

MPG 1280.7

REVISION C

EFFECTIVE DATE: May 12, 2003

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MARSHALL PROCEDURES AND GUIDELINES

SD01

SERVICING

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DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Baseline		5/14/99	Document converted from MSFC-P19.1 to a Directive. Previous history retained in system as part of canceled or superseded ISO document files.
Revision	A	3/8/01	Updated applicable documents section (MPG 1440.2); Replaced references to ITAs (and MWI 1050.1) with SPAs/CWCs (and MPG 1230.1); Enhanced/modified control of Quality Records (see Para. 2.1.4) by the Project Office; Clarified the definition of Servicing; and Nomenclature updates.
Revision	B	5/31/01	Added language to paragraphs as follows to ensure adherence to ISO 9001/2000: P.1 - Goal identified P.4 - Added MPG 8730.5, Control of IM&TE P.4 - Added MPG 4000.1, Control of CSP P.4 - Deleted MPD 1280.1, MMS P.4 - Added MWI 1280.7, Quality Comment System 1.2.3 - Verification Augmentation 2.1.1 - Emphasize derived requirements 2.1.1 - Emphasize use of MPG 8730.5 2.1.3 - Enhance Customer Feedback Process 2.1.4 - Enhance Continuous Improvement Process 2.2.2 - Enhance Customer Feedback Process 2.2.6 - Enhance Customer Feedback Process 2.4.2 - Enhance Improvement Process 3.2 - Develop/revise Servicing Plan based on customer feedback, prior/ongoing servicing activities, validation/revalidation requirements, and control of CSP 3.3 - "Revise" enhances Continual Improvement 3.4 - "Revise" enhances Continual Improvement 3.5 - Enhanced Customer Feedback Process and perform validation/revalidation activities 3.9 - Enhanced Customer Feedback Process 3.10 - Enhanced Customer Feedback Process 3.11 - Enhanced Continuous Improvement Process 3.12 - Enabled "repeated" servicing activities 4.4 - Enhanced Customer Feedback Process 5- Modified based on changes in sections 2 and 3
Revision	C	5/12/03	Added language to strengthen understanding of servicing and validation and to implement requirements of Aerospace Standard (AS9100). Changed "Quality Record(s)" to "Record(s)" throughout. Changed "Quality Comment Form" to "Customer Feedback Form" throughout. Corrected directive numbers and references to MPG 1280.2 and MWI 1280.2 throughout. Changed NCRs and nonconformance reports to nonconformances throughout. Expanded Para 1.1.2 re definition of MSFC as servicing location. Deleted Para 1.1.3 re NCR. Changed Para 1.2.1 re requirements for servicing. Expanded Para 1.2.2 re Servicing definition. Added Para 1.2.3 re validation. Added Para 2.1.1.1 re Process Control. Changed Para 2.1.1.2 re service performed outside MSFC. Changed Para 2.1.2.2 re servicing work

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			<p>transferred outside MSFC. Added Para 2.1.2.3 re AS9100. Added Para 2.1.2.4 re AS9100. Added Para 2.1.2.5 re AS9100. Changed Para 2.1.4 re Customer Feedback. Changed Para 3.2 re Servicing Plan as part of Project Plan. Ensure Servicing Plan is a controlled document (not quality record). Change Para 3.4 re repair schemes and requirements driving servicing. Added Para 3.6 re In-service Data collection and analyses. Added Para 3.11 re actions taken for post-delivery problems. Changed Para 3.12 re customer feedback requirements. Changed Para 4.3 re forms requirements. Changed Para 4.4 re records definition and types. Changed Para 5 to reflect Para 3.</p>

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PREFACE

P.1 PURPOSE

The purpose of this Marshall Procedures and Guidelines directive (MPG) is to establish a consistent method for the identification, performance, verification, and reporting of specified servicing requirements. The goal, at a minimum, with respect to the Customer, is to satisfy the agreed-to customer requirements, to obtain feedback from the customer as to satisfaction. Implementation of this procedure will satisfy the requirements of the "Marshall Management Manual" (MMM), MPD 1280.1.

P.2 APPLICABILITY

This MPG applies to all Marshall Space Flight Center (MSFC) organizations involved in the servicing of hardware and/or software.

P.3 AUTHORITY

MPD 1280.1, "Marshall Management Manual"

P.4 APPLICABLE DOCUMENTS

- a. MPG 1230.1, "Center Resources Management Process"
- b. MPG 1280.2, "Process Control"
- c. MWI 1280.2, "MSFC Customer Feedback System"
- d. MPG 1440.2, "MSFC Records Management Program"
- e. MPG 4000.1, "Control of Customer-Supplied Product"
- f. MPG 7120.1, "Program/Project Planning"
- g. MWI 7120.4, "Documentation Preparation, Programs/Projects"
- h. MPG 8040.1, "Configuration Management, MSFC Programs/Projects"
- i. MPG 8730.5, "Control of Inspection, Measuring, and Test Equipment"

P.5 REFERENCES

None

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P.6 CANCELLATION

MPG 1280.7B dated May 31, 2001

Original signed by
Axel Roth for

A. G. Stephenson
Director

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DOCUMENT CONTENT

1. DEFINITIONS

1.1 Acronyms

1.1.1 MPG. Marshall Procedures and Guidelines.

1.1.2 MSFC. Marshall Space Flight Center. When herein designated as an entity by which servicing is planned, performed, and/or managed or designated as a location relative to where servicing is performed, the term MSFC includes all MSFC-controlled locations such as MSFC itself and any MSFC Resident Office.

1.2 Definitions

1.2.1 Process Operator (PO). The PO is responsible for performing the servicing activity, any delegated inspections, and documenting results, in accordance with approved organizational issuances and other requirements.

1.2.2 Servicing. A maintenance activity performed by MSFC on a product (i.e., hardware and/or software) that had been delivered to an outside customer, which had been agreed to as part of the contract to design, develop, produce, or maintain the product.

1.2.2.1 That is, MSFC has responsibility for planning, developing procedures, performing operations, and/or resolving nonconformances with respect to the servicing activity, pursuant to a prior agreement (i.e., contract) with the customer.

1.2.2.2 Note that the location of the product to be serviced may be outside the physical confines of MSFC. Servicing differs from MSFC's "Provision of Services" to an outside customer (under a contract separate from product delivery contract) in that the servicing activities were agreed with the customer prior to product delivery and are linked to that particular product.

1.2.3.3 Note therefore, that servicing is analogous to maintenance work on a vehicle, regardless of location of that vehicle, performed as under a pre-arranged warranty that customer had obtained from manufacturer (or 3rd party) prior to acquisition of the vehicle.

1.2.3 Validation. Proof, by examination of objective evidence (i.e., records and documentation), that the product accomplishes the intended purpose. Validation is performed to ensure that the product is ready for a particular use, function, or mission and

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may be determined by test, analysis, demonstration or a combination of these.

1.2.4 Verification. Confirmation by examination and provision of objective evidence (i.e., records and documentation) that specified requirements have been fulfilled. These requirements include all customer requirements and all derived requirements (e.g., those requirements not stated by the customer or in the customer agreement but necessary for use, statutory, and regulatory requirements, and any additional requirements determined by MSFC).

2. RESPONSIBILITIES

2.1 Project Office. The Project Office (PrO) (or designated Project Manager) (PrO/PM) will be responsible for the following:

2.1.1 Determining and documenting servicing requirements based on the customer requirements as defined in the contract with the customer. Additional requirements may be derived from the customer requirements, such as the following:

2.1.1.1 Controlling processes pursuant to MPG 1280.2, "Process Control."

2.1.1.2 Controlling MSFC's and/or the customer's inspection, measuring, and test equipment pursuant to MPG 8730.5. These requirements will be documented in a Servicing Plan that identifies the requirements, how nonconformances to customer-supplied hardware, will be processed (e.g., pursuant to MPG 4000.1, if any servicing is performed outside MSFC), and identifies who will fulfill the Quality Assurance function.

2.1.2 Ensuring that, during planning/execution of servicing activities, the following activities are accomplished:

2.1.2.1 Identify the resources to support servicing of the product.

2.1.2.2 Define any processes to control and validate the quality of any servicing activities, including work transferred on a temporary basis outside of MSFC.

2.1.2.3 Provide for, under service operation processes, the following:

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- a method of collecting and analyzing in-service data;
- actions to be taken where problems are identified after delivery, including investigations, reporting activities, and actions on service information consistent with contractual and/or regulatory requirements;
- the control and updating of technical documentation;
- the approval, control, and use of repair schemes; and
- the controls required for off-site work (e.g., organizations work undertaken at the customer's facilities).

2.1.2.4 Coordinate changes in the Servicing Plan with customer and/or regulatory authorities, in accordance with Program Plans, Project Plans, and/or other controlling documentation.

2.1.2.5 Ensure that,

a. During servicing activities, the configuration of the hardware/software and all supporting documentation (e.g., drawings, parts lists, specifications, material, processes, type of manufacturing, and re-assembly of the product) is managed appropriate to the type of hardware/software and is accomplished pursuant to MPG 8040.1.

b. Where applicable in accordance with product specifications and/or applicable regulations, that the product is preserved via provisions for:

- cleaning,
- prevention, detection, and removal of foreign objects,
- special handling for sensitive products,
- marking and labeling, including safety warnings,
- shelf life and control and stock rotations, and
- special handling for hazardous materials.

2.1.3 Pursuant to MPG 1230.1, developing and finalizing Strategic Planning Agreement(s) (SPAs) and Collaborative Work Commitment(s) (CWCs) with the PO(s).

2.1.4 Upon completion of each servicing activity, proactively soliciting feedback from the customer(s) in accordance with MWI 1280.2.

2.1.5 Upon receiving customer feedback (i.e, from customer or PO), ensuring that feedback is understood and recording such feedback for: (1) immediate action(s) to closure; (2) future

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action(s); (3) continuous improvement of procedures with respect to this or future servicing activities; and (4) retention and sharing with appropriate organizations (e.g., as lessons learned).

2.1.6 Maintaining all records as required by the Servicing Plan (see MPG 1440.2).

2.2 Process Operator. The Process Operator is responsible for the following:

2.2.1 Developing documents and procedures necessary to perform servicing.

2.2.2 Performing servicing as specified in approved documentation.

2.2.3 Working with Quality Assurance to process nonconformances in accordance with the Servicing Plan.

2.2.4 Forwarding records to appropriate records center.

2.2.5 Reporting completion of servicing as defined in the Servicing Plan.

2.2.6 Recording/understanding any customer feedback and transmitting it to the project office.

2.3 Quality Assurance. The party responsible for ensuring the quality of the servicing will be identified in the Servicing Plan. Quality Assurance will be responsible for the following:

2.3.1 Verifying that the servicing is performed according to approved procedures and documents.

2.3.2 Working with the PO to process any nonconformances in accordance with the Servicing Plan.

2.4 Systems Engineer. The Systems Engineer shall be responsible for the following:

2.4.1 Assisting the project office with identifying skills necessary to perform required servicing.

2.4.2 Assisting the project office with preparing Servicing Plan or revising it.

2.5 The Safety and Mission Assurance (S&MA) Office. The S&MA

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Office shall be responsible for assisting the project office in defining the quality requirements in the Servicing Plan.

3. PROCEDURE

Actionee		Action
Project Office	3.1	Determine and document servicing requirements based upon customer requirements, engineering drawings, specifications, quality requirements, worksite requirements, and existing nonconformances. These requirements shall be commensurate with the complexity of the servicing activity to be performed.
Project Office, Systems Engineer, and S&MA	3.2	<p>Develop/revise a Servicing Plan based upon the servicing requirements. This may be a separate plan or incorporated into a project plan or subordinate document, provided the servicing functions are clearly identified. Consideration shall be given to the following when preparing the Servicing Plan:</p> <ul style="list-style-type: none"> • Identifying responsibilities of the customer and PO. • Defining how nonconformances of non-MSFC hardware shall be processed. • Defining how quality will be assured as identified by any contracts with the customer. • Establishing control of inspection measuring and test equipment. • Identifying any training required for servicing. • Identifying skills necessary in performing servicing activities. • Establishing the procedures for servicing performance/verification, reporting the specified servicing requirements have been met, and record keeping. • Establishing any procedures for validating/revalidating that the serviced system performs as required via selected tests.

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		<ul style="list-style-type: none"> • Identifying procedures for control of customer-supplied product (CSP), whether servicing is performed at MSFC (see MPG 4000.1), at the customer's site, or at a "third-party" site. • Identifying any adjustments in procedures based on prior or ongoing (similar) servicing activities with this customer or via "lessons learned" resulting from other servicing activities for any customer. • Identifying records to be maintained and the requirements for their retention and disposition. <p>The Servicing Plan shall be maintained as a controlled document (see MWI 7120.4).</p>
Project Office, Systems Engineer, and Process Operator	3.3	PrO/SE should develop/revise and finalize SPAs/CWCs with the PO in accordance with the servicing requirements as specified in the Servicing Plan.
Process Operator	3.4	Develop/revise documents and procedures, including repair schemes necessary to perform servicing in accordance with approved organizational work instructions and other requirements.
Process Operator and Quality Assurance	3.5	At the appropriate time, perform servicing as specified in approved documentation, verify that servicing meets the specified requirements, and record results. If specified in the Servicing Plan, validate/revalidate that serviced items perform as required. The record of verification and validation shall be maintained as a record. Process any nonconformances as defined in the Servicing Plan.
Process	3.6	Collect and analyze in-service data

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Operator and Quality Assurance		in accordance with approved organizational work instructions and/or the Servicing Plan.
Process Operator and Quality Assurance	3.7	Verify that all documentation associated with the servicing has been completed and approved prior to forwarding the documentation to the applicable records center as defined in the Servicing Plan.
Process Operator	3.8	Transfer all in-process documentation generated as a result of servicing to the applicable records center as defined in the Servicing Plan.
Process Operator	3.9	Report completion of servicing as defined in the Servicing Plan (section 3.2). This report shall be maintained as a record.
Process Operator	3.10	Before, during, and after the servicing activity, understand and record any customer feedback and transmit same to project office.
Project Office	3.11	Take appropriate actions when problems are identified after delivery in accordance with the Servicing Plan.
Project Office	3.12	Proactively solicit feedback from customers pursuant to MWI 1280.2.
Project Office	3.13	Record feedback for appropriate uses (per section 2.1.4).
Project Office	3.14	Maintain records. If this is not the final servicing activity for this "contract," go to step 3.2.

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4. RECORDS

4.1 Data

The following data will be used in defining the specific requirements for servicing:

4.1.1 Contract with the Customer for servicing

4.1.2 Project-specific requirements, including (but not limited to) end item specifications, hardware drawings and parts lists, software requirements documents, and verification requirements and compliance documents

4.1.3 Existing Nonconformances

4.1.4 Existing Parts Tags and/or Hardware Log Books

4.1.5 Training Requirements

4.1.6 Technical Support Requirements

4.1.7 Worksite Support Requirements

4.2 Reports

Required reports will be identified in approved organizational work instructions.

4.3 Forms

Forms as required by an organization's implementation of MWI 1280.2 and other requirements.

4.4 Records

The Servicing Plan generated in step 3.2 defines records, including inspection documentation, test records, and product qualification (i.e., verification and validation) records. Customer feedback items are also records. Servicing Plans shall be controlled as documentation by the project manager or designee per MPG 7120.1 (see paragraph 4), if applicable, and MPG 1440.2. All records shall be maintained in accordance with MPG 7120.1 (see paragraph 4), if applicable, and MPG 1440.2.

5. FLOW DIAGRAM

