="checkbox"/> NO DATE:	

SECTION V CONTINUATION

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Attachment 3

BIRD STRIKE REPORT FORM

BIRD STRIKE REPORT					
SECTION I					
1. QA CONTROL NUMBER		2. MDS	3. A/C TAIL NUMBER	4. OWNING ORGANIZATION/BASE	
5. ORIGIN OF SORTIE		6. DATE/TIME OF LAST SORTIE		7. SORTIE DURATION	8. DATE/TIME DISC
9. WHEN DISCOVERED		10. AIRCRAFT COMMANDER		11. FEATHERS FORWARDED TO DEBRIEF <input type="checkbox"/> YES <input type="checkbox"/> NO	
12. REPORT FORWARDED TO QUALITY ASSURANCE <input type="checkbox"/> YES <input type="checkbox"/> NO		13. WING SAFETY NOTIFIED <input type="checkbox"/> YES <input type="checkbox"/> NO NOTIFIED BY:		14. AFTO 781A ENTRY PG: ITEM: DATE:	15. JCN
SECTION II (IF DAMAGE FOUND)					
1. AIRCRAFT DAMAGE <input type="checkbox"/> YES <input type="checkbox"/> NO		2. AFTO 781A ENTRY FOR DAMAGE PG: ITEM: DATE:		3.G081 JCN	
4. PART NUMBER		5. STOCK NUMBER		6. NOUN	7. WORK UNIT CODE
8. T.O. NUMBER	9. T.O. FIG	10. T.O. INDEX	11.COST OF PART/REPAIR		12. MAN HOURS

SECTION III

1. POINT(S) OF IMPACT (be specific)

2. DAMAGE DESCRIPTION

3. CORRECTIVE ACTION (boroscope, repairs, wipe down, etc.)

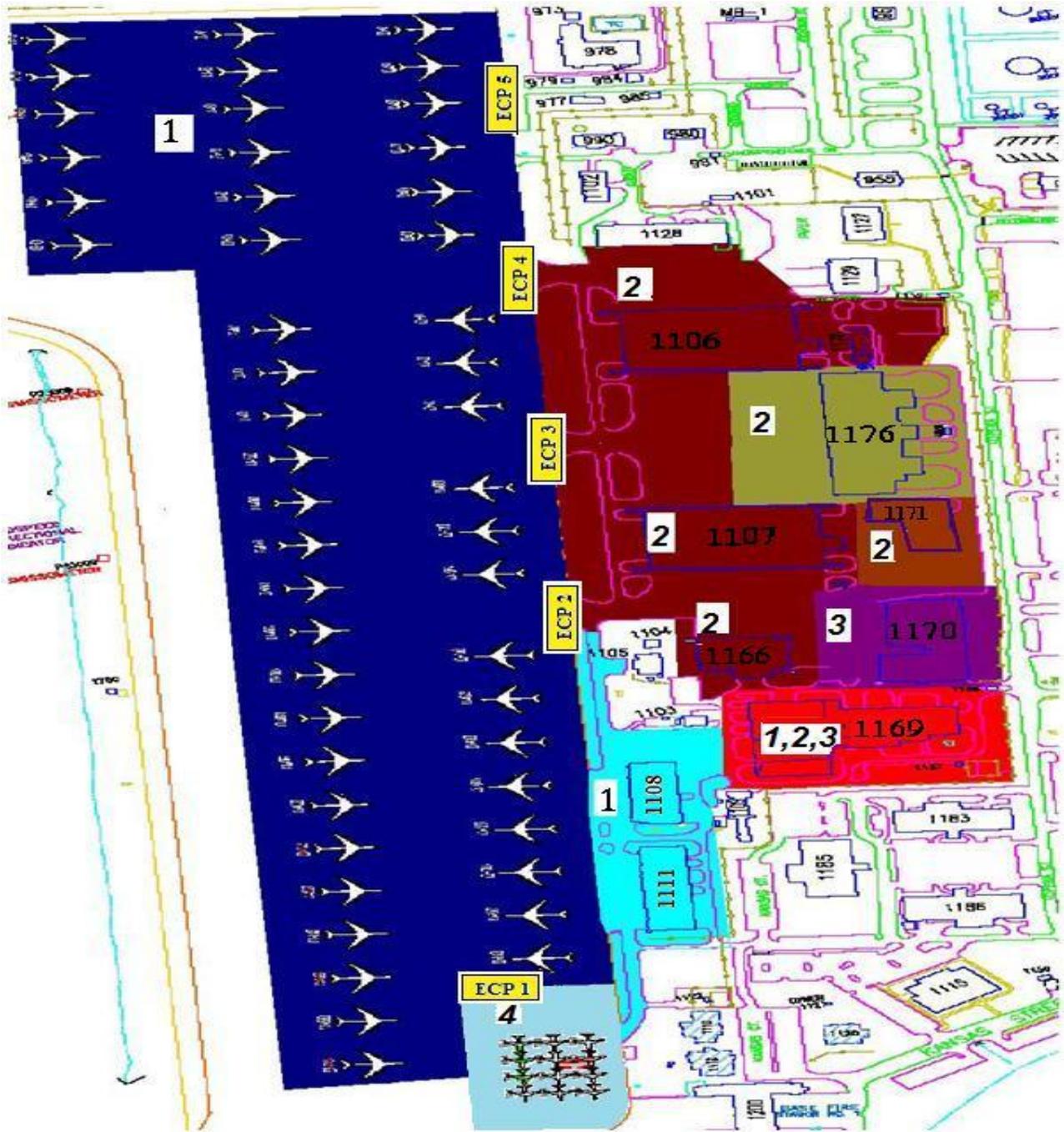
4. QA INSPECTOR (RANK, NAME)

5. DATE

6. FILED IN QA PROGRAMS FOLDER

YES NO DATE:

Attachment 4
AREA NUMBER



Area numbers:

- 1. AMXS 3. MOS
- 2. MXS 4. TA

Attachment 5

