



Maintenance Review Board Team

Doc # **C.I011-01**

Work Instruction Control Sheet

Directorate in charge: Certification Directorate
Process concerned: Flight Standards Certification (level0) / Maintenance Review Board (level 1)
Process owner: Maintenance Review Board Section Manager – C.3.1

Reference documents ¹:

a) Internal:

Decision No 2003/19/RM of the Executive Director of the Agency of 28 November 2003 on acceptable means of compliance and guidance material to Commission Regulation (EC) No 2042/2003 of 20 November 2003 on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks, Annex 1 Acceptable Means of Compliance to Part M, *as last amended*

Decision No 12/2007 of 01 October 2007 of the Management Board amending Decision No 07/2004 of the Management Board concerning general principles related to the certification procedures to be applied by the Agency for the issuing of certificates for products, parts and appliances ("Product Certification Procedures").

Decision No 2009/009/E of the Executive Director of the Agency of 20 February 2009 on the delegation of powers of the Executive Director to certain staff members of the Certification Directorate to *take decisions for the application of Art 20 and Art 55*.

C.H001 Certification Handbook
C.P005 Maintenance Review Board
C.I001 Decisions and signatures for Product Safety Oversight
C.I009 Record Keeping and Archiving
C.I013 Request for Legal Advice for Product Safety Oversight
C.I021 Maintenance Review Board Guidelines

b) External:

ICAO Annex 8 – Airworthiness of Aircraft (This document can be downloaded from the AV-DATA database (<http://aero-defense.ihs.com>) for internal users only.)

Commission Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (hereinafter referred to as "the Basic Regulation") (OJ L 79, 19.3.2008).

Commission Regulation (EC) No 1702/2003 of 24 September 2003 laying down the implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations (OJ L 243, 27.9.2003).

Commission Regulation (EC) No 2042/2003 of 20 November 2003 laying down implementing rules for the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks (OJ L 315, 28.11.2003).

¹ Note: References to any statute, statutory instrument, Agency rule, procedure and policy shall include amendments or consolidations thereof in as much as the referenced document remains relevant for this work instruction and provided that such amendments or consolidations do not affect the content of this work instruction.



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Commission Regulation (EC) No 593/2007 of 31 May 2007 of the fees and charges levied by the European Aviation Safety Agency (OJ L 140, 01.06.2007).

Commission Regulation (EC) No 1356/2008 of 23 December 2008 amending Commission Regulation (EC) No 593/2007 on the fees and charges levied by the European Aviation Safety Agency (OJ L 350, 30.12.2008).

Related Forms

EASA Form 40	Application for Approval of Maintenance Review Board Report (MRBR), Manufacturer Recommended Maintenance Programme (MRMP), Supplement to MRBR and revisions thereto
EASA Form 120	Status Report for MRB Activities
EASA Form 124	Statement of Technical Satisfaction to the European Aviation Safety Agency for MRB activities
Form E.F026	Request for Legal Advice

Other related documents

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Log of issues:

Issue #	Issue date	Change description	Related documents affected by new issue
01	29.05.2009	First Issue taking into account ICAO finding 2-5-2 from EASA audit in 2008	---

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2. Acronyms

AMC	Acceptable Means of Compliance
APU	Auxiliary Power Unit
ATTN	For the attention of
ATA	Air Transportation Association
CMC	Central Maintenance Computer
CMCC	Certification Coordination Committee
CS	Certification Specification
DI	Detailed Inspections
EASA	European Aviation Safety Agency
EC	European Commission
ECTM	Engine Condition Trend Monitoring
ETOP	Extended Twin Engine Operations

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FAA	Federal Aviation Administration
GVI	General Visual Inspection
HIRF	High Intensity Radiated Field
IMRBPB	International Maintenance Review Board Policy Board
ISC	Industry Steering Committee
JAA	Joint Aviation Administration
L	Lightning
MPP	Maintenance Programme Proposal
MRB	Maintenance Review Board
MRBR	Maintenance Review Board Report
MSI	Maintenance Significant Item
MSG	Maintenance Steering Group
NAA	National Aviation Authority
NDI	Non Destructive Inspection
PPH	Policy and Procedures Handbook
SSI	Structural Significant Items
TC	Type Certificate
TR	Temporary Revision
WG	Working Group

3. Introduction

Pursuant to Article 20 of Regulation (EC) No. 216/2008² (hereafter referred to as “the Basic Regulation”), the Agency shall carry out on behalf of the Member States the functions and tasks *inter alia* of the State of Design when related to design approval. In particular, according to its Article 20(1)(j), the Agency shall ensure the continuing airworthiness functions associated with the products, parts and appliances which are under its oversight.

Pursuant to Article 3 of Commission Regulation (EC) No 2042/2003, the continuing airworthiness of aircraft and components shall be ensured in accordance with the provisions of Annex 1 (Part M) to this Regulation.

M.A.302 of Annex 1 (Part M) to Commission Regulation (EC) No 2042/2003 Part establishes that every aircraft shall be maintained in accordance with a maintenance programme approved by the competent Authority and EASA Acceptable Means of Compliance to M.A. 302(c) makes reference to the possibility

² Commission Regulation (EC) No 216/2008 of the European Parliament and the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (hereinafter referred to as “the Basic Regulation”) (OJ L 79, 19.3.2008)

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that the aircraft maintenance programme should normally be based upon the Maintenance Review Board Report (MRBR) where applicable.

3.1.2. Under Article 44(1) of Regulation (EC) No. 1592/2002³, replaced by Article 53(1) of Regulation (EC) No. 216/2008 as of 8 April 2008⁴, the Management Board adopted Decision No 12/2007 of 01 October 2007 of the Management Board amending Decision No 07/2004 of the Management Board concerning the general principles related to the certification procedures to be applied by the Agency for the issuance of certificates for products, parts and appliances (hereinafter referred to as "MB Decision 12/2007"), including post certification activities, in accordance with the Basic Regulation and its Implementing rules.

According to its Article 10(1), the Agency participates to the Maintenance Review Board set up by the Type Certificate Holder and aiming at developing the initial minimum scheduled maintenance requirements for derivative or newly type certificated aircraft.

Article 15 of MB Decision 12/2007 mandates the Executive Director to "establish the necessary associated detailed procedures for the implementation of this Decision [...]". This work instruction has been adopted under this mandate.

3.1.3. The MRBR is a report containing the initial minimum maintenance requirements for derivative or newly type certified aircraft and rotorcraft and as such meets part of the requirement of CS 25.1529 and CS 25 Appendix H, CS 23.1529 and CS 23 Appendix G, CS 29.1529 and CS 29 Appendix A, CS 27.1529 and CS 27 Appendix A.

This document provides guidelines for the development of the MRB process from which the aircraft maintenance programme specified in Annex 1 (Part M) to Commission Regulation (EC) 2042/2003 can be produced.

4. Background

The process of developing aircraft maintenance programmes for new aircraft and powerplants has evolved from one in which each operator proposed his own unique programme, to one in which the regulatory authorities and industry work together to develop the initial minimum maintenance/inspection requirements for new aircraft and/or powerplants.

Early experience in the development of initial scheduled maintenance/inspection requirements revealed that a programme of effective maintenance tasks could be developed through the use of logical analysis and decision processes. In 1968, an industry team called the Maintenance Steering Group, 1st Task Force developed maintenance requirements decision and analysis logic. This decision logic and analysis procedure was entitled MSG-1. These MSG-1 procedures were used by industry and the FAA to develop the initial minimum maintenance/inspection recommendations for the Boeing 747 aircraft and its powerplants. The National Aviation Authority (NAA) members of JAA endorsed the process for the B-747 aircraft. A later task force utilised the experience gained on the B-747 project to update the MSG-1 procedures so that a universal document could be applicable for subsequent newly type-certificated aircraft and/or powerplants.

This effort resulted in the MSG-2 document. MSG-2 procedures were used to develop the initial minimum maintenance/inspection recommendations for aircraft/powerplants of the 1970's. In 1980, the combined efforts of U.S. and European aircraft and engine manufacturers, U.S. and foreign airlines, the Air Transport Association, and the FAA generated new decision logic and analysis procedure contained in a new document called MSG-3. In 1987, after using MSG-3 analysis procedures on a number of new aircraft and powerplants in the first half of the 1980's, industry felt that the benefits of the experience

³ Regulation (EC) No 1592/2002 of the European Parliament and the Council of 15 July 2002 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency (OJ L 240, 07.09.2002).

⁴ Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (hereinafter referred to as "the Basic Regulation")(OJ L 79, 19.03.2008)

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gained should be used to improve the document for future applications. Thus Revision 1 (R1) was developed.

The JAA-NAA's and the Industry used MSG-3R1 from 1988, MSG-3R2 since 1993 and MSG3 revisions 2001, 2002 and 2003. The EASA has accepted MSG-3, Revision 2005.1 for today's aircraft and powerplant MRB Reports.

5. Maintenance Steering Group (MSG) logic

The EASA accepts the Maintenance Steering Group MSG analytical logic process for the development of aircraft maintenance programmes. The applicant should always use the latest revision of MSG published at the date of commencing the MRB process. Copies of the latest MSG logic can be obtained from:

Air Transport Association of America, Inc.
1301 Pennsylvania Avenue, NW – Suite 1100,
Washington DC 2000 - 4 – 1707
ATTN: Publications

Tel. No. +1-202-626-4000

<http://www.airlines.org>

6. MRB Process Applicability

The "MRB process" consists of all the activities performed to produce, review, accept and amend the Maintenance Review Board Reports (MRBR) and Supplement to MRBR.

This work instruction provides guidelines that on the one hand may be used by the industry during the development and revision of the initial minimum scheduled maintenance requirements for derivative or newly type-certificated aircraft and that on the other hand must be followed by the Agency when it has been requested by the Applicant to provide assistance to the Applicant during the Applicant's compliance demonstration to Certification Specification, CS XX.1529, through the MRB process.

This work instruction is complemented by the EASA procedure C.P005 Maintenance Review Board, which explains how EASA will internally handle applications for acceptance of Maintenance Review Board Reports (MRBR) or Supplement to MRBR.

The MRB process is applicable:

1. For Large Aeroplanes and Category A Large Rotorcraft where the EASA is the Primary Type Certifying Authority or for Large Aeroplanes and Category A Large Rotorcraft for which an applicant has applied for EASA type approval. The TC applicant is required, in respect of new or derivative Large Aeroplanes above 13000 kg maximum take off weight and Category A Large Rotorcraft above 9072kg to make application for a Maintenance Review Board (MRB) to the EASA Flight Standards MRB Section unless an alternative process has been agreed (see note below).
2. For aircraft between 5700 KG and 13000 KG maximum take off weight the TC applicant may make application to the EASA Flight Standards MRB Section for a MRB.
3. MRBs are not conducted for aircraft of less than 5700 KG maximum take off weight and therefore no application is required.
4. On receipt of an MRB request the provision of paragraph 10.1 will apply.

Note: If the applicant proposes to utilise an analytical logic other than MSG-3, the applicant must demonstrate that their alternative means of compliance will result in an equivalent level of integrity and safety. In such cases the TC applicant must propose to the EASA MRB Section the analytical logic process proposed. The EASA MRB Section will rule on the acceptability or otherwise of the alternative process.

**Work Instruction Control Sheets****7. EASA Maintenance Review Board Harmonisation Meetings**

The purpose of the meeting is to address EASA policy as it relates to the MRB process, assist with the harmonisation of the MRB process and ensure that EASA policy is applied to the MRB process in a standardised way. In addition, it will review and if necessary propose 'Issue Papers' for consideration at the International MRB Policy Board. The Chairperson of the meeting is the EASA MRB Project Manager. All EASA MRB Chairpersons and any invited specialists will attend the meeting. The meeting will be held at least once a year.

8. International MRB Policy Board

The International Maintenance Review Board Policy Board (IMRBPB) is constituted as a system for the continuing development of policies, procedures and guidance for the use of personnel involved in the Maintenance Review Board process and is supported by the EASA. In addition to promoting harmonisation with other regulatory authorities, the IMRBPB advocates the standardisation 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.

Note 1: Positions issued at IMRBPB meetings are not policy; positions become an EASA policy only when formally published in the appropriate EASA documentation.

Note 2: Further information on the IMRBPB, EASA Issue Paper Management Procedure and EASA published policy can be found at http://www.easa.europa.eu/ws_prod/c/c_flightimrbpb.php.

9. Outline of the MRB process

The process of developing maintenance programmes for new aircraft and power plants has evolved from one in which each operator proposed his own unique programme to one in which the EASA, other regulatory authorities and industry (type certificate applicant, air operator) work together to develop the initial minimum maintenance requirements for new aircraft and/or power plants.

The primary purpose of the MRB process is to assist the design organisation and the air operator in establishing an initial approved maintenance programme for aircraft and the regulatory authority in approving that programme.

The MRB supports, by active participation, the development of a proposal or a report containing the initial minimum maintenance requirements to be used in the development of an approved maintenance programme for a derivative or newly certificated aeroplane.

The State of Design should approve certain minimum maintenance requirements that will be used by an operator to establish the operator's maintenance programme.

The MRB basically consists of a number of specialist working groups composed of selected specialists from regulatory authorities, operators, TCH/STCH/OEM who use the MSG-3 logic to develop and propose maintenance tasks for a specific aircraft type. These working groups are working as per procedures and policies developed by the Industry Steering Committee (ISC). The Agency and other regulatory authorities (authorities of the States of intended operators) may participate in these working groups in an advisory capacity. The MRB also ensures that the design organisation and manufacturer provide the necessary technical training to MRB, ISC and WG members. The MRB reviews reports, provides notification of potential problem areas and offers guidance and assistance to the ISC and WG.

The proposed tasks are presented to an Industry Steering Committee (ISC). The Agency and other regulatory authorities (the States of the intended operators) normally participate in the ISC and its individual WGs in an advisory capacity.

The ISC prepares, after considering the working group proposals, a draft MRBR. This draft is then reviewed by the MRB Chairperson and his/her advisors. Upon successful review, the Agency accepts the MRBR or its revision. It is then published as the MRBR.

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The MRBR outlines the initial minimum maintenance requirements to be used in the development of an approved maintenance programme for the aeroplane.

The MRBR becomes the basis for the first issue of an air operator's initial maintenance programme.

10. Actors and Responsibilities**10.1 Type Certificate applicant**

The Type Certificate Applicant is required to:

1. To make application to the EASA MRB Section for approval of the MRBR and agree payment of the relevant fees (see notes below).
2. Invite EASA and any participating non-EASA NAA's to participate in the MRB process.
3. Develop a Policy and Procedures Handbook (PPH) for presentation to the ISC (see paragraph 24. Appendix 2 – Policy and Procedures Handbook (PPH)).
4. Provide general familiarisation training for the MRB, ISC, and working groups.
5. Provide the ISC with an initial list of maintenance significant items (MSI) and structural significant items (SSI) with sufficient data to support the reason each item was selected.
6. Provide industry working groups with sufficient technical data to support the analysis of MSI's/SSI's. Technical data should be timely and adequate.
7. Provide the ISC and appropriate working groups, in a timely manner, with information concerning certification issues and resolutions regarding proposed tasks originating from the certification process; i.e. airworthiness limitation items or certification maintenance requirements.
8. Assure that the type certificate applicant's manual(s) contains information covering those on-aircraft systems/powerplant tasks in the EASA MRB Report.
9. Participate in ISC and working group activities.
10. Publish and distribute the initial and revised MRB Reports (see paragraph 11. MRB Report approval)

Note 1: Application is to be made using EASA Form 40 'Application for Approval of Maintenance Review Board Report (MRBR), Supplement to MRBR, Manufacturer Recommended Maintenance Programme (MRMP) and revisions thereto'. The form and associated completion instructions are available at http://www.easa.europa.eu/ws_prod/c/c_app_forms.php.

Note 2: The EASA fees are detailed in the Commission Regulation (EC) No. 593/2007 on the fees and charges levied by the European Aviation Safety Agency (OJ L 140, 1 June 2007, p. 3), as amended by Commission Regulation (EC) No. 1356/2008 of 23 December 2008 (OJ L 350, 30 December 2008, p. 46) available at http://www.easa.europa.eu/ws_prod/g/rg_regulations_fnc.php.

10.2 Industry Steering Committee (ISC)

1. The TC applicant should organise the setting up of an ISC. The ISC membership should be composed of representatives from aircraft, engine and propeller manufacturers as appropriate and intended operators.
2. Intended operators may delegate ISC participation to nominated representatives such as personnel from contracted Maintenance Organisation for the specific type of aircraft. Such delegated person should act on behalf of the operator. The attendance of maintenance organisation personnel in the working groups and other MRB related activities would have to be sanctioned by the ISC chairman. In such case the ISC Chairperson should preferably ensure a good balance between operators and maintenance organisation representatives.
3. The ISC develops and establishes policy with regard to procedural matters for the development of the proposed MRB report, directs the activities of the working groups, and prepares the MRB report proposal in the form of a Maintenance Programme Proposal (MPP).

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4. It is also the function and responsibility of the ISC, under the direction of the ISC chairperson, to:
5. Determine the number and type of working groups that will be necessary and organise them.
6. Provide the MRB chairperson with a list of the various types of working groups and the name and affiliation of each working group member, and changes as they occur.
7. Review and approve the Policy and Procedures Handbook (PPH) and forward it to the MRB chairperson for review and acceptance by the EASA.
8. Arrange for necessary technical and MSG-3 training of all steering committee and working group members and EASA advisors.
9. Invite the MRB chairperson and selected MRB members to ISC meetings.
10. Invite other regulatory authorities to ISC meetings and arrange for the training of such regulatory authorities staff.
11. Attend MRB meetings when requested by the MRB chairperson.
12. Review all working group analysis and presentations.
13. Identify ISC changes to Working Group proposals in the ISC meeting minutes.
14. Provide supporting technical data/analysis for the proposed MRB Report.
15. Document, and present the proposed MRB report in the form of an MPP to the MRB chairperson.
16. Review and provide comments on proposed revisions to the MRB Report.

10.3 Working Groups

The TC applicant in conjunction with the ISC should organise the setting up of working groups. Such groups should be composed of the manufacturer and purchaser/operator representatives and be chaired by an industry representative appointed by the ISC. The MRB chairperson will assign EASA personnel to act as advisors to each working group. EASA working group advisors may include staff from EASA certification divisions and staff from non-EASA authorities.

Working groups are responsible for conducting significant item analysis using the MSG Logic process, as revised to develop the initial minimum maintenance inspection requirements for the new or derivative aircraft. Working Groups should establish meeting minutes to provide to the ISC and MRB.

10.4 EASA Participation

1. When the TC Applicant formally makes application in accordance with paragraph 10 of the intention to proceed with development of an MRB proposal the EASA MRB Section will appoint a chairperson for the MRB using EASA staff and when necessary NAA seconded staff under appropriate contractual arrangements.
2. The chairperson will request a selected number of advisors and specialist staff as appropriate, being EASA staff and when necessary NAA seconded staff under appropriate contractual arrangements, to form the MRB.
3. The EASA MRB Section will ensure prior to appointment that the chairperson, advisors and specialist staff possess the knowledge & competence level appropriate to their role.
4. The EASA MRB staffing policy is that in consultation with the Chairperson the EASA will determine the number of staff required to participate in the MRB, ISC and Working Groups. For new type certification projects, major changes, existing approved MRBR evolution exercises, new regulation incorporation or similar activity the EASA will, depending on resources participate in all MRB, ISC and Working Groups. Participation may be reduced for existing approved MRBR development and review where there are no major changes involved. Participation may also be reduced for non European Union projects where privileged relationships and harmonised policies are in place (see note 2). As a minimum, participation at the ISC and a selection of working groups will be required.

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5. The chairperson will provide summary progress reports to the EASA MRB Section following each meeting. The summary progress report should indicate the future schedule of meetings, intended date of completion, details of potential or real problem areas and working and travel hours expended.
6. In accordance with Commission Regulation (EC) No. 2042/2003, Part M, the EASA MRB Section will issue the EASA 'Approval of the MRBR Letter' following submission of the Technical Visa from the MRB Chairman.
7. The EASA MRB Section will maintain a register of EASA approved MRBR's on http://www.easa.europa.eu/ws_prod/c/c_flightmrbr.php.

Note1: Paragraph 10.4 contains additional responsibilities for the chairperson.

Note2: For example, the applicants' regulatory authority is subject to an International Working Arrangement with the EASA and they participate in the International MRB Policy Board process.

10.5 Maintenance Review Board (MRB)

The MRB supports, by active participation, the development of an industry proposal of an MPP containing the initial minimum maintenance/inspection requirements for a derivative or newly type-certificated large aircraft and powerplants. It also acts on the MRB Report Proposal or revision in accordance with these procedures. The MRB will be composed of EASA maintenance airworthiness surveyors and may include EASA certification staff as advisors to the Board. The MRB chairperson will assign MRB members to work as advisors to the industry working groups.

It is also the function and responsibility of the MRB, under the direction and management of the MRB chairperson to:

1. Determine in consultation with the EASA MRB Section the number and type of EASA personnel that are necessary and organise them.
2. Provide the ISC Chairperson with a list of EASA personnel names, their affiliations, assignments, and changes as they occur.
3. Ensure with the TC Applicant a harmonised and co-ordinated approach with non EASA NAA participants, through their representatives.
4. For EASA projects agree the participation of non EASA NAA's at the MRB and inform the ISC Chairperson of participating non EASA NAA's.
5. Establish the extent of non EASA NAA participation and assignment of Working Group Advisors.
6. Brief non EASA NAA's regarding MRB policy and procedures prior to and during the MRB process.
7. Establish and maintain a file of all MRB and ISC proceedings for the MRB historical file.
8. Accept the PPH following a review by participating regulatory authorities within thirty days of receipt.
9. Co-ordinate the MRB activities and associated matters with the ISC Chairperson.
10. Ensure the manufacturer provides the necessary technical and MSG training to MRB Members and Working Group Advisors.
11. Attend ISC meetings.
12. Ensure appropriate EASA attendance at all Working Group meetings.
13. Offer guidance and assistance to the ISC and the Working Groups.
14. Invite the ISC Chairperson and selected ISC members to MRB meetings.
15. Review reports from previous ISC meetings (if applicable) and reports from the Working Group Members.

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16. Provide timely notification of potential problem areas or controversy to the EASA MRB Section and Project Certification Manager and to the ISC Chairperson.
17. Establish and maintain links with the EASA Project Certification Manager and participate in any associated activity as required i.e. EOAB, CMCC, ETOP'S, etc.
18. Recommends to the EASA Approval of the MRB Report and revisions using a Technical Visa signed by the MRB Chairperson.
19. To provide a representative normally, the MRB Chairperson to the EASA MRB Harmonisation Meeting.

10.6 MRB Members tasks

MRB members are required to:

1. Provide guidance to the EASA Working Group Advisors and Working Group Members.
2. Direct EASA Working Group Advisors in assigned Working Group.
3. Attend MRB meetings.
4. Attend ISC meetings as invited by the MRB Chairperson in coordination with the ISC Chairperson.
5. Review Working Group meeting minutes and provide progress reports, prior to the next scheduled ISC meeting, to the MRB Chairperson. This review will contain an assessment of Working Group activities, including a notification of controversial or potential problem areas.

10.7 EASA working group advisors tasks

EASA working group advisors are required to:

1. Attend Working Group meetings and provide guidance to the Working Group Members.
2. Attend MRB meetings when requested by the MRB chairperson.
3. Provide progress reports, to the EASA MRB Section, MRB Member assigned to the Working Group and MRB Chairperson, prior to the next scheduled ISC meeting. This report will contain an assessment of Working Group activities, including notification of controversial or potential problem areas and details of working and travel hours.

Note: EASA Working Group Advisors may include EASA Certification staff.

11. MRB Report approval

1. Upon receipt of the MPP from the ISC Chairperson, the MRB Chairperson shall invite the MRB Board Members to review the MPP. When all issues have been resolved, including if appropriate, those of the non EASA NAA's, the MRB Chairperson will recommend to the EASA MRB Section approval of the MRBR. The recommendation will be made using the EASA Technical Visa.
2. The approved MRB Report will be forwarded to the ISC Chairperson under a letter of transmittal. Normally, non EASA NAA's approval will occur concurrently with that of the EASA. This approval process will occur as soon as practicable but in any case within a time frame of not more than ninety days.
3. The TC Applicant/holder is responsible for publishing and distributing initial and revised MRB Reports, and any supporting documents.
4. A copy of the MRB Report plus any subsequent revisions should be sent to both the EASA MRB Section and the EASA MRB Chairperson.
5. It may be a necessary to identify national regulation differences that are not compatible, acceptable or applicable to all regulatory authorities. When this condition exists, an appendix to the MRB Report shall be used to list these differences, each being approved by the respective regulatory authority.

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Note 1: The MRBR is published by the TC Holder and with the exception of the approval letter should not include Regulatory Authority logos.

Note 2: The TC Holder may publish the MRBR in digital or paper format or both.

12. EASA non-acceptance of the proposed Maintenance Review Board Report or revision

The MRB Chairperson will co-ordinate with the EASA MRB Section if it is likely that a recommendation for approval of the MRB Report or Revision will not be able to be made prior to notifying the ISC Chairperson officially in writing of such action. The non-approval letter will include the specific justification for the non-approval and the necessary guidance needed to make the MRB Report proposal or revision acceptable. The non-approval subject(s) should be discussed with the ISC Chairperson before initiating this process.

13. Resolution of Disagreements

According to Article 18(1) of MB Decision 12/2007, every effort shall be made to resolve any disagreements between the Applicant and the EASA at the lowest possible level.

The MRB Chairperson, together with the ISC Chairperson, will be the primary decision maker in the process under the supervision of the MRB Coordinator. They shall have the ability and power to take the first decisions to the largest possible extent.

In the event issues cannot be resolved during the MRB process and/or the Applicant does not agree with the decision taken, the MRB Chairperson and the ISC Chairperson will bring the matter together with supporting data to the EASA MRB Coordinator. When the ISC and MRB are in dispute, each will submit its own report for consideration by the EASA MRB Coordinator.

The EASA MRB Coordinator as a first step, and the responsible EASA MRB Section Manager afterwards, will try to reach a mutually acceptable resolution.

If an agreement still cannot be reached, the matter will be brought to the Head of Flight Standards Certification Department and Certification Director afterwards who will take a decision thereto.

Following Article 18(2)(3)(4) of MB Decision 12/2007, if further escalation is necessary the final decision will be made by the EASA Executive Director, following consultation with the PE. In this case the Applicant shall have the right to be heard by the PE. The opinion of the PE will be communicated to the Applicant together with the final decision.

14. Involvement of the Legal Department

For further details, refer to C.I013 Request for Legal Advice for Product Safety Oversight.

15. MRB Report revision

1. The MRB report is intended to be an up-to-date document and as such, the ISC Chairperson, the TC Holder and the MRB Chairperson, will conduct, joint regular reviews to determine the need for a revision. Such reviews must be conducted at least annually. Results of these reviews will be documented by the MRB Chairperson for inclusion in the MRB historical file.
2. The annual review should consider but not be limited to the following: modifications to the original design standard, in-service experience, fleet reliability, changes to the operating environment, age of the aircraft fleet, changes to the applicability including fleet utilisation, incorporation of Temporary Revisions, etc.
3. Changes may be proposed directly by the TC holder, unless the ISC considers that there is a need to convene an ad-hoc Working-Group, subject to the availability of Industry experts for such a Working Group.
4. If a need exists, the ISC and MRB will convene and evaluate the proposed changes. Proposed changes are submitted with supporting data to the MRB Chairperson through the ISC Chairperson. Approval/non approval of proposed revisions will be processed in the same manner as outlined above for the initial MRB Report approval/non approval.

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5. The MRB Report should reflect the type certification basis of the aircraft; MRB revisions resulting from analysis of modifications/variants can be annotated in the MRB Report or by the addition of an applicability column to the task list.
6. If the TC Holder proposes to utilise a MRBR temporary revision procedure then this must be agreed by the ISC and MRB. The procedure must be included in the Policy and Procedures Handbook (see Appendix 2). As the purpose is usually to provide information quickly it may be that approval can be limited to the ISC and MRB Chairperson providing the revision is subject to a full assessment at the annual review. All MRBR revisions are required to be approved by the EASA (see paragraph 10.3).

15.1 Recommended MRB Report format and content

Each MRB Report shall be entitled "MRB Report" and, as a minimum, shall include as appropriate the contents as detailed in paragraph 16. "Appendix 1 – Recommended MRB Report Format and Content".

15.2 Recommended Policy and Procedures Handbook (PPH) format and content

Each applicant shall develop a Policy and Procedures Handbook and shall include as appropriate the contents as detailed in paragraph 17. "Appendix 2 – Policy and Procedures Handbook".

**Work Instruction Control Sheets****16. Appendix 1 : Recommended MRB Report Format and Content**

Each MRB Report shall be entitled "MRB Report" and, as a minimum, shall include the following, as appropriate:

7. Revision Log
8. List of Effective Pages, including the revision status and dates.
9. Title page, containing the title of the MRB Report and the report number (if any).
10. Table of contents
11. Approval Page
12. ISC/MRB Personnel Listing. ISC/MRB personnel, their organisational affiliation, and the capacity in which they serve should be listed in the MRB Report.
13. MRB Preamble. The following information should be included in the Preamble for each MRB Report:

"This Report outlines the initial minimum maintenance/inspection requirements to be used in the development of an approved continuous airworthiness maintenance programme for the airframe, engines, systems, and components of (aircraft make, model and series). These MRB requirements are a basis from which each operator develops its own continuous airworthiness maintenance programme.

The responsible EASA competent authority Surveyor shall ascertain that all of the applicable maintenance/inspection requirements in this Report are included in the operator's initial continuous airworthiness maintenance programme."

14. Acronyms
All acronyms used in the MRB Report should be defined. A listing of these acronyms that should be contained in the Report is provided in paragraph 2 - Acronyms.
15. Definitions
Definitions of technical terms including inspections shall be included in the MRB Report. The use of industry accepted definitions, such as those found in ATA MSG documents and World Airlines Technical Operations Glossary, should be used whenever possible.
16. Applicability
The MRB Report must clearly identify the aircraft for which it is intended (e.g. make/model/series; type/series, etc., as applicable) and the standard options. New options will be added to the MRB Report Summary Sheets.
17. Checks and Intervals
All tasks and their frequencies shall be identified in the MRB Report. Maintenance tasks and tasks intervals arising from MSG-3 analysis may and do, in some cases, have a shorter interval than an "A" check such like, "Weekly" or "Daily". Such tasks and intervals must also be identified in the MRB report.
Further guidance may also be provided in the MRB Report regarding the means to escalate the initial minimum inspection/maintenance intervals to a level higher than that which is provided as initial intervals in the MRB Report. This guidance will be unique to the aircraft.
Escalation guidance should take into consideration the content of like checks and their repetitive intervals. A series or sequence of specified checks must be completed and the results found satisfactory, prior to escalation of that type of check.
The existence of national requirements for certain systems does not preclude the Working group from performing the MSG analysis. The MRB report must reflect the outcome of the MSG analysis,

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irrespective of any national requirement. Existing national requirements may be however indicated with a note in the MRB document, or specified in a separate appendix.

Description, type of checks, and their intervals should be included in this section of the MRB Report.

18. Maintenance Programme Rules

The following rules should be contained in the MRB Report:

- (a) If there is an escalation procedure contained in the MRB Report, the following rule applies: The individual check intervals listed in this Report may be escalated following the completion of the required series or sequence of checks and the satisfactory review of check results and approval by the responsible EASA competent authority, or in accordance with the operator's NAA approved reliability programme. Individual task intervals may be escalated based on satisfactory substantiation by the operator, and review and approval by his responsible EASA competent authority, or in accordance with the operator's EASA competent authority -approved reliability programme.
- (b) If there is a sampling programme for the engines, propellers, and/or other aircraft components, the following rule applies: The (insert the name(s) of the unit) sampling programme identified in this Report specifies the number of (insert the name(s) of the unit) to be sampled and the respective inspection thresholds. The MRB Report is the controlling document for this programme. Service Bulletins may be referenced by number in this Report for clarifying the procedural aspects of this programme, however, they shall not be used for escalation purposes.
- (c) Task interval parameters expressed in the MRB Report may be converted to an individual operator's desired units, provided this conversion does not result in the operator exceeding the initial requirements of the MRB Report.
- (d) The use of Non-Destructive Inspection (NDI) methods, such as "X-ray", "ultrasonic", "eddy current", "radio isotope", etc, which are approved by the TC Holder, can provide an alternative to the methods prescribed in this Report. The operator should notify their responsible EASA competent authority of the use of an acceptable alternate method.
- (e) Within this Report the terms "check" and "inspection" are not intended to imply a level of skill required to accomplish a task.
- (f) Life-limited parts must be retired in accordance with the limits established in the engine and aircraft Type Certificate Data Sheets or the Airworthiness Limitations Section of the engine or aircraft manufacturer's Instructions for Continued Airworthiness.
- (g) After the accumulation of industry service experience, the ISC or MRB Chairpersons may request changes to the requirements of this MRB Report.

19. System / Powerplant Programme Rules

The following are recommended contents of the System Programme Rules section of the MRB Report.

"MSG (specify the revision) logic was used to develop an on-wing scheduled maintenance programme. With the exception of life-limited parts, this process does not normally include detailed off-wing shop maintenance procedures. Off-wing detailed procedures are controlled by individual operators and are derived from the operator's reliability programme or are in accordance with the TC Holder's Instructions for Continued Airworthiness.

Maintenance Significant Items (MSI's)

All MSI's identified by the TC-holder have been subjected to the MSG analysis; this process has resulted in the identification of maintenance tasks which are contained in this Report. Those MSI's for which a task was not generated during the analysis are identified as follows:"

(Insert MSI listing for which no tasks were identified)

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20. Structural Programme Rules

Structural Inspection Programmes are developed by the aircraft TC Holder to meet the inspection requirements for damage tolerance. The types of damage considered during programme development are environmental deterioration (corrosion, stress corrosion), accidental, and fatigue. Some forms of environmental deterioration are age related; therefore, inspections for this type of deterioration are controlled by calendar intervals. These calendar inspections, plus the requirements for detecting other types of environmental deterioration, and accidental and fatigue damage, are contained in the Structural Inspection Programme.

The following are recommended contents of the Structural Programme Rules section of the MRB Report:

"All aircraft in an operator's or group of operator's fleet shall be subject to the provisions of this Report. These requirements include external and internal inspections, structural sampling and age-exploration programmes, corrosion prevention and control programmes, and additional supplemental structural inspections that may be required for fatigue-related items. A reliability programme shall not be used to escalate the inspection item listed in the airworthiness limitations section. Initial check intervals for the Structural Inspection Programme are expressed in calendar time, flight cycles, or flight hours. No repeat inspection interval shall be escalated until at least one aircraft in an operator's or group of operator's fleet has been inspected within the initially defined interval listed in the MRB Report.

Structural inspection limitations listed in the aircraft TC-holder's Airworthiness Limitations Section will be referenced in the MRB Report by document number."

(Insert Structural Significant Item Sheets)

21. Zonal Programme Rules.

The Zonal Inspection Programme provides consolidation of a number of GVI tasks for each zone. A zonal inspection may include GVI tasks derived from Maintenance Significant Items (MSI's) and Structural Significant Items (SSI's). An MSI/SSI task which is in the Zonal Inspection Programme must be cross referenced, in the supporting documentation, as a zonal item, likewise, the zonal item must be cross referenced as an MSI/SSI task to ensure content and accountability. The Zonal Programme should also permit appropriate attention to be given to electrical wiring installations and to identify applicable and effective tasks to minimise contamination. An enhanced zonal analysis should be performed for zones that contain both electrical wiring and have a potential for combustible materials being present.

Lightning/High Intensity Radiated Field Analysis (L/HIRF) Programme Rules. The Zonal programme will cover the majority of Lightning/High Intensity Radiated Field protection however, where it is deemed that Zonal maintenance will not adequately identify degradation of the L/HIRF protection additional scheduled maintenance may be generated.

The following are recommended contents of the Zonal Programme Rules section of the MRB Report:

"The Zonal Inspection Programme contains a series of General Visual Inspection (GVI) tasks. Detailed and special Detailed Inspections (DI's) shall not be contained in the Zonal Inspection Programme. Zonal inspection requirements apply only to zones. Access to zones should be easily accomplished and should not require the use of special tools. Normally, the inspections aids to be used are a flashlight and/or inspection mirror. The entire visible contents of the zone must be inspected for obvious damage, security of installation, and general condition including corrosion and leaks. The following zones do not contain system installations but receive adequate surveillance from other maintenance or structural inspection tasks. Accordingly, these zones are not specified in the inspection requirements presented in the Zonal Inspection Programme."

(Insert listings of the zones not specified in the Zonal Inspection Programme, any stand-alone tasks arising from the enhanced Zonal analysis and Zonal Inspection Sheets.)

22. Appendices



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- (a) Aircraft Zones
- (b) National regulation differences as mandated by non EASA NAA's (each shall be approved by the respective authority)
- (c) Acronyms
- (d) Definitions
- (e) Other, as applicable.

**Work Instruction Control Sheets****17. Appendix 2 – Policy and Procedure Handbook (PPH)**

This appendix is to provide guidance to the aircraft manufacturer, and the ISC and MRB Chairpersons during the development and review of the Policy and Procedures Handbook (PPH). The purpose of the PPH is to serve as a user's guide to achieve the objectives of the TC applicant, Industry Steering Committee and regulatory authorities responsible for developing and approving the initial minimum scheduled maintenance/inspection requirements and any amendment processes. The PPH sets forth the policies and procedures that are to be followed by the ISC, MRB and the various Working Groups to ensure consistency during analysis of the design. The following is a listing of items that should be contained in the Policy and Procedures Handbook (PPH).

Recommended Contents:

1. Introduction (identify MSG Baseline)
2. Table of Contents
3. Revisions Log
4. Organisational Outline (including the number and type of Working Groups) and Duties/Responsibilities of Personnel, ISC, Manufacturer(s), Working Group Members, MRB Members and Advisors, Non EASA-NAA participants. The PPH should contain details of the ISC and Working Group constitution. The procedure should include how operators who only attend the ISC but do not support the WG's will be handled (i.e. voting rights) and also how operators who join the process after it has commenced are handled (i.e. they must accept established policies and procedures). If required the procedure should detail how operators can be represented on the ISC by their maintenance organisations and if other maintenance organisations can also take part but only with the agreement of the ISC. The procedure for appointing/electing an ISC Chairman and Co-Chairman should be stated.
5. Technical and Maintenance Development Training (for ISC and Working Group Members, and EASA MRB Advisors).
6. Programme Timetables/Meeting Schedules.
7. Proposed Check Interval Parameters, if any, (for analysis and planning purposes). After a task has been selected using the MSG-3 process, the Working Groups must determine the appropriate task interval. This should be based upon service experience and engineering judgment. The task interval will consist of a frequency and a usage parameter, for example 600 (frequency) flight hours (usage parameter). In its purest form the MRB process should be "task based" with each task being analysed in its own right and the most appropriate usage parameter being utilised however, some TC applicants may prefer to use a letter check packing approach. Whichever process is to be used, it should be detailed in the PPH.
8. Analysis/Procedures to be utilised as appropriate (the list is not exhaustive):
 - (a) The ATA MSG-3 document is the standard recognised by the EASA and the introduction to the PPH should specify its use along with the revision status of MSG used. If for whatever reason differing MSG revision standards are to be used and/or other procedures to cover unique features adopted these should be clearly identified.
 - (b) PPH Revision Control – The procedure for the control of revisions should be included. The original release of the PPH and subsequent revisions require approval by the ISC and the MRB Chairpersons. It is considered to be acceptable that certain revisions may not require formal approval. These should be defined as the non-technical aspects such as the list of acronyms and the list of participants, which during the process may constantly change. The procedure should detail how working groups can provide comments on the PPH and feedback to the ISC.

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- (c) Temporary Revisions to the MRBR – The PPH should detail the procedure that is to be adopted in the case where the applicant wishes to use a procedure to address “temporary revisions” (TR’s) to the MRB Report. The procedure should specify a time limit for incorporation of TR’s into a full revision of the MRB Report.
- (d) Combined Maintenance Planning Document and MRBR – If the TC applicant proposes to use a combined document the PPH should detail the procedure. It must always be possible to clearly identify the requirements derived from the MRB process.
- (e) Task Escalation and Evolution Policy – The procedure should as a minimum consider the following: Fleet Size, Operating Environment, Worldwide usage, Age of Aircraft/Fleet, Importance of Failure Effect Category, Amount and Quality of the supporting data.
- (f) Modifications – The PPH should contain details of how modifications to the aircraft will be addressed.
- (g) MSI’s and Common Areas – The PPH must define how MSI’s are to be identified and should define how all MSI’s must be accounted for as they pass from one WG to another. It should be ensured that MSI boundaries are clearly defined and include such items as hinges, latches, hatches and control surface attachments.
- (h) Engine Condition Trend Monitoring – ECTM is not a task derived from MSG-3 analysis and is not a maintenance task as defined by MSG-3. ECTM is considered to be part of the operator’s reliability programme and is recognised as a valuable aid in the monitoring of engine performance and for planning related maintenance actions. Any reference in the PPH should reflect this situation.
- (i) Maintenance Task Accountability - The PPH should provide details of how all tasks arising from the MSG-3 analysis will be reflected in the MRB report having been considered by the ISC including those that fall out at less than “A” check frequency and those MSI’s for which no task (route 6) has been selected.
- (j) Flight Crew Performing Maintenance – The procedure for addressing this issue should be included. It is not the purpose of the MRB to take into account local requirements concerning who actually accomplishes the maintenance and the PPH should not contain statements to the contrary. Also, credit can only be taken for activities carried out by the operating crew at their normal place of duty i.e. onboard the aircraft.
- (k) National Requirements - The PPH should contain a statement to the effect that National Requirements should not influence the task frequency selection or interfere with the MSG-3 process. If required, the procedure should specify that National Requirements should be addressed in a separate Appendix.
- (l) Template MSI’s - If the applicant proposes to use template MSI’s. The procedure for the use of templates for simple MSI’s should specify that the template MSI is identical and directly applicable to the MSI including utilisation and design parameters. They must have been analysed to same MSG3 revision standard and must be presented to the ISC for acceptance. The PPH should detail the agreed procedure, identify the usage criteria and list the template MSI’s used.
- (m) Emergency/Backup Equipment – The procedure should define how emergency and or safety related item should be analysed and listed as a safety route i.e. 5 or 8. For the definition of such equipment reference should be made to the ATA MSG-3 ‘Glossary of Terms’. The PPH should detail the policy.
- (n) Sampling programmes - MSG will establish sampling requirements when the analysis determines that such sampling is applicable and effective. If appropriate, a procedure should be included in the PPH.
- (o) Powerplant/APU sampling programmes - In those instances where discretionary/sampling/analytical inspections are to be conducted by the TC holder/operator on an opportunity basis, the following procedures should apply. The operator should notify the EASA, in a timely manner, of the time and place of the inspection in order to permit EASA or ‘competent authority’ participation. When attendance is not possible, the

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TCholder/operator will provide a copy of the inspection report to the EASA. Subsequent to the first three inspections of the complete product or modules after introduction into service, further EASA participation will be determined on a case-by-case basis, and predicated on technical issues.

- (p) Corporate Aircraft and Helicopters – TC Applicants and foreign authorities may have different criteria to the EASA and may seek the EASA participation. The MSG-3 logic does not preclude it from being used for all aircraft. The MRB process when applied to corporate aircraft and helicopters for instance can be difficult and present additional problems. The PPH must reflect this with robust procedures to address: the operational sphere of aircraft operation, the likely lack of operator participation, participants with appropriate backgrounds, the balance and reduced number of WG's and the likely low utilisation.
 - (q) Failure Recognition – The PPH procedure should address this and include the point that failures can only be considered evident if enunciated at the time of failure or if they become apparent before the next day otherwise they must be considered to be 'hidden failure'.
 - (r) Central Maintenance Computers/Onboard Maintenance System - credit for this data may not be used by the working group to determine if a failure is "evident" during the analysis process. Additionally, CMC data may not be used as the sole means for a maintenance task, make airworthiness determinations or return to service decisions.
9. Copies of all the Forms used in the process which may include a form identifying questions, actions and transfers during Working Group activities (instruction for use should be specified).
 10. Documentation of Meetings and General Administrative Procedures. The PPH should state that all formal meetings will be documented and the ISC Chairperson, or designee will distribute the minutes.
 11. Acronyms
 12. Definitions
 13. Appendices
 14. MSG Document (optional)
 15. Other, as applicable.



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Appendix	LIST OF RECORDS	REC
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Related to	Description
	Records detailed in EASA Procedure C.P005 - Maintenance Review Board