

MWI 7120.1
REVISION D

EFFECTIVE DATE: September 30, 2004
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MARSHALL WORK INSTRUCTION

QD01

PROGRAM/PROJECT QUALITY PLAN

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DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Baseline		5/14/99	Document converted from MSFC-P02.1-C01 to a Directive. Previous history retained in system as part of canceled or superseded ISO Document file.
Revision	A	8/20/99	Updated document to reflect new MSFC reorganization.
Revision	B	5/15/01	Update title to add "Program"; Updated Section 3 paragraph numeric references; Update item b. in section 3 from MM 1107.1 to MPG 1100.1, add QS01-QE-001 to Section 3; add quality plan DRD link to Section 4; Modified paragraphs in Sections 6.1, 6.1.1, 6.1.2, 6.2.2, 6.2.3, 6.2.4, to meet the latest requirements for project/quality planning and ISO 9001/2000; update section 12 for cancelled documents.
Revision	C	4/24/03	Update footer web site reference; Section 1 purpose revised; section 3, add Q9001-2000 and AS9100 reference documents; section 4, delete data requirements document (DRD) reference; section 6.1.2 delete DRD link and replace with MIDL guidance; 6.2.1.3 revised to clarify; update section 6.2.2 for AS9100 guidance; 6.2.3 revised to add key characteristics, 6.2.4, update S&MA contacts; update section 12.
Revision	D	9/30/2004	Generic changes made to remove ambiguity regarding requirements within the document, updated S&MA Directorate identification both within the text and header; add MPR 8040.1 & MPR 1410.2; to section 3 and reference in section 6.2.3; update definition 5.4; add QAR responsibilities update to 6.2.4; updated note section 7.

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1. PURPOSE

The purpose of this Marshall Work Instruction (MWI) is to provide instructions to the Project, Safety and Mission Assurance (S&MA), Quality Assurance Representative (QAR), to generate a plan that shall provide a documented mechanism to tie specific requirements of the final product, project and/or customer requirements to MPD 1280.1, "Marshall Management Manual," and sub-tier procedures.

2. APPLICABILITY

A quality plan shall be required of each project within the scope of the MMM.

3. APPLICABLE DOCUMENTS

3.1 ANSI/ISO/ASQ Q9000-2000, "Quality Management Systems-Fundamentals and Vocabulary"

3.2 ANSI/ISO/ASQ Q9001-2000, "Quality Management Systems – Requirements"

3.3 ISO 10005-1995, "Quality Management - Guidelines for Quality Plans"

3.4 MPR 1100.1, "Marshall Space Flight Center Organizational Manual" (Safety and Mission Assurance Directorate)

3.5 MPR 1410.2, "Marshall Management Directives System"

3.6 MPD 1280.1, "Marshall Management Manual"

3.7 MPR 7120.1, "Program/Project Planning"

3.8 MPR 8040.1, "Configuration Management, MSFC Programs/Projects"

3.9 QD-QE-001, "Project Quality Instruction"

3.10 SAE AS9100, "Quality Systems-Aerospace-Model for Quality Assurance in Design, Development, Production, Installation and Servicing"

4. REFERENCES

None

5. DEFINITIONS

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5.1 Project Plan. The basic planning document which describes the overall plan for proceeding with a project.

5.2 Quality Assurance Representative (QAR). The individual directly assigned by the S&MA Directorate to document, direct, and/or perform the program/project specific quality assurance functions at the Center and other project contracted areas.

5.3 Quality Management System (QMS). A management system to direct and control an organization with regard to quality (ANSI/ISO/ASQ Q9000-2000).

5.4 Safety Critical. Term describing any condition, event, operation, process, equipment, or system that could cause or lead to severe injury, major damage, or mission failure if performed or built improperly, or allowed to remain uncorrected.

6. INSTRUCTIONS

6.1 General. The QAR shall begin support as requested of any program at the earliest stage possible, and before the approval of any subsequent project plan (MPR 7120.1, "Program/Project Planning"). The QAR shall work with the program/project in the generation of the program/project plan to facilitate the subsequent quality plan. Program planning quality support is similar to what is specified herein but is generally at a higher level with the customer and/or launch facilitators. The QAR can generate the quality plan in parallel to the project plan but shall ensure the approval of the project plan before the approval and issuance of the quality plan.

6.1.1 Safety and Mission Assurance Directorate Responsibilities.

The S&MA Directorate is chartered (MPR 1100.1) and shall, as a minimum, inspect, witness, monitor, or verify any and all safety-critical items or functions. The S&MA Directorate shall perform any other mission assurance inspections and test monitoring as requested by the project office. Performance of any inspections, tests, and/or test monitoring to be performed by other offices shall be delegated by the S&MA Directorate, documented in the quality plan, and approved by project management. All inspections and tests shall be performed to procedures approved through NASA, the MSFC Quality Management System (QMS), and/or the customer.

6.1.2 Quality Plan Provisions. The quality plan, working in parallel with the Marshall Management System, shall provide the functional quality assurance requirements. These requirements are based upon the characteristics of the project and the structure of the project plan. The plan based upon that structure shall be a stand-alone document, or be included within an overall S&MA plan, or within the program/project plan itself. The quality plan shall be documented and baselined in stages as the details defined by the project/program design matures and risks with their mitigating factors become better defined.

Quality plans required by contractors as part of the procurement process shall be developed in accordance with the standard data requirements description, STD/QE-QP, Quality Plan. The

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standard data requirement can be found through the Inside Marshall Web site, ISO 9000, or Library/Ref/Doc Services, within the Marshall Integrated Document Library (MIDL), under the MSFC Data Requirements Management System listing.

6.2 Quality Plan Process.

6.2.1 Project Plan, Customer Agreement, Contract Review.

S&MA Directorate responsible personnel shall perform the following in developing the quality plan.

6.2.1.1 Ensure the project plan is approved and that it provides the level of detail the product requires based upon its size, complexity, and other particular characteristics.

6.2.1.2 Ensure customer agreements and/or contracts for MSFC processing contain specific provisions for the required quality system, design specifications, configuration management, purchasing, inspection and test criteria, nonconformance processing, customer oversight, packaging, handling, and shipping requirements.

6.2.1.3 Ensure that any deviations to the MMS that are required by the customer agreement/contract and would be carried forward in the quality plan have been processed in accordance with MPR 1410.2, documented in the project plan, and presented to the MSFC Program Management Council (PMC) (Reference MPR 7120.1).

6.2.2 Quality Plan Format and Structure. The format of the plan shall meet the structure of the template within QD-QE-001 unless otherwise specified by the project/program and/or customer requirements. The quality plan shall be only as comprehensive as needed to meet the quality objectives (i.e., configuration, function, risk mitigation, etc.) set forth by the project plan. As the program develops and matures, the quality plan will require modification due to changes in safety, design, mission success, and/or customer agreement changes. When revising the plan, it shall be modified overall, as well as part of a continuous improvement process, to ensure compliance with the overall objectives associated with customer expectations for quality assurance. Programs/projects that are enveloped by Prime Contractors that have a quality management system meeting the requirements of SAE AS9100 may dictate the structure of the quality plan to parallel their documented system. The SAE AS9100 has numerous detailed aerospace requirements that are not normally addressed in ANSI/ISO/ASQ Q9001-2000. Added details include system requirements such as; configuration management, first article inspection, process change notification, raw material validation testing, facilities monitoring, emphasis on servicing, and special process qualification and process controls.

6.2.3 Quality Plan Content. The quality plan shall contain all required quality assurance activities, including key characteristics, provided by the S&MA Directorate, its delegated agent, applicable supplier or subcontractor, and other specified project laboratory personnel. It shall provide the means for documenting the associated inspection and test records required by the

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project plan. It shall define the project records and the maintenance of those records necessary to provide verification and certification to meet flight and/or launch facility requirements (Reference MPR 8040.1). It shall define the Acceptance Data Package (ADP) requirements for the final shipment of the product. The plan shall include a reference to the MMM. It shall reference applicable MWI's, MSFC instructions and specifications, NASA specifications, and laboratory/ organizational and S&MA Organizational Issuances that shall be used to perform partial, unique, and/or approved alternate processes within the documents referenced. Customer specifications and requirements documents shall be specified within the plan as the documents are not normally used within the MSFC QMS. Contractor quality planning documents shall be referenced as applicable documents within the quality plan and specified within the body of the plan only if their quality planning directly interacts within the MSFC QMS process (i.e., contractor structured waivers, critical handling/shipping, delegated inspections, and data package processing).

6.2.4 Quality Plan Review and Approval. All quality plans shall be submitted to the Safety, Reliability, and Quality Assurance (SR&QA) Policy and Assessment Department for review or as specified by the Director, S&MA, prior to submittal for review and approval in accordance with the project configuration management plan and/or customer agreement requirements. The QAR shall ensure that an approved copy of the quality plan is sent to the S&MA organization responsible to perform the inspection and test monitoring activities and to the S&MA QAR responsible for any in-house contract that has an active inspection delegation/surveillance process. Minimum program approval requirements shall consist of the project manager and, as applicable, the customer as defined by the customer agreement. All parties affected by this plan shall be part of an informal review initiated by the QAR so as to alleviate downstream changes, schedule delays, delegation problems, and quality record problems.

7. NOTES

Guidelines to quality planning can be found in ISO 10005-1995, "Quality Management - Guidelines for Quality Plans."

8. SAFETY PRECAUTIONS AND WARNING NOTES

None

9. RECORDS

The quality plan shall be maintained as a record as required by the project plan, as part of the project configuration management system requirement.

10. PERSONNEL TRAINING AND CERTIFICATION

Personnel affected by this document shall be trained to its requirements.

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11. FLOW DIAGRAM

None

12. CANCELLATION

MWI 7120.1C dated April 24, 2003

Original signed by
Robin N. Henderson for

David A. King
Director