



U.S. Department  
of Transportation  
Federal Aviation  
Administration

# Advisory Circular

**Subject:** Maintenance Review Boards,  
Maintenance Type Boards, and  
Original Equipment  
Manufacturer/Type Certificate  
Holder Recommended Maintenance  
Procedures

**Date:** DRAFT

**AC No:** 121-22D

**Initiated by:** AFS-100

**Change:**

**1 PURPOSE OF THIS ADVISORY CIRCULAR (AC).** This AC provides information that industry may use to develop and revise the minimum scheduled maintenance tasking/interval requirements for derivative or newly type-certificated aircraft and powerplants for Federal Aviation Administration (FAA) approval.

**1.1 Application.** This AC refers to these minimum scheduled maintenance tasking/interval requirements as the Maintenance Review Board Report (MRBR), the Maintenance Type Board Report (MTBR), or the Original Equipment Manufacturer (OEM)/Type Certificate Holder (TCH) Recommended Maintenance Procedures. After FAA approval, the requirements become a basis upon which operators develop their own individual maintenance programs. The MRBR will become a dynamic report for each OEM/TCH (i.e., a document subject to periodic revision based on new or changed analysis or requirements).

**1.2 Regulatory Scope.** The contents of this document do not have the force and effect of law and are not meant to bind the public in any way, and the document is intended only to provide information to the public regarding existing requirements under the law or agency policies. The material in this AC is primarily designed to provide guidance for the standardized development, implementation, and update of FAA-approved minimum scheduled maintenance tasking/interval requirements, and it describes an acceptable means, but not the only means, of showing compliance with the applicable regulations. Since the method of compliance that is presented in this AC is not mandatory, the term “should” applies only if you choose to follow this particular method. The FAA’s only limitation is that if you choose to deviate from the methods and practices in this AC, or use an alternate method acceptable to the FAA, you may not refer to your program as a Maintenance Review Board (MRB)/Maintenance Type Board (MTB).

**2 AUDIENCE.** The audience for this AC is FAA personnel, air operators, air carriers, and OEM/TCHs and their vendors involved in the development of maintenance tasking requirements.

**3 WHERE YOU CAN FIND THIS AC.** You can find this AC on the FAA’s website at [https://www.faa.gov/regulations\\_policies/advisory\\_circulars](https://www.faa.gov/regulations_policies/advisory_circulars) and the Dynamic Regulatory System (DRS) at <https://drs.faa.gov>.

**4 WHAT THIS AC CANCELS.** AC 121-22C, Maintenance Review Boards, Maintenance Type Boards, and OEM/TCH Recommended Maintenance Procedures, dated August 27, 2012, is canceled.

**5 RELATED 14 CFR PARTS.** Title 14 of the Code of Federal Regulations (14 CFR) Parts [1](#), [21](#), [23](#), [25](#), [26](#), [27](#), [29](#), [33](#), [35](#), [43](#), [91](#), [119](#), [121](#), [125](#), [129](#), and [135](#) apply.

**6 RELATED READING MATERIAL (current editions).** See paragraphs 6.1 through 6.3 below for documents related to this AC.

**6.1 FAA Orders.** The following FAA orders are related to this AC and can be located on the FAA’s website at [https://www.faa.gov/regulations\\_policies/orders\\_notices](https://www.faa.gov/regulations_policies/orders_notices) and on DRS:

- Order [8110.4](#), Type Certification.
- Order [8110.52](#), Type Validation and Post-type Validation Procedures.
- Order [8110.54](#), Instructions for Continued Airworthiness Responsibilities, Requirements, and Contents.
- Order [8430.21](#), Flight Standards Division, Aircraft Certification Division, and Aircraft Evaluation Group Responsibilities.
- Order [8900.1](#), Volume 8, Chapter 2, Section 7, Maintenance Review Boards.
- Order [8900.1](#), Volume 19, Chapter 1, Section 1, General.

**Note:** While in the past, there were numerous instructions to FAA personnel in this AC, FAA internal instructions regarding the MRB/MTB process have been moved to Order 8900.1, Flight Standards Information Management System (specifically, Volume 8, Chapter 2, Section 7).

**6.2 FAA Advisory Circulars (AC).** The following ACs are related to the guidance provided in this AC and can be located on the FAA’s website at [https://www.faa.gov/regulations\\_policies/advisory\\_circulars](https://www.faa.gov/regulations_policies/advisory_circulars) and on DRS:

- AC [20-107](#), Composite Aircraft Structure.
- AC [20-136](#), Aircraft Electrical and Electronic System Lightning Protection.
- AC [20-158](#), The Certification of Aircraft Electrical and Electronic Systems for Operation in the High-Intensity Radiated Fields (HIRF) Environment.
- AC [23.1309-1](#), System Safety Analysis and Assessment for Part 23 Airplanes.
- AC [25.1309-1](#), System Design and Analysis.
- AC [25-19](#), Certification Maintenance Requirements.
- AC [25-27](#), Development of Transport Category Airplane Electrical Wiring Interconnection Systems Instructions for Continued Airworthiness Using and Enhanced Zonal Analysis Procedure.

- AC [27-1](#), Certification of Normal Category Rotorcraft.
- AC [29-2](#), Certification of Transport Category Rotorcraft.
- AC [33.4-3](#), Instructions for Continued Airworthiness, Aircraft Engine High Intensity Radiated Fields (HIRF) and Lightning Protection Features.
- AC [120-42](#), Extended Operations (ETOPS and Polar Operations).

**6.3 Other Technical Documents.** The following technical documents provide additional information related to this AC:

- International MRB/MTB Process Standard (IMPS), available on the International Maintenance Review Board Policy Board (IMRBPB) web page at <https://www.easa.europa.eu/en/domains/aircraft-products/international-maintenance-review-board-policy-board-IMRBPB>.
- European Union Aviation Safety Agency (EASA) CM-MRB-001, Maintenance Review Board Report/Maintenance Type Board Report Development Process, available on the EASA website at <https://www.easa.europa.eu/en/document-library/product-certification-consultations/easa-cm-mrb-001>.
- Transport Canada, Scheduled Maintenance Instruction Development Process Manual – TP 13850, available on the Transport Canada Civil Aviation (TCCA) website at <https://tc.canada.ca/en/aviation/publications/scheduled-maintenance-instruction-development-process-manual-tp-13850>.
- Airlines for America (A4A), ATA MSG-3, Operator/Manufacturer Scheduled Maintenance Development, available on the A4A website at <https://airlines.org>.

**7 INTERNATIONAL STANDARDS.** The FAA entered into bilateral agreements with certain foreign Civil Aviation Authorities (CAA) whereby the FAA may be the Certifying Authority (CA), U.S. State of Design, or the Validating Authority (VA) foreign State of Design. These agreements may allow the CA to approve the MRB/MTB on behalf of the VA. The MRB Chairperson should be familiar with the bilateral implementation procedures to understand their role in the MRB/MTB process.

**7.1 Applicability.** This AC fulfills the FAA’s international agreement to implement the guidance of the IMPS, which was agreed to by the FAA along with the aviation regulatory bodies of Australia, Brazil, Canada, China, the European Union, Hong Kong, Japan, Singapore, and United Arab Emirates.

**7.2 Implementation.** All FAA MRB/MTB activities will be conducted in compliance with the IMPS, except where FAA-specific guidance deviates from the IMPS. Aircraft Evaluation Division (AED) inspectors assigned to the validation of a foreign type certificate (TC) should use the letter of confirmation discussed in the IMPS to ensure the differences and additions discussed in this AC are addressed.

**8 MAINTENANCE AND INSPECTION REQUIREMENTS.** The process of generating maintenance and inspection requirements for a new aircraft is an extensive and complex

undertaking. When the MRB/MTB process is used, there are three important contributors:

1. The OEM/TCH, with their knowledge of the aircraft design;
2. The operators and members of industry, with their knowledge of operations and maintenance; and
3. The regulators, with their understanding of the regulatory system in which the aircraft will be operating.

**Note:** The MRB process should, at all times, strive to include all three points of view.

**8.1 General Process.** While the entire effort is commonly referred to as “the MRB process” or “the MSG-3 process” interchangeably, an MRB formally consists of only FAA personnel. This board interacts with the aircraft OEM/TCH and industry through the methods described in the Air Transport Association (ATA) Maintenance Steering Group – 3 (MSG-3) Report “Operator/Manufacturer Scheduled Maintenance Development.” The resulting report (MRBR or MTBR) is produced and owned by the OEM/TCH, accepted by the Industry Steering Committee (ISC), and approved by the FAA.

**8.2 Development of Maintenance Programs.** Operators will use an MRBR, MTBR, or OEM/TCH requirements document as a basis for developing and designing a maintenance program and submit it to the local regulatory authority for approval. That approval process becomes more complex if the MRBR or MTBR does not conform to a known standard. Therefore, to generate an MRBR, MTBR, or OEM/TCH requirements document using the methods described in this AC, the methods described should be followed unless a deviation is made that meets the following criteria:

1. Consistent with regulations and other policy (e.g., Order 8900.1, IMPS, and MSG-3);
2. Agreed to by all parties (including the FAA); and
3. Documented in the program’s Policy and Procedures Handbook (PPH).

**8.3 Deviation.** If the OEM/TCH does not comply with the policy stated in paragraph 8.2 of this AC, the operator’s maintenance program may meet the requirements for FAA approval of the scheduled maintenance requirements of the instructions for continued airworthiness (ICA) as the basis for an operator’s maintenance program, but the program should not be referred to as an MRB or MTB.

**8.4 Maintenance Type Board (MTB).** The MTB process is typically considered an appropriate choice for smaller/less complex aircraft where operator participation is difficult to obtain. An MTB process should follow all guidance for an MRB, and anywhere in this AC that “MRB” is stated, the same requirement(s) should be applied to an MTB, unless there is specific MTB guidance on the subject.

**9 FAA ICA REQUIREMENT.** Part 21, § [21.50](#) requires that the OEM/TCH “must furnish at least one set of complete Instructions for Continued Airworthiness to the owner of each type aircraft, aircraft engine, or propeller upon its delivery, or upon issuance of the first standard airworthiness certificate for the affected aircraft, whichever occurs later.” This includes a complete maintenance program for the full planned life of the aircraft, as well as specifications for inspections and instructions for the completion of tasks (refer to the appendix of the appropriate certification rule for specifics).

**9.1 MRBR Approval.** The OEM/TCH may use the MRBR to comply with ICA maintenance program requirements. Therefore, the FAA requires that the MRBR (and all task instructions required to complete MRBR tasks) be completed and approved no later than the time of the first aircraft delivery, as either the MRBR is part of the ICA or constitutes supporting material to meet the requirements of § 21.50.

**9.2 FAA as the VA.** There is no requirement in the IMPS and foreign CAAs may not have the same regulatory requirement that would comply with § 21.50. This may lead to a situation (when the FAA is the VA for a program) where the CA may not require the MRBR to be complete prior to the first delivery. The FAA cannot grant a U.S. TC for an aircraft that does not have a complete set of ICA available at the time of the first delivery (under the U.S. TC). The MRB Chairperson should be cognizant of this fact and ensure that the MRBR is complete at the time of FAA validation.

**10 VALIDATION AND VERIFICATION OF MRB-RELATED MAINTENANCE TASKS.** Refer to the IMPS, Chapter 3, General Application Rules; and Order 8110.4.

**10.1 MRBR Task Validation.** Task validation is the responsibility of the OEM/TCH. The OEM/TCH should develop internal instructions and guidelines to enable the validation of all maintenance procedures written to support MRBR tasks. The objective of the validation is to ensure that the procedure can be performed as written and that the procedure meets the intent of the MRBR task.

**10.2 Verification.** Verification of the OEM/TCH task validation process is the responsibility of the FAA as the CA. The OEM/TCH should demonstrate to the FAA that Failure Effect Categories (FEC) 5 and 8 safety tasks can be adequately performed, and that the procedure meets the intent of the MRBR task. At minimum, the OEM/TCH should make available the completed aircraft and the necessary qualified maintenance personnel where and when requested by the FAA. Additional tasks may be verified at the FAA’s discretion.

**10.3 ICA Validation.** If an ICA validation process is performed under Order 8110.4 (or equivalent), that process may be used to comply with the contents of paragraph 10, even if it occurs after the approval of the initial MRBR. If the ICA validation process uncovers problems with the MRBR tasks, that information would then be fed back (internally within the FAA) to the MRB Chairperson, and changes to the MRBR may be required prior to the original or first revision of the MRBR.

**11 CANDIDATE CERTIFICATION MAINTENANCE REQUIREMENTS (CCMR).** Refer to the IMPS, Chapter 4, Maintenance Review Board (MRB) Process Specification; and AC 25-19.

**11.1 CCMR Development.** CCMRs are a part of the certification process and are based on underlying engineering System Safety Assessments (SSA) that establish when the degradation of a system becomes an unacceptable safety risk. Some of these become Certification Maintenance Requirements and are listed in the product’s Airworthiness Limitations Section (ALS). Other CCMRs may be satisfied by the completion of an equivalent MRBR task.

**11.2 FEC 5 and 8 Tasks.** The FAA’s policy for handling CCMRs is published in AC 25-19. To ensure that CCMRs are handled with the appropriate level of importance, and to reflect the underlying SSA, only FEC 5 or 8 tasks may be considered for satisfying CCMRs. FEC 5 and 8 tasks cannot be deleted from the operator’s maintenance program. Additionally, any imported product that does not comply with the process contained in AC 25-19 will not be deemed suitable for use in the United States.

**12 FAA MAINTENANCE REVIEW BOARD POLICY BOARD (MRBPB).** The MRBPB advocates the standardization of MRB policy and procedures and provides a structured forum for discussions leading to the development of national and international recommendations regarding all MRB activities. The MRBPB develops AED positions for standardized guidance on issues that arise from the MRB or MSG-3 process. Continued development of standardized MRB policies, procedures, and guidance promotes harmonization within the respective AED offices and participating industry groups.

**12.1 Membership.** Membership includes an AED representative from each branch that is selected by each branch manager, including a member from the AED Standards and Policy Branch who will act as a facilitator. An individual from the AED will be selected to act as the chairperson. The Aircraft Maintenance Division may be requested as a resource as needed. Furthermore, a representative from the Aircraft Certification Service (AIR) will act as a liaison for certification issues.

**12.2 Meeting Frequency.** The MRBPB normally meets at least twice a year, with one meeting prior to the IMRBPB meeting. Additional meetings may be held as required.

**12.3 Purpose.** The MRBPB develops harmonized issue papers (IP), procedures, and guidance. The MRBPB also produces FAA guidance for IPs recommended for implementation by the IMRBPB. The MRBPB participates in international meetings on MRB policy issues with other regulatory authorities. A member of the MRBPB will be designated to represent the FAA at scheduled IMRBPB meetings. A governing charter for the MRBPB is maintained by the FAA’s AED Standards and Policy Branch.

**13 INTERNATIONAL MAINTENANCE REVIEW BOARD POLICY BOARD (IMRBPB).** The IMRBPB develops policies, procedures, and guidance for the use of personnel operating under the purview of various MRBs. The IMRBPB provides a process that promotes harmonization with other regulatory authorities throughout the

world and advocates the standardization of MRB policy and procedures. The IMRBPB also provides a structured forum for discussions leading to the development of national and international policy regarding all MRB activities.

- 13.1 Membership.** The IMRBPB is made up of members from regulatory authorities who have signed the IMRBPB charter.
- 13.2 Meeting Frequency.** The IMRBPB convenes once a year. Industry/regulatory discussions are a portion of the meeting. The meeting venue will normally rotate among the IMRBPB members. A4A and the Maintenance Programs Industry Group (MPIG) under the A4A Airworthiness Committee represent the industry at the IMRBPB meeting.
- 13.3 Purpose.** The IMRBPB maintains an IP list with associated documents, such as meeting minutes, action item lists, substantiation documents, and associated IMRBPB policy decisions.
- 13.4 International MRB/MTB Process Standard (IMPS).** The IMPS is maintained by the IMRBPB on the EASA website and forms the basis for the MRB/MTB process. The IMPS is revised normally on a 3-year cycle by the IMRBPB. The basis for the revision is generally a result of the IMRBPB IP process.
- 14 OEM/TCH RECOMMENDED MAINTENANCE PROCEDURES.** OEM/TCHs of aircraft that are less than 12,500 pounds (lbs) or helicopters that are to be type certificated in the normal category and are less than 7,000 lbs may develop their scheduled maintenance tasking/interval requirements in accordance with OEM/TCH internal processes. The OEM/TCH should meet the requirements of Order 8110.54, in addition to the criteria below. OEM/TCHs for these aircraft have the option of using the MRB process or MTB process.
- 14.1 The United States is the State of Design.** The FAA is the primary type certification authority. The OEM/TCH who is applying for a TC for a new or derivative aircraft, for which this paragraph is applicable, may develop its scheduled maintenance requirements in accordance with a recommended maintenance procedure. The AED will invite other regulatory authorities, in coordination with the OEM/TCH, to discuss the process by which the scheduled maintenance requirements will be developed, and how those regulatory authorities may accept that process.
- 14.2 The United States is Not the State of Design.** A foreign applicant who is applying for an FAA TC for a new or derivative aircraft for which this paragraph is applicable will invite the AED to discuss the process by which the scheduled maintenance requirements will be developed and how the FAA may accept that process.
- 14.3 Audit of the Completed Analytical Process.** All OEM/TCHs should maintain records of the analysis used to develop their scheduled maintenance requirements. These records should be kept in such a manner that the FAA may readily audit the analytical process and any subsequent analytical processes that may lead to an amendment of the minimum scheduled maintenance tasking/interval requirements.

**14.4 Validation of the Associated Maintenance Procedures.** The OEM/TCH should develop internal instructions and guidelines to enable the validation of all maintenance procedures written to support scheduled maintenance tasks; the OEM/TCH should then validate those maintenance procedures. The objective of the validation is to ensure that it is possible to perform the procedure and that the procedure meets the intent of the scheduled maintenance requirement. Where and when requested by the FAA, the OEM/TCH should make available a completed aircraft and the necessary qualified maintenance personnel to demonstrate to the FAA that any particular maintenance procedure can be adequately performed and that the procedure meets the intent of the scheduled maintenance task.

**14.5 Scheduled Maintenance Requirements Review and Approval.** The ICA, as published by the OEM/TCH, should contain a statement that the scheduled maintenance requirements and their associated procedures have been reviewed and approved for use by operators. The ICA should identify any limitations applicable when implementing the requirements.

**14.5.1 Scheduled Maintenance Requirements Publication.** The OEM/TCH should publish the scheduled maintenance requirements as part of the aircraft’s ICA. It is the responsibility of the OEM/TCH to issue amendments to the ICA, as required.

**14.5.2 Scheduled Maintenance Requirements as a Dynamic Document.** Before FAA approval of the scheduled maintenance requirements as part of the aircraft’s OEM/TCH process, the OEM/TCH should develop an auditable system for continuing analysis of all tasks included within the maintenance requirements. As part of the continuing analysis system, the OEM/TCH should address the following:

1. A system for acquiring, from operators, reports related to the adequacy of tasks, failures, failure frequencies, and the consequences of each failure.
2. An age exploration system for the continuous evaluation of age condition information for the substantiation of current task maintenance intervals and for the adjustment of task maintenance intervals.
3. A system for controlling the addition of new scheduled tasks to ensure that they are applicable and effective.
4. A system for the periodic evaluation of all tasks in the program to eliminate those that are no longer applicable and effective.
5. A system for evaluating unanticipated problems and determining the appropriate action.

**15 FLIGHTCREWS ACCOMPLISHING MAINTENANCE.** Title 14 CFR defines people authorized to accomplish maintenance. Flightcrews may not perform any task that is used to fulfill MRBR/MTBR tasking requirements.

**15.1 Private Pilots.** Inspections are considered maintenance under part 1, § [1.1](#). Furthermore, part 43, § [43.7\(f\)](#) states, “A person holding at least a private pilot certificate may approve an aircraft for return to service after performing preventive maintenance under the



provisions of § 43.3(g).” Flightcrews are not permitted to accomplish any maintenance accomplished outside the scope of preventive maintenance as defined in part 43 appendix [A](#), paragraph (c).

- 15.2 Air Carrier/Commercial Operator Pilots.** Air carrier/commercial operator pilots are not allowed to accomplish maintenance/preventive maintenance tasks without an exemption to perform those tasks. The only exception to this rule is rotorcraft under § [43.3\(h\)](#).
- 16 AC FEEDBACK FORM.** For your convenience, the AC Feedback Form is the last page of this AC. Note any deficiencies found, clarifications needed, or suggested improvements regarding the contents of this AC on the Feedback Form.

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