

**MPR 6410.1
REVISION D**

**EFFECTIVE DATE: October 4, 2004
EXPIRATION DATE: October 4, 2009**

MARSHALL PROCEDURAL REQUIREMENTS

AD01

HANDLING, STORAGE, PACKAGING, PRESERVATION, AND DELIVERY (HSPPD)

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DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Baseline		5/14/99	Document converted from MSFC-P15.1 to a Directive. Previous history retained in system as part of canceled or superseded ISO Document files.
Revision	A	8/16/99	Changes made to reflect new organizational codes and new organizational terminology.
Revision	B	6/19/01	Changes made to update the "Applicable Documents" references, add a paragraph on storage/warehousing instructions, and incorporating some minor editorial changes.
Revision	C	4/28/2004	Changes made to update all NPG's to NPR's, changed H.S.P.P. & D. to HSPPD throughout, and the URL for the Master List was corrected.
Revision	D	10/4/2004	Revision in response to HQ Rules Review Action (CAITS: 04-DA01-0387).

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PREFACE

P.1 PURPOSE

This procedure shall apply to all products which are handled, stored, packaged, preserved, or delivered and for which MSFC has responsibility. The purpose of this procedure is to ensure that products are handled, stored, packaged, preserved, and delivered in a manner that prevents damage to the product.

P.2 APPLICABILITY

This procedure shall be applicable to all MSFC organizations involved in handling, storage, packaging, preservation, and delivery (HSPPD) of products.

P.3 AUTHORITY

NPR 6000.1, "Requirements for Packaging, Handling, and Transportation for Aeronautical and Space Systems, Equipment and Associated Components"

P.4 APPLICABLE DOCUMENTS

- a. NPR 1441.1, "NASA Records Retention Schedules"
- b. NPR 6000.1, "Requirements for Packaging, Handling, and Transportation for Aeronautical and Space Systems, Equipment, and Associated Components"
- c. MPD 1860.2, "Radiation Safety Program"
- d. MPR 1050.1, "Agreement Selection Process"
- e. MPR 4000.1, "Control of Customer-Supplied Product"
- f. MPR 7120.1, "Program/Project Planning"
- g. MPR 8040.2, "Product Identification and Traceability"
- h. MPR 8060.1, "Flight Systems Design/Development Control"
- i. MPR 8060.2, "Non-Flight and Non-Facility Design and Development"
- j. MPR 8715.1, "Marshall Safety, Health, and Environmental (SHE) Program"
- k. MPR 8730.1, "Inspection and Testing"

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- l. MWI 4500.1, “Program Stock, Storage, and Retail Store Operations”
- m. MWI 4520.1, “Receiving”
- n. MWI 6000.1, “Procurement Traffic Management and Freight Traffic Actions”
- o. MWI 6410.1, “Packaging, Handling, and Moving Program Critical Hardware”
- p. W31RX1-95137-004, “Interservice Support Agreement (ISA) between Marshall Space Flight Center (MSFC) and the U.S. Army Aviation and Missile Command (AMCOM)”

P.5 REFERENCES

None

P.6 CANCELLATION

MPG 6410.1C dated April 28, 2004

Original signed by
Robin N. Henderson for

David A. King
Director

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DOCUMENT CONTENT

1. DEFINITIONS

1.1 Customer Agreement (CA). A CA is a signed agreement which establishes the relationship between MSFC and another party to the agreement (external entity) requiring a commitment of NASA resources (funding, services, equipment, expertise, facilities, etc.) to accomplish the objectives of the agreement (reference MPR 1050.1).

1.2 Customer-Supplied Product Agreement (CSPA). An added section in (or signed addendum to) the Customer Agreement.

1.3 Customer Support Representative (CSR) (formerly Activity Supply Officer [ASO]). Contractor personnel responsible for maintaining interface with the organizational element and other property personnel for user supply or equipment requirements and related actions.

1.4 Delivery. Handling of a product which occurs after final MSFC inspection and test. Includes the shipment to final destination when contractually specified.

1.5 Handling. Processing, arranging, installing, aligning, lifting (manually or using hoisting equipment), loading, transporting, towing, or other similar operations performed with or upon hardware during its lifetime while on MSFC or in MSFC possession.

1.6 Marking. The application or use of marks, symbols, and addresses for purposes of guiding or directing the safe handling and shipping of packaged items.

1.7 Marshall Lead Representative (MLR). The senior MSFC person, who by assignment or by virtue of position, has responsibility for the use and control of MSFC product and/or Customer-Supplied Product (CSP) (i.e., systems manager, systems engineer, department lead, etc.).

1.8 Material Safety Data Sheets (MSDS). Pertinent safety and health information provided by chemical manufacturers/importers concerning a hazardous chemical.

1.9 Outsized. Any product that is greater than 10,000 pounds or products that are of configurations which cannot be readily handled with conventional material handling equipment.

1.10 Packaging. Application or use of adequate protective measures to prevent damage from physical hazards or conditions including: wrapping for protection from physical danger, cushioning interior containers, and completely identifying unit and intermediate packages or containers. Final inspection of product prior to delivery is included as a part of the packaging phase.

1.11 Program Critical Hardware Project Engineer (PCH/PE). The resident expert for handling of all PCH under MSFC's responsibility.

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1.12 Preservation. Application or use of adequate protective measures in an effort to prevent deterioration of product from environmental hazards or conditions. Protective measures may include segregation, the use of appropriate cleaning and drying methods, preservatives, and wrappings.

1.13 Product. Any customer, MSFC, or vendor-supplied items including hardware, equipment, software, material, data, reports, and/or service provided.

1.14 Product Handler (PH). Any individual who handles hardware.

1.15 Program Critical Hardware (PCH). An item which supports the critical path in a program schedule, and/or requires special handling, and/or is designated as Class I or Class II hardware as defined in NPR 6000.1. This definition is meant to generally exclude raw materials and basic hardware such as nuts, bolts, brackets, and electronic piece parts which will be consumed or become part of an item which is designated as PCH. Reference MWI 6410.1.

1.16 Quality Sensitive Hardware (QSH). Flight hardware, flight software, and flight-associated ground support equipment; deliverable products that are to be assembled into a launch vehicle and associated equipment for testing, handling, launching, servicing, and maintaining a vehicle in space; qualification and requalification hardware; and hardware or software procured for development activities when the data resulting from development activities will be used in the “justification for qualification” of flight hardware, software, or flight-associated hardware. Hardware to be used in a hazardous operation may also be designated as quality sensitive by the responsible organization.

1.17 Storage Area. Any area designated for storing material, equipment, and/or product. This includes any holding areas for receiving, staging, and/or inspection.

2. RESPONSIBILITIES

2.1 Office of Center Operations (CO). CO shall provide the implementation of requirements for handling, storing, packaging, preserving, and delivering products at MSFC. This responsibility encompasses MSFC and contractor efforts to assure that interfaces are well defined, and that MSFC elements understand and accomplish assigned functions. CO shall appoint and provide the MSFC PCH/PE. In cases where the MLR physically handles, stores, packages, preserves, or delivers a product under their control, CO shall provide the necessary materials and assistance as requested by the MLR to facilitate this activity.

2.1.1 CO, Logistics Services Department, Property Management Group (PMG). PMG shall preserve and store received products in its possession in accordance with MWI 4500.1.

2.1.2 CO, Logistics Services, Transportation and Logistics Engineering Group. The Transportation and Logistics Engineering Group shall develop, document, and coordinate

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implementation plans for handling, packaging, and delivering PCH as referenced in MWI 6410.1 and MWI 6000.1.

2.2 MLR. The MLR shall be the individual who has the overall responsibility for defining the requested handling, storage, packaging, preservation, and delivery of the product in accordance with the applicable documents in this procedure.

2.2.1 The MLR shall designate a product as PCH if it meets one or more of the following criteria:

2.2.1.1 An item which supports the critical path in the program schedule and the loss, damage, or delay of which would seriously impact program schedules.

2.2.1.2 Assemblies with close tolerances of delicate construction, which could be damaged by improper handling and such resulting damage, could compromise a flight vehicle, payload, or the safety of personnel regardless of whether the item is considered "Flight Hardware."

2.2.1.3 Those items designated as Class I or II hardware defined in NPR 6000.1. Class I: Mission-essential items which, in the event of loss, damage, or delay in shipment, would seriously affect the program. Class II: Delicate or sensitive items not covered by Class I or Class III. These items are those that are damaged readily by improper handling.

2.2.1.4 The MLR shall designate a product as QSH when required.

2.2.2 The MLR shall develop and implement special handling, storage, packaging, preservation, and delivery requirements when required.

2.2.3 The MLR shall identify special handling, storage, packaging, and preservation requirements in requisition documents for purchased product, when required.

2.2.4 The MLR shall develop, implement, and document any special handling, storage, packaging, preservation, and delivery requirements in appropriate plans per MPR 7120.1, MPR 8060.1, MPR 8060.2, MWI 6410.1, requisition documents, shipping documents and CA/CSPAs (especially those applicable after fabrication/assembly). If no special requirements are provided, standard commercial handling, storage, packaging, preservation, and delivery processes shall be used for the items.

2.2.5 The MLR shall ensure the implementation of any special handling, storage, packaging, preservation, and delivery requirements specified in CA/CSPA. If a CSPA is used, the MLR shall ensure at least the following information is included:

2.2.5.1 The expected date of receipt of the CSP.

2.2.5.2 A list (including quantity and unit) of all applicable line items being delivered.

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2.2.5.3 Description of the CSP.

2.2.5.4 Identification of any work to be performed on the article, to include any Safety and Mission Assurance (S&MA) personnel involvement. Reference MPR 8730.1.

2.2.5.5 Any special verification, storage, handling, or maintenance instructions.

2.2.5.6 Unit replacement value (actual or estimated).

2.2.5.7 Disposition instructions for damaged items.

2.2.5.8 Customer's name, addresses (U.S. mail and/or e-mail), and phone/fax number(s).

2.2.5.9 Marshall Lead Representative's (MLR) name, office symbol, and phone/fax number(s) (reference MPR 4000.1).

2.3 Radioactive Safety Officer (RSO). The RSO shall provide guidance in the HSPPD of products which are identified or determined to be radioactive.

2.4 Safety and Mission Assurance (S&MA) Directorate. The S&MA Directorate shall provide advice and assistance to the Center organizations/MLRs with regard to the safety and quality control aspects of the design and operational activities involved in handling, storage, packaging, preservation, and delivery of product. The S&MA Directorate shall concur in the procedures for handling/moving product which requires special handling due to cost, weight, composition, or size.

2.4.1 Handling. The S&MA Directorate shall verify the proper handling of PCH, QSH, explosives, propellants, pyrotechnics, and other designated hazardous products.

2.4.2 Storage. The S&MA Directorate shall verify the proper storage of PCH, QSH, explosives, propellants, pyrotechnics, and designated hazardous products.

2.4.3 Packaging. The S&MA Directorate shall verify the proper marking and packaging of PCH, QSH, explosives, propellants, pyrotechnics, and designated hazardous products.

2.4.4 Preservation. The S&MA Directorate shall verify PCH, QSH, explosives, propellants, pyrotechnics, and designated hazardous products are properly preserved.

2.4.5 Delivery. The S&MA Directorate shall verify the proper delivery of PCH, QSH, explosives, propellants, pyrotechnics, and designated hazardous products.

3. PROCEDURE

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Handling, storage, packaging, preservation, and delivery processes shall be accomplished in accordance with applicable requirements in all referenced documents including NPR 6000.1, approved work instructions/procedures, and applicable CA/CSPAs.

<u>Actionee</u>		<u>Shall perform all Actions</u>
MLR	3.1	Develop procedure with assistance of CSR to HSPPD the product in accordance with drawings, projects plans, CA/CSPA, MWI 6410.1, MWI 4500.1, MWI 4520.1, MWI 6000.1, and MPR 8715.1, as appropriate.
MLR	3.2	If the product is hazardous, incorporate the requirements identified in actions 3.9 and 3.12 into the procedure.
PH	3.3	Notify CSR if product is entering or leaving MSFC. CSR shall assist PH in identifying HSPPD requirements for products entering or leaving MSFC. The PH shall arrange for the protection of the quality of the product upon receipt, during and after final inspection and test, and at all other times during which the product is in the hands of, or under the auspices of, the product handler. All deliveries shall be in accordance with MPR 8040.2 in order to meet identification and traceability requirements.
PH & MLR	3.4	After the need for HSPPD products has been determined, review available/appropriate shipping papers, packing lists, product and shipping container markings, drawings, project plans, work orders, MSDS, CSP tags, and CA/CSPA to determine the type of product. If the product is identified as CSP, the MLR shall provide instructions for affixing the CSP tag and follow the actions prescribed in MPR 4000.1, "Control of Customer-Supplied Products."
PH	3.5	If the product is PCH, notify the MLR and/or PCH/PE.
PH	3.6	HSPPD PCH in accordance with the procedure developed in action 3.1 as prescribed in MWI 6410.1, "Packaging, Handling, and Moving Program Critical Hardware."
MLR	3.7	If the product is quality sensitive and is being delivered to or from MSFC, incorporate requirements from MPR 8730.1.
MLR	3.8	If the product is hazardous, review MSDS to determine type of hazard and HSPPD requirements.

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MLR & PH	3.9	If the product is hazardous but not radioactive, the MLR shall provide instruction/assistance to the PH for HSPPD of the product as indicated in accordance with drawings, project plans, MSDS, CA, MWI 4500.1, MWI 4520.1, MWI 6000.1, MPR 8715.1, and W31RX1-86142-001, as applicable.
MLR	3.10	If the product is radioactive, notify the RSO.
RSO	3.11	Provide HSPPD direction/assistance to PH.
MLR & PH	3.12	The MLR shall provide instruction/assistance to the PH for the HSPPD of radioactive products in accordance with drawings, project plans, MSDS, CA, MWI 4500.1, MWI 4520.1, MWI 6000.1, MPR 8715.1, and MPD 1860.2, as applicable.
MLR & PH	3.13	The MLR shall provide instruction/assistance to the PH for the HSPPD of non-PCH, nonquality sensitive and nonhazardous product in accordance with drawings, project plans, MSDS, CA, MWI 4500.1, MWI 4520.1, MWI 6000.1, and MPR 8715.1, as applicable.
MLR	3.14	If needed after establishing a program stock account, the MLR shall request storage/warehouse space from the storage/warehousing personnel and provide any special instructions on handling and storage requirements for the product (see MWI 4500.1).
Logistics Services Contractor	3.15	When requested and if storage/warehousing space is available, the Logistics Services Contractor (LSC) - (storage/warehousing personnel) shall store the items using the instructions provided by the MLR, or if no special instructions are provided, then the items shall be stored according to the current commercial storage and warehousing practices.

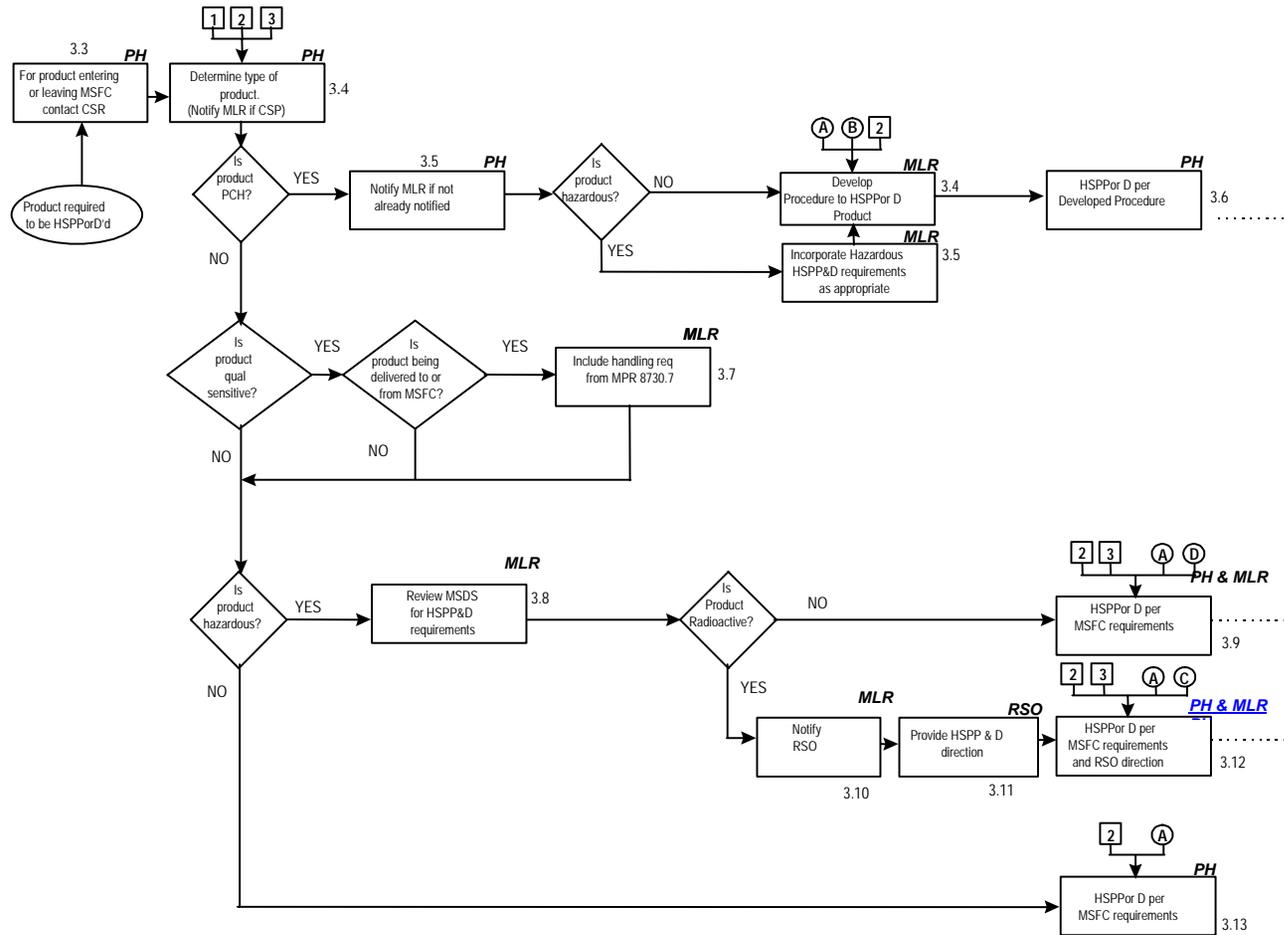
4. RECORDS

The LSC shall maintain the official property records related to the handling, storage, packaging, preservation, and delivery (as required) of products for which this procedure is applicable. The HSPPD file (which contains as appropriate for the specific items being HSPPD: CA, CSPA, requisitions documents, shipping documents, receiving documents, and/or implementation plans for HSPPD of PCH or QSH) shall be maintained in accordance with NPR 1441.1, "NASA Records Retention Schedules," for 3 years after the item is no longer contained in the NASA supply or equipment systems.

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5. FLOW DIAGRAM



MSFC/External HSPPD Information	Proj. Documents	Hazardous Documents	General MSFC Requirements	PCH Requirements	Hazardous Material Requirements
1 - Shipping Papers - Packing List - Markings - Work Orders - Cust.-Supplied Product (CSP) Tag	2 - Drawings - Project Plans - Customer Agreement (CA)	3 Material Safety Data Sheets (MSDS)	A MWI 4500.1 MWI 4520.1 MWI 6000.1	B MWI 6410.1	C MPD 1860.2 D W31RX1-86142-001

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