

**MPD 5340.1  
REVISION C**

**EFFECTIVE DATE: November 2, 2020  
EXPIRATION DATE: November 2, 2025**

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# **MARSHALL POLICY DIRECTIVE**

**ED01**

## **FOREIGN OBJECT DAMAGE/FOREIGN OBJECT DEBRIS PREVENTION OPERATIONS**

**COMPLIANCE IS MANDATORY**  
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<b>Marshall Policy Directive ED01</b>		
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### DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Change/ Revalidation/ Canceled)	Document Revision/ Change	Effective Date	Description
Baseline		11/22/2010	
Change	1	9/27/2013	On 9/27/13, at the request of the OPRD, an administrative change was made to remove MPR 4000.1 because it has been cancelled.
Revision	A	1/14/2016	Updated documents list and editorial changes; contents moved to new required template; required Applicability statements added.
Revision	B	7/7/2017	Replaced Environmental Effects Branch (EM50) with Materials, Test and Contamination Control Branch. Clarified that daily monitoring tasks are required only when FOD Control Areas are active. Included option for FOD Area Managers to track findings via alternate, approved methods in addition to computerized database. Replaced Protective Services (AS50) with Protective Services and Export Control Office.
Revision	C	11/2/2020	Updated Applicable Documents. Rearranged organization of Section 5 for better clarity. Verified consistency with FOD training requirements and FOD team responsibilities. Document reformatted to bring into compliance with NPR 1400.1H.

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## **1. POLICY**

- a. This MPD establishes policy and related requirements for Foreign Object Damage/Foreign Object Debris (FOD) Prevention for facilities owned or operated by MSFC as allowed by NPR 1400.1.
- b. This MPD establishes policy and related requirements to ensure functional activities are performed under controlled conditions, including provision for the prevention, detection, and removal of foreign objects, as required by MPR 1280.10.
- c. This MPD establishes policy for Center operations necessary to support Project FOD prevention programs, when established for all ground operations of mechanical and electrical systems of flight hardware in accordance with NASA-STD-6016, Standard Materials and Processes Requirements for Spacecraft.
- d. Each Center Project that designs, tests, or manufactures flight hardware will establish a FOD prevention program in accordance with MSFC-STD-3598, Standard for Foreign Object Damage/Foreign Object Debris (FOD) Prevention, to identify FOD sensitive hardware and implement measures to prevent FOD.
- e. Center Projects will designate facilities where FOD sensitive hardware is present as FOD Sensitive Areas in accordance with MSFC-STD-3598.
- f. Any Center Office/Director operating facilities designated by a Project as FOD Sensitive Areas will comply with MSFC-STD-3598, or obtain a waiver.

## **2. APPLICABILITY**

- a. This MPD applies to Center personnel, programs, projects, and activities, including contractors and resident agencies to the extent specified in their respective contracts or agreements. (“Contractors,” for purposes of this paragraph, include contractors, grantees, Cooperative Agreement recipients, Space Act Agreement partners, or other agreement parties.)
- b. This MPD applies to Michoud Assembly Facility (MAF) as defined per MAF Foreign Object Debris (FOD) and Contamination Control Program, AS60-OI-031.
- c. This MPD applies the following: all mandatory actions (i.e., requirements) are denoted by statements containing the term “shall.” The terms: “may” or “can” denote discretionary privilege or permission, “should” denotes a good practice and is recommended, but not required, “will” denotes expected outcome, and “are/is” denotes descriptive material.
- d. This MPD applies the following: all document citations are assumed to be the latest version unless otherwise noted.

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e. This MPD applies to Project Offices and the Engineering Directorate that design, test, or manufacture FOD sensitive hardware.

f. This MPD applies to Directorates/Offices that perform work in facilities that have been identified by a Project Office or by the Engineering Directorate as FOD Sensitive Areas.

g. This MPD applies to Directorates/Offices that lift, handle, or transport hardware that has been identified as FOD sensitive.

### **3. AUTHORITY**

a. NPR 1400.1, NASA Directives and Charters Procedural Requirements

b. MPR 1280.10, Marshall Quality Management System

### **4. APPLICABLE DOCUMENTS AND FORMS**

a. NRRS 1441.1, NASA Records Retention Schedules

b. NASA-STD-6016, Standard Materials and Processes Requirements for Spacecraft

c. NAS 412, Foreign Object Damage/Foreign Object Debris (FOD) Prevention

d. MPR 1440.2, MSFC Records Management Program

e. MPR 3410.1, Training

f. MPR 8730.3, Control of Nonconforming Product

g. MCP 1040.2, MSFC Emergency Plan

h. MGM 1280.1, Guidance for Continual Improvement

i. MSFC-STD-3598, Standard for Foreign Object Damage/Foreign Object Debris (FOD) Prevention

j. MSFC-RQMT-3479, Fracture Control Requirements for Composite and Bonded Vehicle and Payload Structures – Applicable to programs/projects/activities originated before 2/1/06

k. NASA-STD-5019A, Fracture Control Requirements for Spaceflight Hardware – Applicable to programs/projects/activities originated after 2/1/06

l. AS60-OI-031, MAF Foreign Object Debris (FOD) and Contamination Control Program

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## **5. RESPONSIBILITIES**

a. The Engineering Directorate (ED01), Materials & Processes (M&P) Laboratory (EM01), and the Chief, Materials Test, Chemistry, & Contamination Control Branch (EM22) shall designate a MSFC FOD Focal Point within the Materials Test, Chemistry, and Contamination Control Branch (EM22), who shall coordinate FOD prevention measures at MSFC in accordance with MSFC-STD-3598.

b. The Manager of a Department/Laboratory/Office managing a project operation in a facility containing FOD sensitive hardware, or designee, shall designate a FOD Site Manager for each FOD Sensitive Area. A Project FOD Focal Point / FOD Monitor (can be the same person), and an Alternate FOD Monitor shall be designated for each FOD sensitive area containing hardware.

c. The Manager of each Project who designs, tests, or manufactures FOD sensitive hardware shall designate a FOD Site Manager. The Project Manager or FOD Site Manager shall designate a Project FOD Focal Point / FOD Monitor (can be the same person) and an Alternate FOD Monitor for each FOD Control or FOD Critical area.

d. FOD Site Managers shall coordinate with the MSFC FOD Focal Point and Project FOD Focal Point / FOD Monitor to determine the appropriate FOD Controls required.

e. The Project FOD Focal Point and the FOD Monitor, who can be the same person, shall coordinate with the MSFC FOD Focal Point and FOD Site Manager to establish FOD Control procedures in accordance with MSFC-STD-3598.

f. The Manager, MAF Operations Office (SF01), or designee, shall designate a MAF FOD Focal Point to coordinate FOD prevention measures in accordance with MSFC-STD-3598, perform Facilities Management and Logistics for FOD prevention, coordinate Project FOD Control Programs and Project FOD measurement, trending, and feedback data.

g. MAF Safety and Mission Assurance/Quality Manager shall implement AS60-OI-031, MAF Foreign Object Debris (FOD) and Contamination Control Program, in compliance with the appropriate MSFC documents.

h. The Director, Safety and Mission Assurance Directorate (QD01), or designee, shall consider the potential for FOD damage to components/hardware in Safety Hazard Analyses and provide feedback to the MSFC FOD Focal Point, FOD Site Manager and the Project FOD Focal Point / FOD Monitor. The Director shall also perform audits, incorporate applicable FOD prevention protocols, and support investigation of FOD incident reports.

i. The Manager, Environmental Engineering and Occupational Health Office (AS10), or designee, shall coordinate environmental engineering and occupational health functions to be performed within or above FOD Sensitive Areas with the Site Manager, and ensure that personnel assigned to work in FOD Sensitive Areas receive appropriate training.

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j. The Manager, Facilities Management Office (AS20), or designee, shall support FOD risk reviews of facilities, coordinate Facilities Operations and Maintenance Office (AS24) operations with the FOD Site Manager, and ensure that personnel assigned within FOD Awareness Areas receive appropriate training.

k. The Manager, Logistics Services Office (AS40), or designee, shall coordinate with the Project FOD Focal Point to ensure that adequate precautions are included to protect FOD sensitive items and to ensure that personnel are trained for FOD control operations.

l. The Manager, Protective Services Office (AS50), or designee, shall require that Protective Services personnel entering FOD Sensitive Areas for non-emergency purposes comply with the applicable FOD protocols for that area and receive appropriate training.

m. The Manager, Training and Incentives Office (HS40), or designee, shall track FOD training courses as SHE courses in the System for Administration Training and Education Resources for NASA (SATERN), maintain records of civil service personnel trained in accordance with MPR 3410.1, and coordinate with MSFC FOD Focal Point (EM22) to schedule instructor-led FOD training courses.

## **6. DELEGATION OF AUTHORITY**

None.

## **7. MEASUREMENT/VERIFICATION**

a. The Project FOD Focal Point shall provide trend data, inspection results, incident/mishap reports and feedback to the MSFC FOD Focal Point (or MAF FOD Focal Point for Project operations at MAF), the Project Manager, and workers within a timely manner in accordance with the methods prescribed in MSFC-STD-3598. Incidents/mishaps shall be reported to the appropriate boards for dispositions.

b. Metrics for continual improvement as described in MGM 1280.1 and as required in accordance with NAS 412, Foreign Object Damage/Foreign Object Debris (FOD) Prevention, shall be developed, recorded and reported by the Project FOD Focal Point.

## **8. CANCELLATION**

MPD 5340.1B, Foreign Object Damage/Foreign Object Debris Prevention Operations, dated July 7, 2017

*Electronically approved by*

Steven C. Miley for  
Jody Singer  
Director

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## **ATTACHMENT A. Definitions**

Definitions are provided in MSFC-STD-3598, Standard for Foreign Object Damage/Foreign Object Debris (FOD) Prevention.

## **ATTACHMENT B. Acronyms**

FOD	Foreign Object Damage/Foreign Object Debris
GSE	Ground Support Equipment
IDS	Impact Damage Susceptible
M&P	Materials & Processes
MAF	Michoud Assembly Facility
MLR	Marshall Lead Representative
MRB	Material Review Board
NRRS	NASA Records Retention Schedule
SATERN	System for Administration, Training and Educational Resources for NASA

## **ATTACHMENT C. Records**

Records are maintained in accordance with MPR 1440.2, NRRS 1441.1, and any governing directive or organizational issuance. Records include the following:

C.1 FOD Training records – Reference MPR 3410.1

C.2 Operating Procedures – Department/Laboratory/Office responsible for operations where FOD sensitive hardware is present maintain operating procedures are maintained in accordance with applicable program/project record retention requirements (i.e., NRRS 8/101-113) and any governing Organizational Issuances.

C.3 FOD prevention records – FOD prevention records including FOD database metrics, FOD incident reports, and FOD feedback are maintained by FOD Focal points in accordance with applicable temporary program/project record retention requirements (i.e., NRRS 8/105 or 8/109) and any governing Organizational Issuances.

C.4 Nonconforming Product Records – Quality Assurance records for nonconforming product such as Discrepancy Reports and MRB records are maintained by the MRB in accordance with MPR 8730.3.