



DEPARTMENT OF THE NAVY
NAVAL AIR STATION, MERIDIAN
TRAINING AIR WING ONE
255 ROSENBAUM AVENUE
MERIDIAN, MS 39309-5003

NASMERINST 13700.2F
COMTRAWINGONEINST 13700.1J
N31
NOV 07 2006

NASMER INSTRUCTION 13700.2F
COMTRAWING ONE INSTRUCTION 13700.1J

From: Commander, Naval Air Station, Meridian
Commander, Training Air Wing ONE, Meridian

Subj: FOREIGN OBJECT DAMAGE (FOD) TO AIRCRAFT GAS TURBINE
ENGINES

Ref: (a) COMNAVAIRFORINST 4790.2 series
(b) CNATRAININST 13700.2L

Encl: (1) FOD Prevention Areas of Responsibility
(2) Format for Engine FOD Incident Report
(3) Vacuum Sweeper Truck Schedule

1. Purpose. To establish an aggressive Foreign Object Damage (FOD) Prevention Program detailing policy, responsibilities, and requirements for the reduction of damage to aircraft, engines, support equipment, and other aeronautical equipment. Furthermore, this instruction provides uniform FOD reporting procedures via Naval Air Station, Meridian CNATRA DET Quality Assurance (QA).

2. Cancellation. NASMERINST 13700.2E and COMTRAWINGONEINST 13700.1H. This instruction has been revised and should be read in its entirety.

3. Discussion

a. FOD is the major cause of premature engine removal in the Navy. These removals aggravate critical shortages of spare engines and account for a sizeable percentage of the Navy's annual engine support budget. Most FOD can be attributed to poor housekeeping, facility deterioration, improper maintenance practices, or carelessness. FOD must be controlled.

b. An important factor in damage prevention is the immediate and thorough investigation of each incident. If conducted properly, a comprehensive investigation can identify and assess maintenance and operating practices which contributed to the incident.

If the exact cause of engine damage can be determined, steps can be taken to preclude future damage from the same or similar causes.

c. Training Air Wing ONE (TW-1) activities operating aircraft and those directly supporting flight operations shall take action to prevent aircraft engine damage.

Damage prevention programs shall incorporate the spirit and intent of the FOD and engine damage prevention programs delineated in references (a) through (b) and this instruction.

d. The FOD prevention program is applicable to commercial and government activities performing contract maintenance, production, or other support functions on Naval aircraft and installations. Applicability also applies to all Navy and Marine Corps activities directly involved in the repair of aircraft, gas turbine engines, Systems Engineering (SE), units directly supporting flight operations, and all commercial/government activities operating in the immediate vicinity of the flight operation areas.

4. Definitions

a. FOD is 'foreign object damage' to a gas turbine engine caused by ingestion of objects not organic to the affected engine. Engine FOD incidents are categorized as reportable and non-reportable.

(1) Reportable FOD is defined as one which requires aircraft engine/module removal, including those occurring on an engine test cell.

(2) Non-reportable FOD is defined as repair without engine, fan blade, or module removal.

b. FOD shakers are metal grates designed to remove loose FOD.

5. Action

a. Airfield FOD Prevention Areas of responsibility are laid out in enclosure (1).

b. All Hands shall ensure:

(1) All vehicles entering the ramp area shall drive over the FOD shaker. Emergency vehicles involved in actual emergencies and vehicles without suspension (i.e. fuel trucks) are the only exceptions to the rule. Those vehicles without suspension will stop prior to ramp entry and check entire vehicle, including tire treads, for FOD.

(2) The FOD shakers are designed to remove loose FOD. Vehicles with clumps of mud or other debris must be rinsed of foreign matter prior to ramp entry.

c. Maintenance Officer, TW-1 (CNATRA DET OIC) shall ensure:

(1) Designation, in writing, for a FOD Prevention Officer for TW-1 in accordance with reference (a).

(2) Serve as the point of contact for all matters pertaining to FOD IAW reference (a), and liaison with squadron Maintenance Liaison Officers to ensure a FOD Prevention Program Manager is designated in writing for respective squadron.

(3) CNATRA DET Meridian QA member is available for participation as a FOD investigation team member.

(4) CNATRA DET Meridian QA expedites all FOD Incident Reports enclosure (2), through CNATRA DET OIC.

(5) CNATRA DET Meridian QA shall notify TW-1 FOD Prevention Officer upon initial notification of suspected FOD incidents.

d. Squadron Maintenance Liaison Officers shall:

(1) Designate, in writing, a FOD Prevention Program Manager IAW reference (a).

(2) Establish and assign, in writing, a designated FOD Prevention Program Manager and a FOD Prevention/Investigation Department; NAS Safety Department and CNATRA DET Meridian QA shall be included members of the FOD Prevention/Investigation Team IAW reference (a).

e. FOD Prevention Program Managers shall:

(1) Ensure vigorous participation in FOD prevention, accurate reporting procedures, and compliance with references (a) through (b).

(2) Upon initial notification of a suspected FOD incident, call CNATRA DET Meridian QA, ext 2399 or 2471, no later than 1600 local time the following workday. A control number will be assigned at this time to be utilized in conjunction with enclosure (2), Engine FOD Incident Report, to ensure positive engine tracking.

(3) Designate and brief the Detachment FOD Officer for each Carrier Qualification (CQ) or Weapons/Training Detachment operating outside local area.

f. Aircraft maintenance contractors shall:

(1) Upon initial notification of suspected FOD incidents call CNATRA DET Meridian QA (N4M) office immediately. Each FOD incident shall be investigated, (including FOD due to natural causes, such as birds or ice) and an Engine FOD Incident Report, enclosure (2), initiated. The FOD Prevention Program Manager, TW-1 Safety Department, NAS Safety Department, and CNATRA QA shall be included as members of the FOD Prevention/Investigation Team per reference (a).

(2) Route the FOD Incident Report to CNATRA DET MRDN QA within five (5) working days of discovery for all reportable FOD. The report will satisfy Class C mishap routing, required per OPNAVINST 3750.6, provided damage is limited to the engine. A copy of the Engine FOD Incident Report shall accompany all FOD related retrogrades. Miscellaneous/History page entries in the engine AEST or MSR indicating the extent, cause and disposition of FOD engines are required. Included in the AESR entry, the VIDS/MAF (OPNAV 4790/60) Job Control Number (JCN) and the Serial Number (SERNO) and Date Time Group (DTG) of the FOD Incident Report.

(3) Internal engine component failure and the damage resulting from such failure shall not be interpreted or reported as FOD. Minor roughness or erosion of blades or vanes, within serviceable limits, shall not be interpreted or reported as FOD.

g. Aircraft Intermediate Maintenance Detachment (AIMD) contractors shall:

(1) Immediately notify the CNATRA QA when engines that have damage from foreign objects are inducted without a FOD Incident Report.

(2) Notify CNATRA QA immediately, of an FOD incidents occurring while operating an engine on a test cell/stand. Initiate a FOD investigation; The FOD Prevention Program Manager, Safety Department and CNATRA QA shall be included as members of the FOD Prevention/Investigation Team IAW reference (a), and a FOD Incident Report shall be submitted to CNATRA QA within five (5) working days.

(3) Notify TW-1 FOD Prevention Officer and CNATRA QA immediately when engine FOD damage is discovered after initial induction. AIMD shall perform an investigation and initiate FOD Incident Report, enclosure (2), (including FOD due to natural causes, such as birds or ice). The FOD Prevention Program Manager, Safety Department and CNATRA QA shall be included as members of the FOD Prevention/Investigation Team per reference (a). FOD Incident Report shall be submitted to CNATRA QA within five (5) working days.

(4) Submit supplemental FOD Incident Report referencing the initial Engine FOD Incident Report DTG detailing updated cost estimate and any additional information.

(5) Internal engine component failure and the damage resulting from such failure shall not be interpreted or reported as FOD. Minor roughness or erosion of blades or vanes, within serviceable limits, shall not be interpreted or reported as FOD.

(6) Provide technical assistance to FOD Investigation Teams as required.

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h. Public Works, Meridian shall mechanically sweep runways and ramps per enclosure (3).

i. Air Operations Department shall establish procedures to conduct an aggressive FOD prevention program per references (a) through (b).



C. W. GOLDACKER



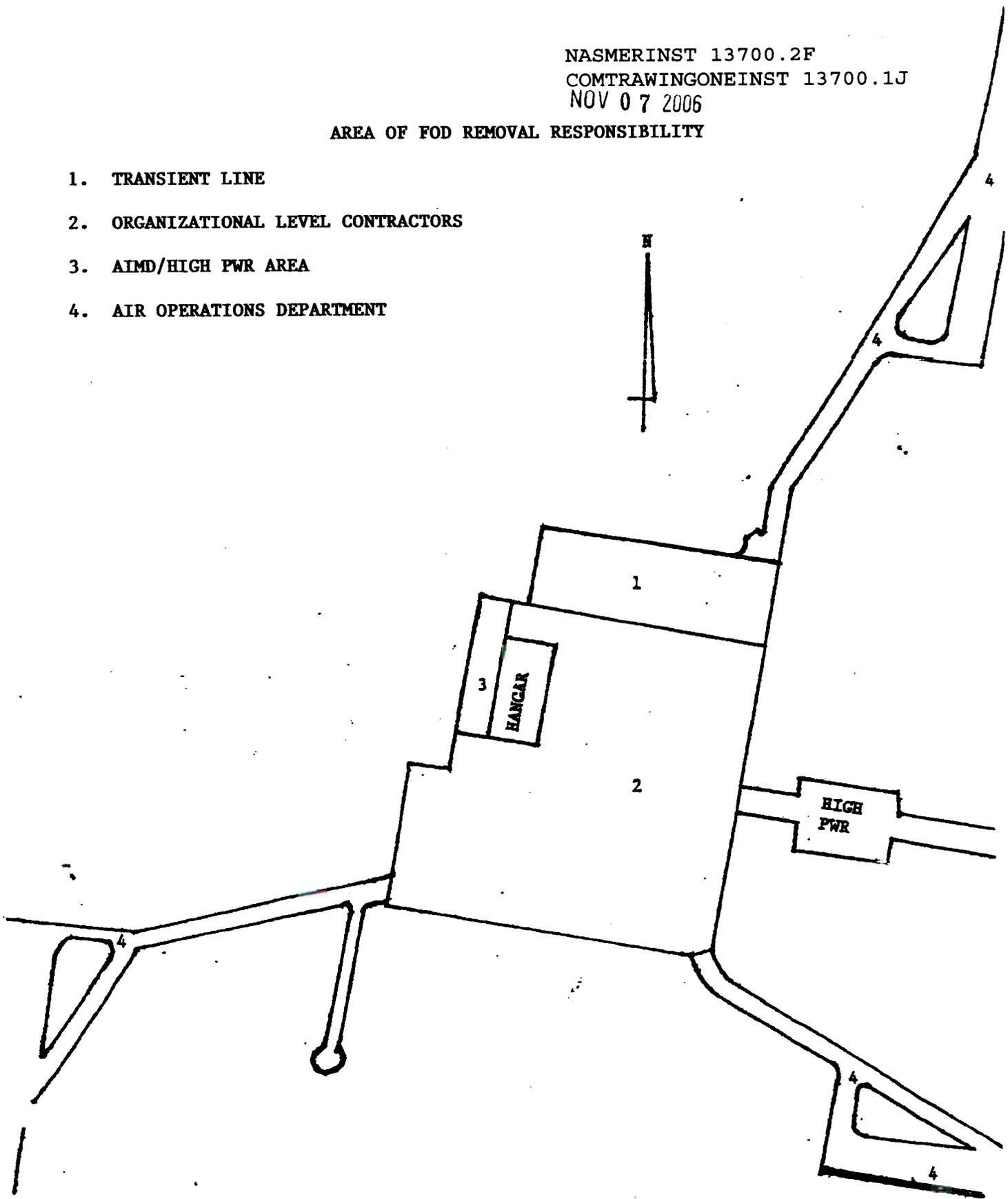
R. P. KNIGHT

Distribution:
(COMTRAWINGONEINST 5216.4C)
List I; List II
(NASMERINST 5216.4B)
N31, N00D, PRME only

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AREA OF FOD REMOVAL RESPONSIBILITY

1. TRANSIENT LINE
2. ORGANIZATIONAL LEVEL CONTRACTORS
3. AIMD/HIGH PWR AREA
4. AIR OPERATIONS DEPARTMENT



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FORMAT FOR ENGINE FOD INCIDENT REPORT

FROM: ORIGINATOR
TO: CNATRA CORPUS CHRISTI TX//N4//

INFO: CNO WASHINGTON DC//N881C6//
COMNAVAIRSYSCOM WASHINGTON DC//AIR-4106//
COMNAVREG SE JACKSONVILLE FL//N03A1//
CNET PENSACOLA FL//JJJ//
NAVSAFECEN NORFOLK VA//12//
APPROPRIATE TRAWING//JJJ//
NAS MERIDIAN MS//JJJ//

UNCLAS//N04790//

MSGID/GENADMIN/-//

SUBJ/(COMMAND SUBMITTING INITIAL OR SUPPLEMENTAL REPORT) ENGINE FOD INCIDENT REPORT SERIAL NUMBER (SEQUENTIAL NUMBER WITHIN EACH CALENDAR YEAR FOLLOWED BY LAST TWO DIGITS OF CALENDAR YEAR) (USE SEQUENTIAL NUMBERING REGARDLESS OF WHETHER THIS IS AN INITIAL OR SUPPLEMENTAL REPORT) (EXAMPLE OF SUBJECT LINE: VA-11 ENGINE FOD INCIDENT REPORT SERIAL NUMBER 03-03)//

REF/A/DOC/COMNAVAIRFORINST/01JUN01//

REF/B/DOC/CNATRA/-//

NARR/REF A IS COMNAVAIRFORINST 4790.2J SERIES. REF B IS CNATRAINST 13700.2 SERIES//

POC/(SENIOR MEMBER OF FOD INVESTIGATION TEAM)
NAME/RANK/CODE/PHONE

RMKS/1. SUMMARY (SUMMARIZE CONTENTS OF REPORT IN TWO (2) LINES OR LESS)

2. DATA

A. AIRCRAFT

(1) TYPE/MODEL/SERIES

(2) BUREAU NUMBER

B. ENGINE(S)

(1) TYPE/MODEL/SERIES

(2) SERIAL NUMBER(S) PSSN(S) (IF APPLICABLE)

(3) INSTALLED POSITION(S) AT THE TIME OF FOD, IF UNINSTALLED N/A

Enclosure (2)

C. JULIAN DATE(S)/TYPE OF LAST MAINTENANCE

- (1) ON AIRCRAFT
- (2) ON ENGINE(S)/MODULE(S)

D. LOCATION OF ENGINE(S) AT TIME OF FOD (FOR EXAMPLE: MIRAMAR, OCEANA, CV-63 DEPLOYED, NAVAVNDEPOT JACKSONVILLE TEST CELL)

E. EMPLOYMENT OF UNIT AT TIME OF FOD (FOR EXAMPLE: REFTRA, FLEETEX, WEAPONS DET, OR ORANGE AIR)

F. JULIAN DATE FOD DISCOVERED

(1) WHERE DISCOVERED (FOR EXAMPLE: DAILY, TURNAROUND, PRE-INDUCTION INSPECTION, DUCT DIVER, FLIGHT CREW INSPECTION)

(2) HOW DISCOVERED (FOR EXAMPLE: DAILY, TURNAROUND, PRE-INDUCTION INSPECTION, DUCT DIVER, FLIGHT CREW INSPECTION)

G. DISPOSITION OF ENGINE(S)/MODULE(S) (FOR EXAMPLE: BLENDING, I LEVEL TURN-IN, RETURN TO DEPOT)

H. PREVIOUS ACTIVITY OPERATING ENGINE(S)/MODULE(S), IF A FACTOR (THAT IS, FOD DISCOVERED UPON RECEIPT) INDICATE IF FOD AESR ENTRY WAS MADE (N/A IF NOT A FACTOR)

I. OTHER REFERENCE(S) TO SAME FOD INCIDENT

(1) ETR SERIAL NUMBER(S) (ENGINE FOD INCIDENT REPORT SERIAL NUMBER(S) IS/ARE INCLUDED IN THE REMARKS SECTION OF THE ORIGINAL ETR THAT LISTED REASON FOR REMOVAL CODE 5C OR 5D). NOTE: REASON FOR REMOVAL CODE 3Q SHALL NOT BE USED FOR ENGINES DAMAGED BY INGESTION OF FOREIGN OBJECTS

(2) JCN(S) (ENSURE ENGINE FOD INCIDENT REPORT SERIAL NUMBER IS INCLUDED IN DISCREPANCY FIELD OF TURN-IN VIDS/MAF)

(3) OTHER APPLICABLE MSG DTGS (LIST SEPARATELY)

3. COST DATA

A. ENGINE(S) REPAIR COST (BASED ON CURRENT NAVSAFCEN MSG OF REPORTABLE ENGINE(S) REPAIR COST)

B. AIRCRAFT DAMAGE COST (BASED ON P&E REPORT, OTHERWISE N/A)

C. TOTAL INJURY COST (REFER TO APPENDIX 4B OF OPNAVINST 3750.6 SERIES)

- D. OTHER PROPERTY DAMAGE COST
- E. TOTAL COST (TOTAL OF A, B, C AND D ABOVE)
- 4. INVESTIGATION
 - A. DESCRIBE EVIDENCE
 - B. ANALYSIS OF EVIDENCE
 - C. ACTUAL FOREIGN OBJECT INGESTED (IF KNOWN)
 - D. SUSPECTED FOREIGN OBJECT INGESTED IF ACTUAL IS UNKNOWN
(DO NOT REPORT UNKNOWN)
- 5. DATE/SERIAL NUMBER OF LAST FOD INCIDENT MESSAGE
- 6. CORRECTIVE ACTION
 - A. LOCAL CORRECTIVE ACTION TAKEN TO PREVENT REOCCURRENCE
 - B. RECOMMEND CORRECTIVE ACTION IF BEYOND THE CAPABILITY OF
THE ORIGINATOR TO IMPLEMENT CORRECTIVE ACTION
- 7. COMMANDING OFFICER'S COMMENTS//

RUNWAY VACUUM SWEEPER SCHEDULE

1. Monday, Wednesday, Friday and Sunday night.
 - a. Complete not later than 0700 - Sweep first 1,000 X 200 feet of North and South Runways and six (6) feet either side of centerline. Visually inspect the remaining lengths of the North and South runway while performing this requirement, and sweep areas that require attention as needed. Sweep parking apron at Joe Williams Field (1/3 each day).
 - b. Sweep all taxiways and the angle approaches associated with the North and South runways.
 - c. Sweep helipad and approximately one-third of the total aircraft parking ramp and the transient aircraft parking areas.
2. Tuesday and Thursday
 - a. Complete not later than 0700 - Sweep first 1,000 X 200 feet of East Runway and six (6) feet of either side of centerline. Visually inspect the remaining lengths of the North and South runway while performing this requirement, and sweep areas that require attention as needed. Sweep first 1,000 X 200 feet of Joe Williams Field runway and six (6) feet either side of centerline.
 - b. Sweep all taxiways and the angle approaches associated with the East runway.
 - c. Sweep helipad and approximately one-third of the total aircraft ramp and the transient aircraft parking areas.
3. Monday through Friday
 - a. Helipad
 - b. Parking areas (1/3 of area each day)
4. Adhere to above schedule while minimizing interference with aircraft movements. During field operating hours, driver coordinates with ground control, via radio, for clearance.