

MIL-A-19531B(Aer)

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**MILITARY SPECIFICATION****AIRCRAFT: MAINTENANCE AND ENGINEERING INSPECTION REQUIREMENTS**

This specification has been approved  
By The Bureau of Aeronautics, Department of the Navy

**1. SCOPE**

**1.1 SCOPE.-** This specification covers the requirements for Maintenance and Engineering Inspections of new production aircraft.

**1.2 CLASSIFICATION.-** Maintenance and Engineering Inspection (MEI) requirements outlined under this specification are for the following types of aircraft:

Heavier-Than-Air (Fixed Wing)  
Heavier-Than-Air (Rotary Wing)  
Lighter-Than-Air

**1.3 PURPOSE.-** Maintenance and Engineering Inspections outlined by this Specification are required in order to determine servicing and maintenance suitability, compliance with the Aircraft Detail Specification and other contractual requirements as related to safety, installation of equipment, interchangeability, replaceability, accessibility, and adequacy of ground support equipment.

**2. APPLICABLE DOCUMENTS.-** The only document applicable to this specification is the detail specification of the aircraft for which the MEI inspection is being conducted. (Copies of this specification MIL-A-19531B(Aer) may be obtained upon application to the Commanding Officer, Naval Aviation Supply Depot, Philadelphia 11, Pennsylvania. Attention Code CDS)

**3. REQUIREMENTS**

**3.1 INSPECTION AIRCRAFT.-** The aircraft to be inspected shall be the first practical representative production aircraft, recommended by the Material Inspection Office (MIO) and shall be representative in configuration of the aircraft scheduled for service test and/or fleet delivery. Instrumentation or other equipment installed on the inspection aircraft, which will not be on a representative production aircraft, shall be appropriately identified. The aircraft selected for the MEI shall have been inspected by the contractor and the MIO up to the point of flight test.

**3.2 INSPECTION AREA AND CONFERENCE ROOM.-** The inspection area shall be located in a quiet, well ventilated, and illuminated building or enclosure. A conference room for board meetings shall be provided and should be located near the aircraft inspection area.

**3.3 INSPECTION EQUIPMENT.-** The contractor shall make available the following equipment and technical data:

- (1) Necessary test equipment, such as hydraulic test stands and other equipment required for functional checks of installed systems.
- (2) Standard and/or special Navy tools or ground support equipment (see 3.3.1).
- (3) Approved and/or proposed contractor special tools and ground support equipment.
- (4) Inspection mirrors, flashlights, overalls (or coveralls), public address system, and other items considered necessary for the success of the inspection.

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- (5) Publications as specified by the publication item of the contract.
- (6) Where practicable. Separate displays such as quick engine change installation, tip tanks, wheels (with mounted tires), protective equipment, hoisting equipment, and complex accessories.
- (7) Photographer and camera(s). The camera must utilize self-developing film for immediate printing of pictures. Close-up photographs of all discrepancies are required for attachment to recommended change forms (NAVAER 2182).
- (8) Suitable tags for locating and identifying each recommended change generated by MEI team members.
- (9) An adequate supply of recommended change forms (NAVAER 2182) in duplicate and identified numerically.

**3.3.1 GOVERNMENT FURNISHED EQUIPMENT.-** Government Furnished Equipment; i.e., test stands, tools, ground support equipment (special and standard), etc., which are required for MEI's and are not available at the contractor's facility, shall be requested from The Bureau of Aeronautics not less than 90 days prior to date of the official inspection.

**3.4 CONTRACTOR PERSONNEL.-** Contractor service personnel shall be made available, as required, to open inspection doors, remove cowling and flooring, etc., and to remove and install components including engines, accessories, etc., as directed by the Chairman of the Maintenance and Engineering Inspection Board. Contractor engineering personnel shall be made available, as required.

**3.5 INDOCTRINATION AIDS.**

**3.5.1 FAMILIARIZATION COURSE.-** A Familiarization Course (not more than three days) shall be conducted by the contractor after the initial seating of the complete MEI team. The Familiarization Course shall consist of classes of instruction regarding major systems, (electrical, communication, navigation, armament, hydraulic, pneumatic, pressurization, etc.), and major installations (propulsion, instruments, etc.). All classes shall be held simultaneously, wherever practicable. The instruction shall be based on new and unusual features, and complexities of systems and installations, and shall not include elementary details or instruction regarding standardized or well known equipments and installations. The course shall include a walk-around inspection of the aircraft and aircraft production line.

**3.5.2 FAMILIARIZATION BROCHURE.-** The contractor shall provide the Chief of the Bureau of Aeronautics, 60 days prior to the MEI, with an Aircraft Familiarization Brochure, quantities to be specified by the Chairman, which will include but will not be limited to the following informational data:

- (1) General Descriptive Information.
- (2) System Description: A thumb nail sketch of each functional system incorporated in the aircraft.
- (3) Squadron Planning: General information including a list of ground support equipment required for Class C, D, E and F levels of maintenance.
- (4) Maintenance: Unique and salient maintenance and servicing features.
- (5) Personnel and Training: Summary of aviation personnel planning data including a maintenance training plan.
- (6) Facilities: Peculiar and special maintenance facility requirements.
- (7) Technical Data: Special repair techniques or processes. Listing of applicable publications available and required for Class C, D, E and F maintenance and separate listings for Class A and B.

**3.6 DETAIL REQUIREMENTS**

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**3.6.1 INSPECTION REQUIREMENTS.-** The contractor shall prepare the aircraft for the following inspections by Navy personnel.

- (1) Major systems (electrical, communication, navigation, armament, hydraulic, pneumatic, pressurization, fuel, etc.).
- (2) Major installations (propulsion, instruments, etc.).
- (3) Pre-flight inspection (less engine run up).
- (4) Daily inspection (less engine run up).
- (5) Intermediate and major inspections using standard Navy tools and equipment and/or approved or proposed contractor special tools and equipment.
- (6) Other inspections as directed by the Chairman of the Maintenance and Engineering Inspection Board.

**3.6.2 DEMONSTRATION REQUIREMENTS.-** The contractor shall perform the following demonstrations:

- (1) Towing, pushing and/or beaching the aircraft using Navy standard equipment and/or approved or proposed contractor equipment.
- (2) Hoisting the aircraft and removing major components.
- (3) Changing wheels, outer wing panels and empennage.
- (4) Jacking the aircraft with tires and shock absorber struts deflated.
- (5) Securing of aircraft for heavy weather (installation and removal of protective covers, battens, wing securing devices (folding wings), tiedowns, etc.).
- (6) Service the aircraft (fuel, defuel, add hydraulic fluid, oxygen, etc.).
- (7) Removal and installation of engine with Navy standard and/or approved or proposed contractor equipment.
- (8) Lubricate the aircraft in accordance with the lubrication charts provided in the appropriate handbooks.
- (9) Other demonstrations as directed by the Chairman of the Maintenance and Engineering Inspection Board.

**Note:** A representative production aircraft shall be made available outdoors as required for the above demonstrations.

**3.7 MATERIAL INSPECTION OFFICE.-** The MIO shall insure compliance with this specification by the contractor. The MIO shall submit to BUAER for approval, approximately 90 days in advance of the expected date of the inspection, the following information:

- (1) Proposed date of Maintenance and Engineering Inspection.
- (2) BUAER and Contractor serial numbers of proposed inspection aircraft. The MIO shall state that the proposed inspection aircraft will comply with the requirements of 3.1 of this specification.

**3.8 MAINTENANCE AND ENGINEERING INSPECTION BOARD.-** The Maintenance and Engineering Inspection Board will convene at the contractor's plant for the Maintenance and Engineering Inspection on the date approved by BUAER.

**3.9 PROGRESS REPORT.-** The contractor shall provide BUAER with a quarterly progress report of actions taken on the MEI Board report. No further reports will be required upon completion of all actions.

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4. **QUALITY ASSURANCE PROVISIONS.-** There are no quality assurance provisions applicable to this specification.

5. **PREPARATION FOR DELIVERY.-** There are no preparation for delivery requirements applicable to this specification.

6. **NOTES**

6.1 **EXPLANATORY INFORMATION**

6.1.1 **BUAER.-** Any reference to "BUAER" herein shall mean the Bureau of Aeronautics, Department of the Navy, Washington 25, D.C.

6.1.2 **MIO.-** Any reference to "MIO" herein shall mean the cognizant Material Inspection Office.

6.1.3 **MEI.-** Any reference to "MEI" herein shall mean, Maintenance Engineering Inspection.

**PATENT NOTICE.-** When Government drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the United States Government thereby incurs no responsibility for any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.