

**PADDS REGULATION REFERENCE TEXT
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TITLE: FLIGHT SAFETY PARTS CRITICAL CHARACTERISTICS MAINTENANCE AND OVERHAUL QE-STD-2 (USAAMCOM)

TEXT

QE-STD-2
REVISION A
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FLIGHT SAFETY PARTS
CRITICAL CHARACTERISTICS
MAINTENANCE & OVERHAUL
QE-STD 2

	Paragraph
Purpose-----	1.0
Scope-----	2.0
References-----	3.0
Definitions-----	4.0
Policy-----	5.0
Requirements-----	6.0
Planning-----	6.1
Plan Content-----	6.1.1
Frozen Planning Requirements-----	6.1.2
Changes to Frozen Planning-----	6.1.3
Audits-----	6.2
Critical Characteristics-----	6.3
Inspection of Critical Characteristics-----	6.3.1
Nonconforming Critical Characteristics-----	6.3.2
Contradictory Critical Characteristics-----	6.3.3
Delivered Nonconformances-----	6.3.4
Records-----	6.4
Traceability of Records-----	6.4.1
Purchasing Records-----	6.4.2
Retention of Records-----	6.4.3
Certification of Personnel-----	6.5
Measurement & Test Equipment-----	6.6
Calibration-----	6.6.1
Tolerance-----	6.6.2
Government Furnished Material-----	6.7

1.0 PURPOSE: To establish the minimum level of activity that is required for the Maintenance and Overhaul (M&O) for Flight Safety Parts (FSPs) wherein the M&O affects or involves the Critical Characteristics (CCs) associated with the FSP. Requirements established herein are intended to establish and maintain the integrity of the CCs throughout the M&O process.

2.0 SCOPE: This document is intended to be used in conjunction with other contractually specified quality requirements. This document shall apply to all FSP.

3.0 REFERENCES:

- a. ANSI/ASQC B1,B2,B3-1996
- b. ISO 10012-1
- c. Competition Advocate's Shopping List(CASL)
- d. AMCOM Regulation 702-7 (Flight Safety Parts/New Source Testing Program Management)

4.0 DEFINITIONS:

- a. Flight Safety Part, (Aircraft and Components): Any part, assembly, or installation containing a critical characteristic

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(CC) whose failure, malfunction, or absence could cause loss of or serious damage to the aircraft, and/or serious injury or death to the occupants.

b. Flight Safety Part, (Engine): Any part, assembly, or installation containing a CC whose failure, malfunction, or absence could cause an uncommanded engine shut down, and/or an uncontained engine failure resulting in loss of, or serious damage to the aircraft and/or serious injury or death to the occupants.

c. Critical Characteristic: Any feature throughout the life cycle of a FSP, such as dimension, finish, material or assembly, manufacturing or inspection process, installation, operation, field maintenance, or depot overhaul requirement which if nonconforming, missing or degraded could cause the failure or malfunction of the FSP.

d. Approved Source: A manufacturer or vendor who has satisfied, prior to contract award, all AMCOM source approval requirements as set forth in the CASL to include, if applicable, engineering testing requirements (fatigue, endurance, and/or interchangeability).

e. Contractor: Any company or Government owned and operated depot performing M&O for AMCOM.

5.0 POLICY: To maintain the integrity and quality of FSP, components, sub-assemblies, and assemblies undergoing M&O, contractors providing such services are required to adhere to the requirements of this document in its entirety. If a contractor has difficulty in maintaining process control as evident through such things as internal management audits, customer audits, the receipt of quality deficiency reports for parts previously supplied to AMCOM et. al., this will require immediate corrective action for the current contract and could affect the award of future contracts to that contractor.

6.0 REQUIREMENTS: All requirements of this document (para 6.1 - 6.7) shall be complied with by a contractor receiving a contract for M&O of FSP. If a process or processes that involve a CC is subcontracted, this document must be imposed, in its entirety, on the subcontractor performing the work. If, during M&O replacement parts are required that are not identified on the repair parts lists, the contractor will contact the PCO for instructions on how to procure these parts.

6.1 PLANNING:

6.1.1 PLAN CONTENT: Each M&O process affecting a FSP critical characteristic as identified in the Depot Maintenance Work Requirements (DMWR) or other AMCOM authorized M&O procedure must be controlled by detailed procedures outlining each step or parameter of the process along with any required materials, tooling, equipment, or operator certification. All procedures shall be clearly defined and the values of characteristics recorded as applicable. Plans shall clearly define sequence of operation, machine type, and accept/reject limits for the specific process or operation. Critical processes not easily verified shall clearly define process operating parameters with tolerances. Plans shall clearly identify all CCs.

6.1.2 FROZEN PLANNING REQUIREMENTS: The contractor is responsible for developing M&O planning. Review and control of these plans will be the responsibility of the Contractor Control Board (CCB) consisting of qualified personnel equipped with adequate resources to assure development of complete, reliable, and traceable documentation. Parts maintained and overhauled utilizing these plans shall meet all contractual requirements. Plans developed for the M&O of FSP shall be frozen at the time the Product Verification Audit (PVA) is approved by the Government, or when a PVA is not required, prior to induction of the first M&O asset. Once frozen, plans shall remain frozen throughout the existing contract and all subsequent contracts for M&O of the item unless changes to the planning are made in accordance with this standard. In addition all plans shall be made available to the Government at any time upon request. For future contracts, verification of the currency of this planning will also be required at the time of bid submission if specified in the solicitation.

6.1.3 CHANGES TO FROZEN PLANNING: Frozen M&O planning pertaining to a CC shall not be changed without prior CCB recommendation, justification to AMCOM and receipt of approval by the Procurement Contracting Officer (PCO) except changes occurring as the result of an AMCOM approved Engineering Change Proposal (ECP), or AMCOM Engineering Directive (AED) requires CCB approval only. All changes to frozen planning affecting CCs will be submitted to AMCOM for approval. When the item, CC, or process is accomplished by a subcontractor, the planning shall be reviewed and approved by the contractor, and be subject to the same restrictions as above. Changes to frozen planning not effecting CCs require only CCB approval.

6.2 AUDITS: Contractors are to perform self-audits of their frozen planning when that planning applies to CCs produced or verified in house. At a minimum, audits will be performed at the start of each M&O contract, annually, and when process changes occur. It is incumbent upon the contractor to assure that subcontractors accomplish self-audits, and maintain records verifying their vendors are in full compliance with the audit requirement. All audit findings will be recorded and corrective action will be documented.

**PADDS REGULATION REFERENCE TEXT
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PCN: P10C9154R
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PAGE: 3

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6.3 CRITICAL CHARACTERISTICS:

6.3.1 INSPECTION OF CRITICAL CHARACTERISTICS: All CCs which can be nondestructively inspected/tested shall be subjected to 100 percent inspection by the contractor or subcontractor; however, assemblies containing CCs need only be disassembled to the extent required by the statement of work to return the assemblies to a serviceable condition, in these cases inspection of CCs is not necessary. CCs which require destructive testing are to be tested on a lot or batch basis, with no skip lots allowed. All completed work instructions shall identify the FSP part number, serial or lot number, and characteristic inspected. Critical characteristics shall be identified on the work instructions in such a manner as to draw attention to them. Work instructions shall reflect the exact readings or dimensions, date of inspection, identity of inspector, and any required inspection certification. These requirements are in addition to other contractual requirements.

6.3.2 NONCONFORMING CRITICAL CHARACTERISTICS: Nonconformances of CCs shall not be dispositioned "use as is" or "repair" through contractor actions. Rework to DMWR or other AMCOM approved procedures are acceptable. Waivers or deviations may be requested as specified in the contract. Request for waivers/deviations of CCs shall be classified as critical and will be forwarded to AMCOM for approval/disapproval.

6.3.3 CONTRADICTORY CRITICAL CHARACTERISTICS: Contradictions between the DMWR or other AMCOM approved procedures shall be brought to the attention of the PCO immediately and any work pertaining to the CC in question shall be stopped until a written resolution to the contradiction is issued to the contractor from the PCO.

6.3.4 DELIVERED NONCONFORMANCES: Contractors shall notify the PCO immediately of any discovered Nonconformances that may exist in previously delivered FSP. Notification is required whether the characteristic in question has been classified as a CC or not. Notification shall include a description of the suspected nonconformance, contract number, part number, and affected serial numbers, or lot number (when applicable).

6.4 RECORDS:

6.4.1 TRACEABILITY OF RECORDS: All records relating to FSP shall be traceable to the date and place of M&O. Records shall provide the degree of traceability required to enable subsequent verification of all aspects of material, manufacture, special process, personnel certification, variability control charts (if applicable), assembly and inspection of CCs. Special processes include but are not limited to heat treat, shotpeening, and nondestructive testing.

6.4.2 PURCHASING RECORDS: All purchase orders for subcontracted products or processes that contain CCs must clearly identify the CC and reference this STD and if applicable QE-STD 1 for compliance. All documents and referenced data for FSP shall be available for review by the Government to determine compliance.

6.4.3 RETENTION OF RECORDS: The contractor shall retain copies of all records generated pursuant to this standard and make these records available to the Government upon request. Records shall be retained for a period of five years past after the contractor ceases the M&O process of the part for which this standard applies. At the end of this period or in the event of relocation or shutdown, all records shall be offered to the PCO prior to disposal.

6.5 CERTIFICATION OF PERSONNEL: Contractor personnel performing work or having inspection responsibilities pertaining to CCs, shall be certified to the appropriate professional level as outlined in the applicable national standards, best commercial practices, or as contractually required. A system for tracking personnel certification shall be an element in the contractor internal audit program to assure all certifications are maintained in a current status.

6.6 MEASUREMENT & TEST EQUIPMENT (M&TE):

6.6.1 CALIBRATION: Calibration of inspection equipment shall be in accordance with contractual requirements. All aspects of the supplier's calibration confirmation system shall be subject to Government verification at unscheduled intervals. The supplier's M&TE shall be made available for use by the Government, as needed. All measuring equipment that is used to measure CCs shall be monitored for effectiveness and reproducibility. A recommended method is provided in ISO 10012-1.

6.6.2 TOLERANCE: Measurement and Test Equipment (M&TE) used to inspect FSPs must be discriminate to within 10 percent of the total tolerance for the feature being inspected except as follows. For tolerances less than .001, M&TE must be discriminate to 20 percent.

6.7 GOVERNMENT FURNISHED MATERIAL: When material is furnished by the Government, the contractor's procedures shall include, as

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PAGE: 4

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a minimum, the following:

- a. Examination upon receipt to detect damage in transit.
- b. Inspection for completeness and proper type.
- c. Periodic inspection and precautions to assure adequate storage conditions are maintained, and to guard against damage from handling and deterioration during storage.
- d. Functional testing, either prior to or after installation, or both, as required by contract to determine satisfactory operation.
- e. Identification and protection from improper use or disposition.
- f. Verification of quantity.
- g. Damaged/nonconforming Government Furnished Material shall be identified as such and is to be segregated in a secure controlled area pending Government disposition instructions.