BY ORDER OF THE COMMANDER
RAF LAKENHEATH (USAFE)

LAKENHEATH INSTRUCTION 21-129

5 JUNE 2007

Maintenance

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

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFPD 21-1, Managing Aerospace Equipment Maintenance. It establishes procedures and provides policy to implement the Foreign Object Damage (FOD) and Dropped Object (DO) Prevention Programs for RAF Lakenheath. It will be utilized in conjunction with AFI 21-101, Aerospace Equipment Maintenance Management and its supplements. This instruction applies to all squadrons, units, detachments, temporary duty organizations, support squadrons, contractors and personnel who maintain aircraft, associated equipment, or have access to the flightline or maintenance areas. **Note:** Contract Field Teams (CFT) under contractual obligations will comply with this instruction. If conflicts exist between the contract technical order of specification and this instruction, the provisions of the contract technical order of specification will prevail. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using AF IMT 847, Recommendation for Change of Publication; route AF IMT 847s through publications/forms managers. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 37-123 (will convert to AFMAN 33-363), Management of Records, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at **https://afrims.amc.af.mil**.

SUMMARY OF CHANGES

This instruction has been revised to clarify wording and further define procedures throughout the publication. Significant changes to FOD walk areas of responsibility are located in **Attachment 3**. Changes to vehicle FOD checks, including the addition of roll-over check and the deletion of the exemption when crossing November Taxiway on the north side are located in paragraph **31.** of this instruction. A bar (|) indicates revisions from the previous edition.

1. Program Objective. FOD prevention is the responsibility of every individual who works or operates in or around the airfield. Commanders and supervisors, at all levels, are responsible for implementing procedures of the instruction as they pertain to their assigned duties.

2. Foreign Object Damage. Any damage to an aircraft engine, aircraft system, equipment or tire caused by an external foreign object which may or may not degrade the required safety and/or operational characteristic of the engine, aircraft system, or tire. Common causes of FOD are poor housekeeping, improper maintenance practices and aircraft taxiway/ramp deterioration. Continual training, awareness, and discipline are all important elements of an effective FOD/DO Prevention Program. **The overall program objective is "ZERO FOD and DO" Mishaps.**

3. Program Management.

3.1. Wing FOD Prevention Monitor Responsibilities.

3.1.1. Manage the FOD Prevention Program in conjunction with AFI 21-101 and associated supplements.

3.1.2. Organize, report and present FOD/DO program status at monthly and quarterly FOD/DO prevention briefings.

3.1.3. Report all FOD/DO incidents and forward reports to the USAFE FOD manager as required. Correspondence that requires off-base distribution will be approved by the Vice Wing Commander (CV), or if unavailable, MXG/CC before forwarding to USAFE.

3.1.4. Maintain master FOD/DO logs and archive all files and reports for a minimum of 2 years.

3.1.5. Conduct periodic spot checks of maintenance areas, aircraft, taxiways, aircraft parking spots, vehicles, hangars, access roads to the flightline, Squadron FOD boards and other areas.

3.1.5.1. Address areas of concern to the area commander, supervisor or Airfield Manager.

3.1.5.2. Annotate inspection information in locally generated spreadsheets.

3.1.6. Develop and manage the FOD prevention awards program.

3.1.7. Analyze program areas that require additional management emphasis.

3.1.8. Generate and distribute FOD prevention material to squadron FOD representatives.

3.1.9. Maintain the Failure Analysis Service Technology (FAST) kit and be the point of contact of the program. The FAST program will be used to the maximum extent with the approval of MXG/CC or MXG/CD.

3.2. Squadron Commander Responsibilities.

3.2.1. Each unit who drives or works on the flightline will establish and maintain an effective squadron FOD prevention program. A FOD prevention program will also be implemented at all deployed locations.

3.2.2. Each unit will assign a primary and alternate unit FOD monitor, in writing, to attend monthly FOD committee meetings and be the point of contact for their squadron for all FOD issues. In addition, the Aircraft Maintenance Units (AMU) will appoint a unit DOP monitor as point of contact for dropped object issues. **Note:** The AMU appointment letter must indicate

"FOD and/or DO Representative." Additional representatives may be appointed to assist the squadron primary and alternate FOD prevention representatives.

3.2.3. Assign additional duties and/or responsibilities to squadron FOD representatives.

3.2.4. Ensure maximum participation in daily FOD walks prescribed by this instruction.

3.2.5. Attend the 48 FW FOD executive committee quarterly meetings. If unable to attend, ensures his/her representative attends.

3.3. Squadron FOD Prevention Representative Responsibilities.

3.3.1. Ensure widest dissemination of information provided by the wing FOD prevention NCO such as flashes, reports, minutes, posters, visibility boards, videos, etc. Brief any pertinent information contained in the flashes, reports, and minutes to all workcenter personnel.

3.3.2. Develop and ensure a FOD prevention continuity binder is available to all personnel and consists of the following:

3.3.2.1. Current FOD instructions.

3.3.2.2. Squadron FOD representative appointment letter.

3.3.2.3. Workcenter FOD prevention checklist.

3.3.2.4. Newcomers' FOD prevention briefing.

3.3.2.5. Monthly reports from the past 3 months.

3.3.2.6. FOD committee quarterly meeting minutes.

3.3.3. FOD bulletin boards will be maintained by each section, workcenter, or facility that performs on/off-equipment maintenance or operates in the flightline area during primary or support functions. The placement of the FOD bulletin board will be at the discretion of the facilities manager, but is to be located in a place of high visibility to increase individual awareness of FOD prevention. If there are multiple shops within close proximity, then maintain a common FOD bulletin board in a common area. The FOD bulletin board is the responsibility of the owning squadron/AMU/flight/shop and will be kept current on a monthly basis or when required. FOD bulletin board required contents are, but are not limited to:

3.3.3.1. The wing FOD manager appointment letter and LAKVA 21-114, 48 FW FOD Prevention Key Personnel.

3.3.3.2. Squadron or AMU FOD/DO prevention representative appointment letter.

3.3.3.3. Monthly minutes; a reference may be posted to where the minutes may be obtained or read.

3.3.3.4. Any FOD/DOP Flash, newsletter, or publications that are requested by the Wing FOD Manager to be displayed.

3.3.4. Suggested but not required items include:

3.3.4.1. Winning FOD person nomination letter.

3.3.4.2. Monthly winning FOD poster.

3.3.5. Assist the wing FOD NCO when requested.

3.3.6. All required material can be obtained on the FOD website located on the 48 MXG homepage (**https://48fw/48MXG/default.aspx**).

4. Meeting Requirements. Attendance is **mandatory** at FOD meetings for squadron primary and alternate FOD representatives. If the squadron primary or alternate is unable to attend, a representative will be appointed to attend.

5. Civil Engineer Squadron.

5.1. Provide powered sweepers for aircraft parking ramps, taxiways, runways, flightline access roads, and other areas of the airfield.

5.2. Ensure recently swept areas are FOD free upon completion of sweeping operations to ensure the actions have not created a FOD hazard; such as broken bristles or broken taxiway lights.

5.3. Provide monthly serviceability status of sweepers and hourly usage to the wing FOD manager for inclusion in the monthly/quarterly FOD statistics.

5.4. Provide assistance and technical advice to the wing FOD manager and wing FOD committee for pavement repairs, airfield construction, and other functions that fall under the Civil Engineer Squadron.

6. Component Maintenance Squadron/Propulsion Flight.

6.1. Report and coordinate any suspected FOD discovered during engine maintenance to Quality Assurance and the wing FOD manager.

6.2. Report blade blending requirements to the wing FOD manager, reporting is not required if blades/stators are blended for minor sand nicks or roughness.

6.3. Assist the wing FOD manager and Wing Safety, as necessary, during FOD investigations.

6.4. Perform disassembly of engine modules or components, as required, for FOD investigations.

6.5. Provide repair cost data to the wing FOD manager and Wing Safety.

7. Equipment Maintenance Squadron/Non-destructive Inspection (NDI) Requirements.

7.1. Perform X-ray inspection of the variable-ramp and louver areas prior to engine operation after local ramp maintenance and any time an engine has received FOD from an unknown source. Panels and all fasteners will be fully installed. A “Red X” will be entered in the AFTO Form 781A, Maintenance Discrepancy and Work Document**,** as prescribed by AFI 21-101**,** when an X-ray of a variable-ramp is required.

7.2. During post Programmed Depot Maintenance (PDM) Acceptance Inspections, NDI will review the film provided by the depot team. This will be done before the engine is run locally after it returns from PDM.

7.3. The removal and installation of aircraft panels for the purpose of inspections or retrieval of FOD will not constitute an NDI X-ray inspection requirement. However, X-rays will be accomplished after all other maintenance actions in accordance with applicable directives.

7.4. Review the film with a minimum of two qualified NDI technicians. All FOD will be annotated on the radiographs. If FOD is noted, a 2A7X3 (Aircraft Structural Maintenance) technician will determine if the FOD can be retrieved or is in an inaccessible/allowable area and will annotate their man # on the film noting who inspected the accessibility of the FOD. Separately enter each shot number and quantity of items discovered in the next open blocks of the aircraft AFTO Form 781A. Each entry will be a "Red X" condition.

7.5. X-ray shots for maintenance actions may be limited to the specific area on which maintenance was completed.

7.6. Ensure variable-ramp louvers and the bypass door are covered to prevent FOD intrusion when maintenance is performed in the area, during extensive maintenance, and during hourly post flights (HPO) and periodic (PE) inspections. All bypass doors, louvers, and ramps will be in the full up position prior to X-ray inspection.

7.7. Ensure the X-ray film is returned to the NDI lab after a search with accessible FOD taped to the film.

7.8. Notify the owning workcenter of the results when the review of the X-ray film is complete and sign off the X-ray inspection discrepancy in the aircraft forms.

7.9. Assist the owning workcenter in pinpointing the location of the FOD. The owning workcenter, with the assistance of an Aircraft Structural Maintenance technician, if needed, will determine if the FOD is in a sealed area.

7.10. Notify the Wing FOD Manager of fan blade NDI inspections.

7.11. Provide monthly variable-ramp inspection statistics to the Wing FOD Manager for inclusion into monthly/quarterly FOD statistics.

8. Equipment Maintenance Squadron/Wheel and Tire Shop. Provide monthly cut tire statistics to the Wing FOD Manager for inclusion into Monthly Status Reports.

9. Logistics Readiness Squadron.

9.1. Create and implement a program, approved by the wing FOD monitor, which accounts for all government and/or personal equipment/tools of all vehicles that enter/exit the flightline area.

9.2. Perform vehicle FOD checks, to include tires, when accessing aircraft movement areas from unpaved/deteriorated surfaces and at entry control points.

9.3. Perform daily FOD walks of the Strategic Aircraft ramp and ensure Victor taxiway is kept free of foreign objects through daily assessment and sweeping.

9.4. Perform a FOD walk and sweep after PHASE II winds or higher and after heavy rains.

9.5. Perform a FOD walk and sweep after an aircraft taxis off the strategic ramp.

10. Maintenance Operations Center.

10.1. Notify the Wing FOD Manager and Wing Safety of any occurrence involving FOD or Dropped Objects.

10.2. Coordinate with Airfield Management for dispatch of ramp sweepers, when requested for FOD removal.

10.3. Conduct general announcements to perform a FOD walk after PHASE II winds or higher and after heavy rains.

10.4. Track FOD walk start/stop times and FOD BOSS/Magnet usage by 48 MXG units IAW area of responsibility map (see **Attachment 3**).

11. Operations Support Squadron/Airfield Manager.

11.1. Conduct daily FOD checks of the primary takeoff, landing, and taxi surfaces before the start of flying activities.

11.2. Request sweepers be dispatched as required.

11.3. Notify the FOD Program Monitor of any changes in airfield conditions that may cause a potential FOD hazard.

11.4. Attend the quarterly FOD meeting and brief status of airfield conditions and construction projects.

11.5. Ensure the number of individuals authorized to operate privately owned vehicles (POV) on the flight line are held to a minimum and are briefed on FOD prevention.

11.6. Ensure positive control of engineering or contractor personnel working on the airfield and inspect these areas during daily airfield inspections.

11.7. Forward copies of hazards/discrepancies identified in airfield inspections to the appropriate agencies upon request.

11.8. Provide monthly status of all airfield repair and construction projects affecting aircraft operation areas to the Wing FOD Manager.

12. Maintenance Operations Squadron/Plans and Scheduling. Provide a monthly summary of flying hours and landing for all assigned aircraft to Wing FOD Manager for inclusion in monthly FOD statistics.

13. Security Forces Squadron. Perform vehicle FOD checks, to include tires, when accessing aircraft movement areas from unpaved/deteriorated surfaces and at entry control points.

14. FOD Prevention Training. FOD prevention training starts with the initial orientation, continues throughout skills certification and annual refresher courses. At a minimum, training consists of the items listed in this instruction.

14.1. Initial Training.

14.1.1. The squadron FOD representative/workcenter supervisor gives all newly assigned personnel an initial FOD awareness briefing before performing duties on the flight line or in maintenance areas. Document this briefing as part of the individual’s initial evaluation in the member’s training record.

14.1.2. This briefing will include the following: Common causes of FOD, squadron policies, hardware and tool control policies and individual responsibility to prevent FOD. The briefing will

also include operation of vehicles in flight line areas, control of personal items, equipment, consumables and housekeeping. (Clean As You Go)

14.2. Task Training. Ensure FOD prevention training is part of all task certifications. Values of good workmanship, discipline and integrity. A quality product is FOD free.

14.3. Aircraft Structural Repair Training. A senior Aircraft Structural Repair technician shall be the certifying official for engine intake structural maintenance. Task training and certification will be documented in the member's training record.

14.3.1. Procedures required to properly seal off the engine intake and other areas where FOD may migrate.

14.3.2. Hardware and tool control, forms documentation, documentation of the AF Form 2519, All Purpose Checklist**,** Aircraft Intake Maintenance Checklist, as prescribed by MXG OI 21-116, F-15 Intake and Variable Inlet Ramp Maintenance and other applicable documents, and housekeeping. (Clean As You Go)

14.4. Annual Training.

14.4.1. Maintenance Training Flight, MOS/MXOT, incorporates FOD/DO prevention training for maintenance personnel during initial Block training and annual maintenance training.

15. General FOD Prevention. FOD prevention is the responsibility of all personnel that work on RAF Lakenheath. If you see FOD - **pick it up**. If it cannot be picked up, call for a sweeper.

15.1. All areas where aircraft are towed, taxied, or parked; shops and maintenance areas here equipment or components are worked on; and entry points to flight line will be kept free of foreign objects.

15.2. Eliminate FOD potentials before working on aircraft, engines, and other components. Remove all unneeded items from your person before starting any task. This includes inspecting boots and removing any embedded stones or other debris that may be in the sole of the boot. Be critical of this procedure before any maintenance around Aircraft Intake/Exhaust and Cockpit areas.

15.3. Do not stow trash/FOD in a toolbox. Issue FOD bags with dispatched flightline toolboxes, which will not to be permanently attached to the toolbox. Inspect and empty the FOD bag upon sign out/in.

15.4. While performing maintenance actions, personnel will keep their areas clean and FOD free.

15.5. Inventory and account for all tools, hardware, equipment, and devices used for performing the job at the start and completion of each task.

15.6. Properly cap all opening, ports, lines, hoses, electrical connections, and ducts to prevent FOD intrusion on aircraft not in use, uninstalled engines, and aerospace ground equipment (AGE). Ensure all work areas, aircraft, and equipment are FOD free.

15.7. Maintenance checklists will not use metal rings. Instead, replace them with zip ties or other suitable non-metallic security devices that will not easily detach or come apart.

15.8. During FOD removal procedures use vacuums when cleaning debris from aircraft, engine, or components. Compressed air **will not** be used to blow/remove FOD.

15.9. For recommended FOD prevention measures, refer to **Attachment 4** of this instruction.

16. Clothing Requirements/Restrictions.

16.1. Hats are not authorized for wear while on the flightline, with the exception of headgear authorized by published local policy letters used during inclement weather. Aircrew flightcaps will be secured prior to entering the flightline area to ensure that metal rank insignia cannot come off of the flightcap and migrate into sensitive cockpit areas, preventing loss of life or aircraft due to FO in the cockpit area.

16.2. Do not attach or wear any items (pens, pencils, whistles, etc.) on the armband.

16.3. Do not wear line badges or armbands during intake/tailpipe inspections.

16.4. Inspect boots for FOD before entering the intake area, tailpipe area, or stepping onto a variable ramp.

16.5. Exposed hoods of jackets, field jackets, parkas, gortex, and rain gear must be tucked into the back of the apparel and must stay clear of operating aircraft engine danger areas at all times.

16.6. During exercises, do not wear helmets within 50 feet of aircraft operating engines.

17. Housekeeping.

17.1. Implement and enforce the “Clean As You Go” concept while performing maintenance.

17.2. Protective Aircraft Shelter (PAS), hangars, and maintenance facilities will be kept FO free. The organization that uses the hangar will be responsible for ensuring it is FO free.

17.3. An organization performing maintenance in a hangar will accomplish a FO walk immediately following the removal of aircraft.

17.4. Empty all trash receptacles/containers on a daily basis or when full, whichever comes first.

18. Daily Operations.

18.1. Daily operations involve inspection, care, and maintenance of ramps, hangars, taxiways, and runways. To eliminate FOD, develop a comprehensive, scheduled maintenance system using sweepers and frequent inspections.

18.2. Periodically perform follow-up checks on sweeper routes to ensure sweeper effectiveness. To report and request a sweeper when necessary, contact MOC or the Wing FOD Manager for the request.

18.3. Inspect all AGE equipment used in and around aircraft for FOD before use/movement.

18.4. Contractors are responsible for any debris during and after construction. This includes roadways and hangars in the construction area.

19. FOD Prevention Walks.

19.1. FOD walks will be performed **before** the beginning of the day’s flying operations, with maximum participation that covers all aircraft taxiways, aircraft movement and parking areas, AGE subpools and shelter entrances. These FOD walks will be annotated on the weekly flying schedule.

19.2. Maintenance crews will perform complete FOD walks in their local areas (i.e. PAS and PAS apron, 25 feet in front of inlet and around aircraft) before any engine start. Maintenance supervisors will ensure their areas are clear of FOD.

19.3. A FOD walk is required at the termination of heavy rains and Phase II or higher winds.

19.4. FOD walk completion times for unit responsible areas (see **Attachment 3**) will be tracked by the owning group.

20. Rivet Replacement.

20.1. A two-person concept for intake rivet replacement is required, one person for monitoring tool and hardware accountability and one for the maintenance action. A FOD bag is required to secure all debris, including that created by maintenance. Use AF Form 2519, All Purpose Checklist, Aircraft Intake Maintenance Checklist, which is available in the Aircraft Structural Maintenance Section. Prior to performing maintenance, the checklist will be taped in plain sight on the side of the variable-ramp. All tools and hardware will be documented on this form before being placed in the intake. Upon completion of maintenance, a copy of the checklist with debris will be forward to the Wing FOD manager and remain on file for one year.

20.2. When repair or rivet replacement is required on the exterior of the intake, a 7-level Structural Maintenance Craftsman will determine if there is a possible migratory path from the area of maintenance to the inside of the intake.

21. Aircraft/Flightline Environment. It is the responsibility of all personnel to implement FOD prevention techniques during all aspects of maintenance, flight operations, and supporting requirements while performing functions on the flightline. Implement the following preventive measures while performing maintenance on the aircraft/flight line:

21.1. Make every effort to eliminate FO in and around Protective Aircraft Shelter (PAS), hangars, maintenance facilities, access routes, taxiways, and runways.

21.2. Keep all grounding points clean of debris at all times.

21.3. Never place aircraft forms, binders, and video recorder cartridges in or around aircraft intakes and/or nose wheel well areas.

21.4. Aircrew members must account for all equipment and personnel items before and after each flight. If items are identified as missing, aircrew will conduct an immediate search of the cockpit. If the item is not recovered, the aircrew must ensure that the proper documentation is annotated on the AFTO Form 781A Maintenance Discrepancy and Work Document**,** as prescribed by AFI 21-101.

21.5. Use extreme care during ground engine runs. The operator and ground crew will stay alert during ground operations to ensure the intake and exhaust area is free of FO.

21.6. Aircraft grounding cords will have only two allen head screws, or equivalent, securing grounding cables to the clip. Fill screw holes in with silicon sealant to prevent screws from backing out. Remove any unused screws.

21.7. Ensure all items removed from the aircraft are properly capped, marked and stored in racks or bins.

21.8. All panels, doors, and component hardware removed from the aircraft will be placed in marked screw bags attached to the item or aircraft as appropriate. As a minimum, screw bags will be marked with the aircraft tail number, panel number, or component identification, and amount of hardware.

21.9. Before closing any access doors or panels, and after each job completion, the technician will perform a FOD inspection and perform a tool accountability check.

21.10. Launch, Recovery, and Hot Pit Crews are responsible for keeping their operating areas free of debris. Perform a FOD walk before aircraft operations and after aircraft movement. Continually police these areas for FO.

21.11. Cut aircraft tires caused by FOD will be reported by the operating AMU to the Wing FOD Manager on the day of occurrence, with all pertinent information concerning the incident. When routing cut tires to EMS/Wheel and Tire Repair Facility ensure the AFTO Form 350, Reparable Item Processing Tag, is properly filled out with all applicable data.

21.12. 48th Civil Engineer Squadron FOD Prevention Officer will ensure all civilian contracted construction workers are briefed on FOD prevention procedures when working on or around the flightline.

21.13. Immediately report any damaged pavement on those areas to the Airfield Manager, MOC, or the Wing FOD Manager.

21.14. Utilize the FOD BOSS and Tow-Behind Magnets to the maximum extent within the areas of the Aircraft Maintenance Units. It is the goal to utilize the FOD BOSS for 10 hours per week per AMU. It is the responsibility of the AMU FOD representative to ensure this goal is achieved. FOD BOSS usage start and stop times will be called into MOC for tracking purposes.

22. Test Cell Environment.

22.1. Ensure the performance of adequate preventive maintenance procedures on the engine test facilities to eliminate deficiencies and potential FOD hazards (i.e. prior-to-use, monthly inspections and any other work carded inspection criterion).

22.2. Inspect all areas of the testing facility for cleanliness before accepting an engine/aircraft into Hush House (HH) 1, HH2, or T-9 test cell environment.

22.3. Properly secure tools, fixtures, dollies, test equipment, and ensure all required protective devices (engine inlet screens, covers for engine components, and instruments etc.) are on-hand, clean, and serviceable.

22.4. Before positioning the engine on the test stand and/or T-9, visually inspect the engine for serviceability. This entails the proper installation of components, loose or missing hardware, and the proper documentation of the work package. Ensure completion and documentation of all maintenance actions to include blade blends.

22.5. Ensure all test cell equipment, tools, and accessories are maintained and used in a manner to protect the engine from damage or contamination through tool abuse or in-use failure (clipping, cracking, peeling, fraying, etc.). Ensure the security of instrumentation lines, hoses, and wires to eliminate vibratory failure. Do not use lock wire or cotter keys for this purpose.

22.6. Before engine start, visually inspect engine intake/exhaust areas for potential FO and perform compressor rotation checks to determine there is no unusual noise or binding condition.

22.7. Perform a tool inventory to ensure accountability of all tools, hardware, and test equipment before and after engine testing.

23. Engine/Aircraft Intake/Exhaust Maintenance/Inspections.

23.1. Ensure intake coveralls (Bunny Suit) are in good repair and worn properly. Remove upon exiting engine/aircraft intake or exhaust.

23.2. Before donning intake/exhaust coveralls, remove all jewelry and other items from uniform pockets.

23.3. A 3 D-cell flashlight or stronger light source shall be used to inspect aircraft intakes and exhausts.

23.4. If a fan/compressor blade is found to have unserviceable damage that has not been blue-dyed or previously documented in the aircraft/engine forms, the technician will notify the Production Super who will then notify MOC. Cease maintenance until otherwise directed by an investigative authority.

23.5. The individual finding the discrepancy will place a RED X in the AFTO Form 781A Maintenance Discrepancy and Work Document**,** as prescribed by AFI 21-101, and annotate the discrepancy in the Core Automated Maintenance System (CAMS) describing the damage.

23.6. Only certified jet engine technicians will inspect the discrepancy; review the aircraft/engine forms and determine corrective action IAW applicable technical data. If no further damage is found while inspecting the compressor/fan blades, blend and blue-dye the blade(s) according to applicable technical data. Complete CAMS, send a CAMS product within 24 hours to Engine Management Element (EME) for entry into Comprehensive Engine Management System (CEMS), and notify the Wing FOD Manager. The CAMS product will include description of the blend to include dimensions, area, type of blend, and the number of blades blended.

23.7. If the discrepancy was previously documented in the aircraft/engine forms and CAMS/CEMS, and the blue-dye had been washed away, a certified technician will ensure smoothness of the blended, contoured area and blue-dye according to applicable technical data.

23.8. Before performing maintenance in the aircraft inlet area, seal off the engine intake by using barrier paper, masking tape, or equivalent. A “Red X” entry will be placed in AFTO Form 781A, Maintenance Discrepancy and Work Document**,** as prescribed by AFI 21-101 (installed engines only) documenting this condition. This action will ensure no FO migrates into the engine intake.

23.9. Vacuum and inspect inlet ramps for FO after completion of any maintenance or lubrication in the area.

23.10. Only trained/certified structural repair technicians will perform structural maintenance in the engine intake. Document all structural engine intake maintenance using a “Red X” symbol in the AFTO From 781A and/or engine work package and CAMS. A certified structural repair technician will perform and sign the corrective action. An additional certified structural repair technician (7-Level or above, not wavered) inspects the work and clears the “Red X” symbol. Complete AF Form 2519, and return to Sheet metal for filing.

23.11. Rivet guns will have stem catch bags installed.

23.12. Immediately inventory all Consolidated Tool Kits (CTK) after intake/exhaust maintenance and before aircraft engine start.

24. Aircraft/Engine Run. Prior to engine motoring/start:

24.1. Install and secure panels forward of the intake using all associated hardware. The only exceptions are when aircraft technical order or local directives outline procedures for troubleshooting and when performing maintenance, which requires forward door access.

24.2. Account for all fasteners and ensure they do not present a FOD hazard.

24.3. Ensure run-up area is free of FO and secure or remove loose equipment (maintenance stands, support equipment, tool boxes, etc.) from the aircraft danger area.

24.4. Stow restricted area badges, clothing, and other items that could be ingested within the 25-foot danger area.

24.5. Remove unnecessary items from your person, such as keys, watches, pens, and pencils that may become a hazard within the 25-foot intake danger area and the 200-foot exhaust danger area.

24.6. Ensure grounds and surfaces where maintenance of aircraft and Aerospace Ground Equipment (AGE) are free of objects that could cause damage by jet engine inlet ingestion or exhaust blast.

24.7. Before engine start, after shutdown, and after any intake maintenance each engine intake and exhaust will receive a FOD inspection (this is not required on engine shutdowns for “red ball” maintenance or Hot Pit refueling).

25. Ice FOD Conditions/Notifications.

25.1. Production supervisors will ensure no maintenance ground runs are performed, while under check sheet 5 for induction icing conditions, unless AMXS/CC or authorized representative waives restrictions. Contact the MOC for the waiver request.

25.2. Before starting engines, inspect inlet/intake for ice or moisture. If present, remove all ice and moisture from intake(s) before starting engines.

25.3. After engine start, ensure adherence to engine anti-ice procedures per the applicable technical data.

25.4. Continually observe air inlet leading edge for ice formation. Any time an engine is shut down due to ice formation, perform inlet/intake inspection. If ice forms during idle runs, the ground observer will notify the operator to shut down the engine. If ice forms during operations above idle, immediately snap engines to idle, cool engines according to technical data, then shut down. When icing conditions are observed, notify MOC to initiate check sheet 5. MOC will notify QA and the wing FOD monitor

25.5. To accomplish inlet observation, position a ground observer outside the danger zone and use a flashlight to observe the intake/inlet of the aircraft during engine operation. The ground observer will be responsible for the safety of personnel in the immediate aircraft area. Do not enter the aircraft danger areas for any reason.

25.6. Throughout the rest of the day, all maintenance personnel, especially launch/recovery and End of Runway (EOR) crews, will be alert for ice buildup.

26. Cockpit Foreign Object Prevention.

26.1. Remove all unnecessary items and account for all personal items upon entering and exiting cockpit.

26.2. Place all tools, small parts, and hardware needed to perform maintenance in the cockpit in a tool bag or pouch. Do not place small tools and hardware on consoles or canopy sills where they could be easily knocked off into the cockpit.

26.3. Inspect cockpit for FO before performing maintenance in, entering into, or identifying aircraft as crew ready.

26.4. Use drop cloths or barrier paper where the potential exists for FO to be dropped into critical or inaccessible areas.

26.5. Instrument knobs are easily lost during maintenance and flying operations. Make every attempt to ensure the security of instrument knobs while performing cockpit inspections.

26.6. Maintenance personnel will enter a "Red-X" in the AFTO Form 781A when an item is lost and initiate lost tool procedures. If the item is not found, the weapon system will be impounded and remain so until every effort has been made to retrieve the lost item.

27. Cockpit FO Responsibilities/Procedures.

27.1. Notify maintenance supervision, MOC, and Quality Assurance upon discovery of the lost tool/ item. QA will begin the impoundment paperwork. Enter a "Red-X" in the AFTO Form 781A stating "Possible FO in cockpit (and a short description of the FO)". Conduct a thorough search after completion of each step.

27.2. Search other cockpit areas as necessary to ensure that the item did not migrate during flight or maintenance. Additionally, search cabin pressure regulators.

27.3. Remove components in the immediate area of the loss and as necessary to facilitate search. (i.e. map cases, instruments, FOD curtain, kick panels, etc.)

27.4. Egress will raise or remove seat(s) as necessary to aid in the search. If the item is not found following a minimum 2-hour search, to include use of borescope, the seat and/or canopy will be removed. Egress will then search the seat itself; its surrounding structure, seat components, and survival equipment.

27.5. Remove additional components and perform additional steps as directed by the impoundment official.

27.6. If the object is still not found, inform the impoundment official, who will coordinate with QA and MXG/CC to determine whether to continue the search or terminate the impoundment.

28. Tool Accountability/Composite Tool Kit (CTK)

28.1. The primary objective of a positive tool control program is to eliminate accidents/incidents and loss of life or equipment due to tool FOD. Refer to AFI 21-101 and applicable supplements for detailed instruction for the program.

28.2. Tools/equipment should be tethered or suitably restrained to the user in areas around structural work stands or any locations where a dropped article could result in damage to aircraft surfaces or injury to personnel, or where difficulty in retrieval would result if the tool were dropped.

28.3. Tools will not be stored or carried in pockets while working on aircraft or equipment. All tools should be carried and stored in a tool tray or soft tool bag. Do not place tools in a position that would cause damage to aircraft/engine surfaces or injury to personnel.

28.4. Recommend diagonal cutters, side cutters, safety wire pliers, and similar pliers have the jaws either potted with room temperature vulcanized rubber or equipped with jaw pads from the manufacturer. Check pliers after each use to ensure all FOD is removed from the pliers and discarded.

29. Hardware Control.

29.1. Scrounge bags or excess hardware storage collection are NOT authorized.

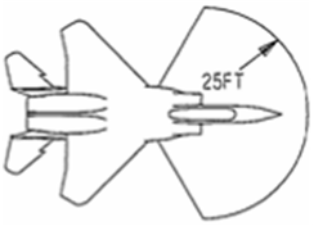
29.2. Strictly control all hardware and expendable items. These items will be limited to the amount necessary to accomplish the specific task. Under no circumstances will these items exceed the amount that can be accounted for. Bench stocks will be strictly controlled and monitored in a controlled access area to prevent personnel from taking excess quantities into work areas.

29.3. Issue bench stock items on a one-for-one basis to the maximum extent possible; return excess hardware to the proper bench stock location.

29.4. Use cloth bags with draw strings or other containers that can be sealed, securely attached to the component, and labeled to store hardware and small parts. Attach bags to removed panels/components and annotate with the aircraft/equipment serial number, job control/work order number, and the component nomenclature.

29.5. Document loose and missing fasteners found near the aircraft intake danger zone (defined as within 25 feet of the air inlet as shown in the diagram) in the AFTO Form 781A with a “Red-X”. For missing fasteners, inspect the engine for FOD.

Figure 1. Aircraft Intake Danger Zone.



29.6. Position FOD containers in easily accessible locations within the work area; empty these containers upon task completion, at the end of each shift or when full.

30. Lost Tools.

30.1. If the item cannot be located within 60 minutes; notify QA, initiate ACC Form 145, Lost Tool/Object Report, as prescribed by AFI21-101Sup 1 and annotate AFTO Form 781A or other maintenance records with a “Red-X” and a description of the situation and search procedure used. Notify the Production Superintendent who will ensure the workcenter supervisor, CTK custodian, MOC, QA,

and all appropriate levels of supervision are notified. The CTK custodian is responsible for initiating the ACC Form 145. Forward a copy of ACC Form 145 to QA within 5 duty days.

30.2. Utilize all resources available in searching for a lost item in the attempt to find it. Searching may require component removal, depaneling, nondestructive inspection, borescope inspection, and X-ray.

30.3. Non-aircraft maintenance personnel will maintain control of all items while operating on the airfield by whatever means necessary. If an item becomes lost or cannot be accounted for, notify the MOC and Airfield Management immediately. Provide them with a description of the item and all areas traveled while on the airfield. The Airfield Manager will coordinate a search effort and notify the MXG/CC of the incident and results of the search.

31. Vehicles.

31.1. Adhere to all airfield signs and notifications; perform vehicle/tire FOD checks wherever specified or appropriate. During FOD checks, the vehicle must be secured from the possibility of inadvertent movement. If one individual remains behind the wheel during FOD checks, the engine may be left running with the vehicle in "park" (automatic transmissions) or "neutral" (manual transimissions) and the parking/emergency brake set. If there is no one available to sit behind the wheel during FOD checks, the engine must be turned "off" and the parking/emergency brake set. Automatic transmissions will be placed in "park".

31.2. **All** vehicles using the flight line, including POV's, are subject to FOD inspections.

31.3. Vehicles must be free of FO, including tires, engine compartments, and the interior/exterior of the cab.

31.4. All Government Owned Vehicles (GOV) that have access to the flightline must have a FOD container. The unit's vehicle control monitor will determine the type and size of FOD container to use. All FOD containers must be secured to the vehicle, have a closeable lid and have "FOD" stenciled in contrasting, no smaller than 2-inch letters. The FOD container must be annotated on the vehicle inspection form.

31.5. Recommend vehicle keys be secured to a 3 inch x 5 inch placard (i.e. Plexiglas, metal encased in a plastic sleeve, and may also be local manufactured from sheet metal) covered on one side by a light colored reflective tape to enhance its visibility.

31.6. Additional equipment for vehicles (i.e. ice scraper, extension cords, flashlights) will be marked with the vehicle registration number and annotated on the vehicle inspection form.

31.7. Fire extinguishers that are carried on vehicles/equipment that operate on the flight line must have the extinguisher marked with the vehicle registration number and will have the safety pull-pin attached to the extinguisher by lanyard.

31.8. All vehicles should only be driven on clean, paved surfaces. If a vehicle is forced to depart the paved surface for any reason, another complete FOD check must be performed.

31.9. Prior to entering a taxiway or ramp area from any flightline entrance or unpaved surface, all vehicle operators will conduct a Roll-Over FOD Check. Vehicles will be checked by the driver and/or vehicle occupants for foreign objects in the tire treads. For a roll-over FOD Check, all portions of vehicle tires must be carefully inspected by pulling forward (approx ½ tire rotation) after initial check

of visible tire area to inspect remaining tire area. If debris is carried onto the flightline, the driver will stop the vehicle and pick up all debris before departing the area.

31.10. Use the nearest entry control point or route that crosses the least amount of taxiways to reach their appropriate parking areas/workcenters. All vehicles will come to a complete stop before proceeding across any FOD checkpoint or active taxiway. After checking for aircraft/vehicles, proceed across while checking the driving lanes for FOD. If FOD is discovered, vehicle operators will safely stop their vehicle and pickup/remove it from the pavement. If debris is more than can be picked up, notify Airfield Management at 226-4186.

31.11. The following areas will be exempt from the performance of tire FOD checks. Vehicles crossing these areas will be extra vigilant for FOD.

31.11.1. Sierra Taxiway crossing located between the Strike Eagle Complex and Hangar 7. POVs will proceed through this checkpoint directly across the taxiway; deviation to the AGE access road is not authorized.

31.11.2. November Taxiway crossing into the main Entry Control Point (ECP) into green section.

31.12. When exiting the rear side of Strike Eagle Complex, vehicles performing thorough Roll-Over FOD checks before entering the taxiway are not required to perform a second FOD check when entering the Blue AMU (Alpha Ramp Gate).

31.13. When exiting the gates beside AGE Flight or behind Hangar 6, vehicles performing thorough Roll-Over FOD checks before entering the taxiway are not required to perform a second FOD check if immediately entering Red AMU (Delta Ramp Gate).

31.14. All vehicles, at all times, will be free of litter, rocks, or other debris.

32. Reporting/Investigation.

32.1. All incidents of FOD/DO must be reported and investigated. When a FOD incident occurs, initiate the Flightline Emergency Action Checklist 10, Foreign Object Damage**.** In the event of a Dropped Object, initiate the Flightline Emergency Action Checklist 31, Dropped Object.

32.2. Upon discovery of a FOD/DO cease operations in the affected area of the aircraft/engine and notify the flightline expeditor/supervisor and the MOC.

32.3. MOC will notify QA, Wing FOD Monitor, and Wing Safety of the incident.

32.4. MOC will notify Wing Safety of all bird strikes. Maintenance personnel will collect and place any existing bird remains in a plastic bag and turned into Wing Safety.

32.5. 48 FW/SE will coordinate with Squadron Flight Safety Officers (SFSO) and maintenance for collection of beaks, feet, and feathers after strikes. Ensures bird remains are identified locally through the base bird control contractor. 48 FW/SEF will then send the remains to the Smithsonian IAW AFIs 91-204 and 91-223 for official identification.

32.6. For installed engine FOD, enter a “Red-X” in the AFTO Form 781A with the discrepancy, “Suspected/Actual FOD to Engine #.” Notify MOC, stop all maintenance on the affected engine, and do not continue until authorized by the 48 MXG/CC or designated representative with concurrence of the Safety Investigation Office, Wing FOD Manager or QA.

32.7. For an engine bird strike, enter a "Red-X" in the AFTO Form 781A with the discrepancy, "Suspected/Actual Bird Strike Damage to Engine #."

32.8. Inspect the engine compressor section for engines receiving FOD, suspected FOD, or bird strike. If damage is observed on the fan blades/stators, borescope fan module through AP1 and AP7. If additional fan damage is observed, continue to borescope the core through AP2 and AP3.

32.9. Perform a hardware accountability inspection on the applicable aircraft, engine and components receiving FOD or suspected FOD damage.

32.10. If confirmed engine FOD, the appropriate impound authority will impound the aircraft/engine and notify the MXG/CC, Operations Group Commander or their representative of the incident.

32.11. QA will secure the aircraft forms or engine work package for review.

32.12. The Wing FOD Manager will initiate a FOD report and forward it to the USAFE FOD Manager within 24 hours of the incident.

32.13. With Propulsion Flight assistance, the Wing FOD Manager will inspect the damaged engine to determine if FOD entered the intake or material failure occurred internally. If there is no evidence of material failure, the aircraft and/or engine will be impounded.

32.14. The impoundment official or other investigating office will interview personnel involved and take written statements as necessary of any recent action on the aircraft or engine to help determine the cause of FOD.

32.15. The impoundment official or other investigating office will also inspect the aircraft and/or engine and associated equipment for missing hardware, panel, etc. to help determine the cause of the damage. Inspection areas should include but not be limited to cockpit areas, areas forward of the intakes, nose and main wheel well areas, top of the aircraft, shelter, aprons and taxiways.

32.16. If the cause of the FOD can not be determined, lower the variable-ramp to the maintenance position and remove panels 14, 19, 21, 25L/R, and 38 and visually inspect variable-ramp areas for any defects that might have caused the FOD. Nondestructive Inspection section will X-ray the variable-ramps and lower louver areas according to TO 1F-15A/E-36, Nondestructive Inspection. Compare these X-rays with previous X-rays of the ramp to determine FO movement or missing items.

32.17. The wing or MAJCOM (through the Chief of Safety) appoints an investigation officer for reportable FOD events under the provisions of AFI 91-204, Safety Investigation Reports, and controls all aspects of the investigation. The Wing FOD Manager with QA assistance investigates FOD events not reportable under the provisions of AFI 91-204 with the assistance of engine specialists and/or Propulsion Flight.

33. Blade Blending/FOD Repair.

33.1. Jet engine blades and stator vanes will be blended only by certified/qualified personnel in accordance with AFI 21-101. Proper blending is critical to maintaining structural integrity and preventing catastrophic blade failure due to induced stress risers, weakening of critical area, and other blending errors.

33.2. Blended blades will be marked using layout dye to permanently identify damaged areas. FOD damage that is determined to be serviceable without blending will also be marked with layout dye.

33.3. All FOD will be documented in accordance with TO 00-20-1, Aerospace Equipment Maintenance Inspection, Documentation, Policies, And Procedure, and reported to the Wing FOD Manager and QA. A records action event will be documented in CAMS for all FOD discovered, whether it's serviceable as is or requires repair. Entries will include size, amount, and location of damage. It's important that the cumulative amount of FOD damage be tracked to evaluate engine condition and to prevent impoundment of previously evaluated engine.

33.4. Borescope inspection ports AP1 and AP7 anytime FOD is found on the first stage fan blades. Further borescope will be required, per applicable technical data, if FOD is discovered on those stages. When second and third stage fan blades require borescope inspection, the leading edge of the fourth stage will be inspected for damage. All FOD found will be documented; QA, Wing FOD Manager, and EME will be notified.

34. FOD Prevention Incentive Program.

34.1. The purpose of the wing's FOD Prevention incentive program is to acknowledge personnel for their participation in the prevention of FOD and to promote FOD prevention awareness. All awards are subject to change due to availability of gifts, sponsors, and adjustments implemented to the program. The awards are as follows:

34.2. The Golden Bolt Finder Award**.** The golden bolt will be placed monthly throughout the flight line and off-equipment areas. The placement of the bolt will be in a manner that each of the participating squadrons have the opportunity of finding it within the year. The bolt will be placed for a finite amount of time, if the bolt is not found within that time frame; there will be no winner for that month. The finder of the bolt will receive the first five items from the FOD incentive package listed in paragraph **34.5.**

34.3. The FOD Poster of the Month Award. All personnel assigned to RAF Lakenheath may submit FOD posters. The poster must promote a strong FOD prevention message which may be hand drawn or computer generated on 8 ½" x 11" white paper. If aircraft are depicted on the poster, they must be of the type locally assigned. The FOD Prevention Committee will vote on all the posters submitted during the monthly meeting. Computer generated designs are acceptable and will be submitted along with the graphical file on a floppy or compact disc. The designer of the winning poster will receive the first five items listed in paragraph **34.5.**

34.4. The FOD Professional of the Month Award. Selections for this award are based on nominations submitted by supervisors through their squadron FOD monitors or alternates. Individuals submitted must have demonstrated exceptional FOD awareness and contributions to the FOD prevention programs. If multiple submissions are made at the squadron level, the unit FOD representative will select the most deserving candidate for submission. Nominations will be in letter format with one nominee per letter submitted during the monthly FOD meeting. FOD committee members will vote on the letter that would have the most impact in FOD prevention. The winner will receive the first five items listed in paragraph **34.5.**

34.5. The FOD Professional of the Quarter Award**.** The Quarterly FOD incentive is awarded to the individual that has made significant contributions to the FOD prevention program. The winner is selected against all the monthly FOD winners for that quarter. The Wing FOD Manager or alternate reserves the right to submit additional nominees that deserve consideration for the quarterly award. The winner will attend the quarterly FOD briefing and will be presented a plaque by the 48th Fighter

Wing Vice Commander (48 FW/CV). They will also receive the first four items as well as items six and seven listed in paragraph **34.5.**

34.6. FOD Incentive Package Award Items: AAFES generously contributes gift certificates, coupons, and theater passes to the 48 FW FOD Prevention Program. Availability of these items is subject to change at the discretion of the AAFES General Manager.

34.6.1. Letter of Appreciation.

34.6.2. Certificate of Appreciation.

34.6.3. Two free meal coupons from the Army Air Force Exchange Service (AAFES).

34.6.4. Two free movie passes from AAFES.

34.6.5. One-day pass.

34.6.6. Three-day pass.

34.6.7. $25.00 gift certificate from AAFES.

34.6.8. FOD Professional of the Quarter Plaque.

35. The 48 FW Squadron FOD Prevention Trophy.

35.1. This award is based on the fiscal year calendar. It is awarded to the squadron/AMU that accumulates the most points at the end of the fiscal year. Criteria used to determine squadron points are as follows:

35.1.1. 10 points - FOD Professional of the Month.

35.1.2. 10 points - FOD Poster of the Month.

35.1.3. 10 points - Finder of the Golden Bolt.

35.1.4. 10 points - FOD Professional of the Quarter.

35.1.5. 15 points - Automatically awarded to each squadron at the beginning of the quarter for housekeeping.

35.1.6. 2 points - For each FOD letter submitted to the Wing FOD Manager.

35.1.7. 5 points - Deducted for failure of squadron FOD representatives to attend the monthly FOD meeting.

35.1.8. 2 points - Deducted for each failed QA inspection related to the FOD program.

35.1.9. 2 points - Deducted for any work center within the squadron having an outdated FOD board. Work centers maintaining a FOD bulletin board have 5 duty days to update the board from the day that monthly meeting minutes are posted on the FOD prevention program public folder.

35.1.10. 1 point - Deducted from the squadron/work center to which FOD is found in their area of responsibility during spot inspections by the FOD manager. 1 point deduction will be for each piece of FOD that is found, maximum deduction of 10 points.

35.1.11. 10 points - Will be deducted from squadrons that contribute to the FOD rate.

35.2. The winning squadron will receive the 48 FW FOD trophy. The trophy will be presented during the last fiscal year quarterly FOD briefing by the 48 FW/CV. The winning squadron will display the trophy for one full fiscal year.

36. Adopted Forms.

36.1. ACC Form 145, Lost Tool/Object Report

36.2. AF Form 2519, All Purpose Checklist**,** Aircraft Intake Maintenance Checklist

36.3. AF IMT 847, Recommendation for Change of Publication;

36.4. AFTO Form 350, Reparable Item Processing Tag

36.5. AFTO Form 781A, Maintenance Discrepancy and Work Document

ROBERT P. STEEL, Brigadier General, USAF
Commander, 48th Fighter Wing

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 91-204, Safety Investigation Reports

AFI 21-101, Aircraft and Equipment Maintenance Management

AFMAN 37-123, Management of Records

AFPD 21-1, Managing Aerospace Equipment Maintenance

MXG OI 21-116, F-15 Intake and Variable Inlet Ramp Maintenance

TO 1F-15A/E-36, Nondestructive Inspection

TO 00-20-1, Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedure

Abbreviations and Acronyms

AAFES—Army Air Force Exchange Service

AGE—Aerospace Ground Equipment

CAMS—Core Automated Maintenance System

CE—Civil Engineering

CTK—Consolidated Tool Kit

DO—Dropped Object

EME—Engine Management Element

EMS—Equipment Maintenance Squadron

FAST—Failure Analysis Service Technology

FOD—Foreign Object Damage

IAW—In Accordance With

MOC—Maintenance Operations center

QA—Quality Assurance

NDI—Non Destructive Inspection

MOS—Maintenance Operations Squadron

OSS—Operations Support Squadron

PAS—Protective Aircraft Shelter

POV—Privately Owned Vehicle

FW/CV—Wing Vice-Commander

Terms

Foreign Object Damage (FOD)—Any damage attributed to a foreign object that can be expressed in physical or economic terms, which may or may not degrade the product's required safety and/or performance characteristics.

Clean As You Go—Clean the immediate area when work cannot continue. Clean the immediate area when work debris has the potential to migrate to an out of sight or inaccessible area that could cause damage and/or give the appearance of poor workmanship. Clean the immediate area after work is completed and prior to inspection. Clean at the end of each shift. If you drop something or hear something drop, **Find It and Pick It Up!**

Dropped Object (DO)—A dropped object is any aircraft part, component, surface, or other item lost during aircrew operations, unless intentionally jettisoned from engine start to engine shutdown. Inadvertently released munitions or munitions released in excess of the quantity selected by the aircrew, or a multiple release, are not considered dropped objects and will be reported IAW AFI 91-204, Safety Instruction and Reports.

Attachment 2

FOD COMMITTEE MEMBERSHIP

A2.1. 48 FW MAINTENANCE GROUP

QA

CMS

EMS

MOS

MUNS

492 AMU

493 AMU

494 AMU

56 AMU

A2.2. 48 FW MISSION SUPPORT GROUP

SFS

CES

LRS

CS

A2.3. 48 FW OPERATIONS GROUP

OSS

NOTES:

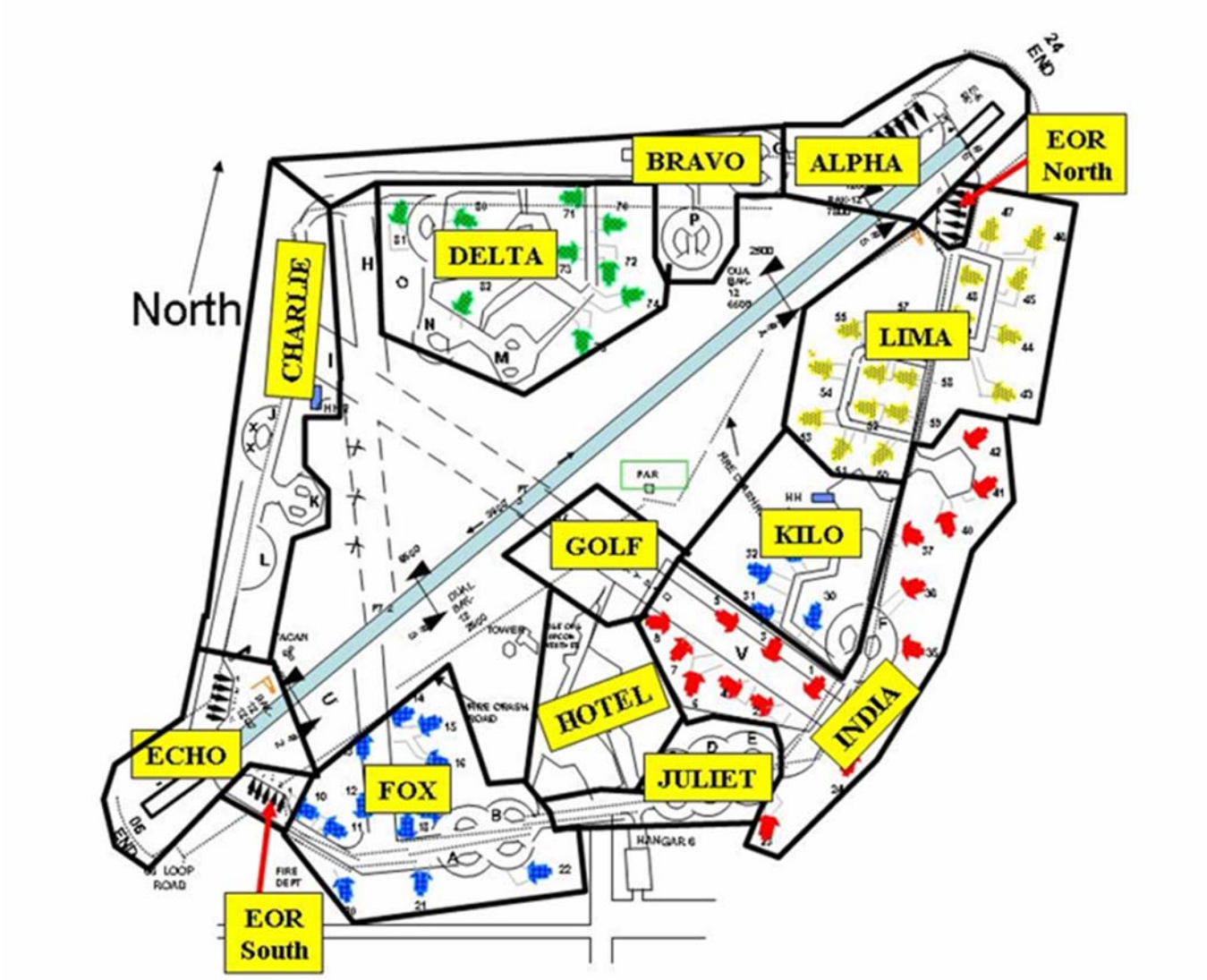
1. Monthly meetings are mandatory for the squadron primary/alternate FOD program representatives (E-7 and below).
2. Quarterly meetings are mandatory for squadron commanders responsible for personnel accessing the flightline area. If commanders are not available to attend, then a subordinate officer acting in the commanders place will be appointed to attend.

Attachment 3

FOD WALK AREAS OF RESPONSIBILITY

(For FOD Walk responsibilities, see Paragraph **19.** of this instruction)

Figure A3.1. FOD Walk Areas of Responsibility.



UNIT RESPONSIBLE AREAS

ALPHA	48 OSS		GOLF	48 LRS
BRAVO	48 MUNS		HOTEL	48 CMS
CHARLIE	48 MUNS		INDIA	494 AMU
DELTA	56 AMU/RQS		JULIET	48 EMS
ECHO	48 OSS		KILO	48 CMS
FOX	492 AMU		LIMA	493 AMU
EOR NORTH	48 AMXS		EOR SOUTH	48 AMXS

Attachment 4

RECOMMENDED FOD PREVENTION MEASURES

A4.1. Inspect aircraft for the following:

A4.1.1. Condition of boarding ladder (loose hardware, cracked/broken braces, etc.).

A4.1.2. Inspect panels for loose, missing, and proper size hardware; Also ensure that panel removal/ installation and missing/damaged hardware are documented.

A4.1.3. Condition and proper use of covers and plugs.

A4.1.4. Aircraft grounding cables will be serviceable and have unused set-screws removed.

A4.1.5. Check cockpit and interior of aircraft for FOD.

A4.1.6. All accessible areas and where maintenance is being performed for FOD.

A4.1.7. Ensure all tires are FOD free.

A4.2. Inspect flightline support equipment, AGE, and vehicles for the following:

A4.2.1. Cleanliness, loose hardware, and the proper tire valve stem caps (plastic only).

A4.2.2. Pintle hook cotter pin installed and secured with a lanyard. (Safety-wire will not be used).

A4.2.3. FOD containers secured to vehicle and stenciled with contrasting letters no smaller than 2 inches.

A4.2.4. Vehicle keys permanently attached to a placard (i.e. Plexiglas or local manufactured sheet metal) and reflective tape.

A4.2.5. Ensure all tires are FOD free.

A4.3. Inspect support sections for the following:

A4.3.1. Control of bench stock (nuts, bolts, etc.).

A4.3.2. Loose/missing hardware on equipment.

A4.3.3. FOD in CTKs, bins and test equipment containers.

A4.3.4. Ensure continual housekeeping, “Clean As You Go”.

A4.4. Inspect phase docks for the following:

A4.4.1. Cleanliness during maintenance.

A4.4.2. Ensure strict hardware and part control during all phases of maintenance. Use screw bags/ FOD cans as appropriate.

A4.4.3. Ensure all areas are inspected for FOD before installing panels, closing engine panels or compartments.

A4.5. Inspect aircraft hangars for the following:

A4.5.1. Cleanliness/housekeeping.

A4.5.2. Trash cans/FOD containers used appropriately.

A4.5.3. Door tracks/drainage system for FOD.

A4.6. Inspect CTKs for the following:

A4.6.1. Serviceability of box (latches, hinges, pin, etc.).

A4.6.2. Serviceability and etching of tools.

A4.6.3. Updated inventory checklists.

A4.6.4. FOD (especially under tools and foam inserts).

A4.7. Inspect flightline fire extinguishers for the following:

A4.7.1. Proper valve stem caps (plastic only) on pneumatic tires and charging stem.

A4.7.2. Security of attaching hardware (nuts/bolts) and lead seal.

A4.7.3. Trash/FOD in/on the unit.

A4.8. Inspect spare engine ready lines for the following:

A4.8.1. Use of covers/plugs on the engine inlet/exhaust, tubing, and components.

A4.8.2. Area for cleanliness and FOD.

A4.8.3. Engine exterior, inlet, and tailpipe for FOD.

A4.9. Inspect PAS and Test Cell Facilities:

A4.9.1. Cleanliness/good housekeeping.

A4.9.2. Trash/FOD containers in use.

A4.9.3. Door tracks/drainage system for FOD.

A4.9.4. Condition of ramp/exhaust deflector.

A4.10. Performing FOD Walks:

A4.10.1. Follow-up/supervisory involvement.

A4.10.2. Concentrate on aircraft taxiway/parking spots.

A4.10.3. Check drainage/recessed-grounding points.